REQUEST FOR PROPOSAL # FPARC-327

TRACTOR DRAWN AERIAL FIRE APPARATUS

TERMS AND CONDITIONS DOCUMENT

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This RFP is available at the following links:
www.purchasing.co.riverside.ca.us and **www.publicpurchase.com**

NOTE: BIDDERS ARE RESPONSIBLE TO READ ALL INFORMATION THAT IS STATED IN THIS REQUEST FOR PROPOSAL AND PROVIDE A RESPONSE AS REQUIRED

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INSTRUCTIONS TO BIDDERS

1. **Vendor Registration** – Vendor Registration is a two-step process; first step is to register your company on the County's website to receive purchase orders and payments, and the second step is a 3rd party website (Public Purchase) for bidding opportunities

2. **First Step- County of Riverside Purchasing website -** Unless stated elsewhere in this document, vendors may participate in the bidding process; however, the County does encourage all bidders to register online at http://www.purchasing.co.riverside.ca.us/Vendorsregistrationmaintenance.aspx. If awarded a contract, bidder must be registered with the County of Riverside within five days of announced award. This will avoid delays in the purchasing and payment process.

3. **Second Step-Public Purchase** - Public Purchase is a third-party web based e-Procurement service provider utilized by the County of Riverside for RFQ's and RFP's. It will take only minutes to register and it is free. For future bidding, opportunities please also register online at: https://www.publicpurchase.com/gems/register/vendor/register. For all RFQ's Riverside County's Purchasing website will post a notification on its website, and will provide a direct link to PublicPurchase.com.

4. **Pricing/Delivery/Terms/Tax** - All pricing shall be quoted F.O.B. destination, (e.g., cash terms less than 20 days should be considered net) excluding applicable tax, which is a separate line item. The County reserves the right to designate method of freight. The County pays California Sales Tax and is exempt from Federal excise tax. In the event of an extension error, the unit price shall prevail.

5. **Other Terms and Conditions -** The terms and conditions as indicated in this document and/or attached are hereby included with full force and like effect as if set forth herein. Copies of the applicable Terms and Conditions may be obtained by visiting the Purchasing website at www.Purchasing.co.riverside.ca.us or by contacting Riverside Coun**ty** Purchasing at the number shown above and requesting a copy to be emailed.

6. **Period of Firm Pricing** - Unless stated otherwise elsewhere in this document, prices shall be firm for 120 days after the closing date, and prior to an award being made.

7. **Specification/Changes** - Wherever brand names are used, the words "or equal" shall be considered to appear and be a part of the specification. If you are quoting another make or model, cross out our nomenclature and insert yours. If no make or model is stipulated, insert yours. Attach applicable specifications and/or brochures. Variations in manufacturers, design, etc., may be acceptable, bidders are encouraged to offer them as alternatives; however, the County reserves the right to reject those alternatives as nonresponsive.

8. **Recycled Material -** Wherever possible, the County of Riverside is looking for items made from, or containing in part, recycled material. Bidders are encouraged to bid items containing recycled material as an alternative for the items specified; however, the County reserves the right to reject those alternatives as nonresponsive.

9. **Method of Award -** The County reserves the right to reject any or all offers, to waive any discrepancy or technicality and to split or make the award in any manner determined by the County to be most advantageous to the County. The County recognizes that prices are only one of several criteria to be used in judging an offer and the County is not legally bound to accept the lowest offer.

10. **Return of Bid/Closing Date/Return to** - The proposal response shall be submitted via mail or courier service to Riverside County Purchasing and Fleet Services by 1:30 PM Pacific Time on the closing date listed in the RFP. Proposals not received by County Purchasing by the closing date and time will not be accepted. The County will not be responsible for and will **not** accept late proposals.

11. **Local Preference** - The County of Riverside has adopted a local preference program for those businesses located within the County of Riverside. A five percent (5%) price preference may be applied to the total bid price during evaluation of the bid responses. If the overall low responsible and responsive business is a non local vendor, the low local vendor who is within five percent (5%) of that overall low bidder may, where applicable, be offered the opportunity to meet the overall low bidder's price and will receive the award. To qualify as a local business, the business must meet all criteria delineated in the Local Preference Affidavit 116-260 and submit the form with their

bid. If Bidder fails to provide a completed Local Business Qualification Affidavit form 116-260 with their bid submittal, the Bidder may be disqualified from obtaining local preference. It is the sole responsibility of the Bidder to identify local preference with each bid submittal. Application of this local preference may be waived if funding sources disallow it. **or**

12. **Veterans Incentive Purchasing Program** – The County of Riverside has implemented a Veteran Business and Veteran Qualified Business preference policy. Where applicable, a five percent (5%) preference shall be applied to the total bid price of all quotes/bids/proposals received by the County from veteran owned business or veteran qualified business. A veteran business is one where at least 51% of the business is owned by an honorably discharged veteran. A veteran qualified business is one where at least 10% their workforce is honorably discharged veterans. If Bidder fails to provide a completed Veteran Qualified Business Qualification Affidavit form with their bid submittal, the Bidder may be disqualified from obtaining the preference and it is the sole responsibility of the Bidder to identify the preference with each bid submittal. To qualify bidders must complete the Veteran Business/Veteran Qualified Affidavit, Form 116-261. This preference does not apply to all types of bids such as public works projects and some grant funded programs.

Terms and Conditions Acknowledgement (Vendor Company Name):		
IF CHECKED, THE FOLLOWING DOCUMENTS HEREBY MADE PART OF THIS RFQ		
√ APPENDIX "A"	√ EXHIBIT(S)	PLANS/DRAWINGS
√#116-260 Local Business Qualification Affidavit	√#116-261 Veterans Business Qualification Affidavit	

IF CHECKED, THE FOLLOWING GENERAL CONDITIONS ARE INCLUDED WITH FULL FORCE AND LIKE EFFECT AS IF SET FORTH HEREIN

√ #116-200	General Conditions Product/Personal/Professional Services	√ #116-210	General Conditions Materials and/or Services
√ #116-230	General Conditions – Equipment	√ #116-310	Boilerplate Contract

To access any of these General Conditions go to www.purchasing.co.riverside.ca.us, located in Vendor link. If an addendum is issued for this procurement, it will be the vendor's responsibility to retrieve all applicable addendum(s) from the Public Purchase website.

1.0 TIMELINE/IMPORTANT DATES

TIMELINE	DATES
1.1 **RELEASE OF REQUEST FOR PROPOSAL**	Friday, August 10, 2018
1.2 **NON-MANDATORY PRE-PROPOSAL CONFERENCE** Location: Riverside County Fire Department 88 East Rider Street Perris, CA 92571 Firms interested in attending the Pre-Proposal Conference are requested to confirm their attendance via e-mail to john.miller@fire.ca.gov by 1:00 PM on Wednesday, August 29st, 2018. *Please note that attendance is limited to no more than three (3) in-person attendees per Bidder.	Wednesday, September 5th, 2018 Time: 9:00 am Pacific Time The Pre-Proposal Conference will also be available via teleconference. The toll-free number is: 1-866-700-9668 The Access Code is: 9845839
1.3 **DEADLINE FOR SUBMISSION OF QUESTIONS** Bidders must submit their questions online at www.publicpurchase.com All questions submitted are located within the RFP are located on www.publicpurchase.com	Must be received in writing by: Wednesday, September 26, 2018 Responses to questions will be posted on www.publicpurchase.com no later than Wednesday, October 3, 2018
1.4 **DEADLINE FOR PROPOSAL SUBMITTAL** ALL PROPOSALS MUST BE DELIVERED TO: County of Riverside Purchasing and Fleet Services 2980 Washington Street Riverside, CA 92504 RFP # FPARC-327	On or before Wednesday, October 24th, 2018 Time: 1:30 pm Pacific Time
1.5 **TENTATIVE DATE FOR AWARDING RFP** Approximately 60 to 120 days after the RFP closes. The County of Riverside expects to have a contract in place on or before 12/31/2018.	The Bidders are responsible for checking the Purchasing website for notice of intent to award at: www.publicpurchase.com or www.Purchasing.co.riverside.ca.us

1.6 **Inquiries:** All inquiries must be submitted to the Procurement Contract Specialist in writing on or before the last day for questions. Please refer to "Section 1.0 Timeline/Dates" for the particular date. Inquiries must reference the section number and title from the RFP. Bidders must submit their questions online at www.publicpurchase.com and must be in written format. All responses to Bidders questions will be posted online at www.publicpurchase.com.

2.0 PERIOD OF PERFORMANCE

The County intends to award a contract for up to five (5) years to the most responsive, responsible bidder; whose proposal, represents the best value to the County. The contract term will include a one (1) year base period and four (4) one (1) year options renewable at the County's sole discretion. The County anticipates placing an order for up to two (2) TDA apparatus in the first year and one (1) TDA apparatus each year thereafter for a total of up to six (6) TDA apparatus over the five (5) year term. These quantities; however, may be more or less and are dependent on the availability of fiscal funding and operational needs of the county.

3.0 DEFINITIONS

3.1 "Addendum" refers to a change(s) to the RFP (Request for Proposals).

3.2 "Bid" refers to the proposal submitted by a Bidder on the Bid Form consistent with the Instructions to Bidders, to complete the work for a specified sum of money and within a specified period.

3.3 "Bidder" refers to an individual, firm, partnership or corporation that submits a qualified Bid for the work, either directly or through a duly authorized representative.

3.4 "Board of Supervisors" refers to the County of Riverside's Board of Supervisors.

3.5 "Contractor" refers to any employee, agent, or representative of the contract company used in conjunction with the performance of the contract. For the purposes of this RFP, Contractor, Vendor, and Bidder are used interchangeably.

3.6 "County" refers the County of Riverside and the Riverside County Fire Department. For purposes of this RFP, Riverside County Fire Department and County are used interchangeably.

3.8 "RFP" refers to Request for Proposal.

3.9 "MQs" shall mean minimum qualifications

4.0 EVALUATION PROCESS

4.1 Proposals will be evaluated based on criteria determined to be appropriate by the County, which may include, but not necessarily limited to the following:

a) Response to Attachment "A" FPARC-327 Bidder Proposal Response.
b) Overall cost to the County.
c) Bidder/Apparatus Manufacturer's technical capability and ability to meet specifications and quality of workmanship requirements annotated in this RFP.
d) Bidder/Apparatus Manufacturer's experience and proven ability in building apparatus similar in Type and Specification annotated in this RFP; to include, quality of recently completed projects, adherence to schedules/deadlines and budgets.
e) Past Performance References. (Pass/Fail)
f) Clarification, Exceptions or Deviations. (Pass/Fail)
g) Any other factors the County determines to be appropriate.

4.2 All proposals will be given thorough review. All communication during the bidding process and review selection phase must go through the Procurement Contract Specialist Mr. John Miller. Attempts by the Bidder to contact any other County representative regarding this solicitation will result in disqualification of the Bidder.

4.3 All evaluation material will be considered confidential and not released by the County. The County reserves the right to split or make the award that is most advantageous to the County.

5.0 GENERAL PROPOSAL SUBMITTAL

5.1 All proposals must be submitted in accordance with the standards and specifications contained within this RFP and must contain a cover page Tab B with a certification of intent to meet the requirements specified.

5.2 The County reserves the right to waive, at its discretion, any irregularity, which the County deems reasonably correctable or otherwise not warranting rejection of the proposal.

5.3 The County shall not pay any costs incurred or associated in the preparation of this or any proposal or for participation in the procurement process.

5.4 Modification of Proposals, any bidder who wishes to make modifications to a proposal already received by the County must withdraw his/her proposal in order to make the modifications. All modifications must be made in ink, properly initialed by bidder's authorized representative, executed, and submitted in accordance with the terms and conditions of this solicitation. It is the responsibility of the bidder to ensure that modified proposals are resubmitted before the RFP submittal deadline.

5.5 Bidders may withdraw their proposals at any time prior to the due date and time by submitting notification of withdrawal signed by the bidder's authorized agent. Proposals cannot be changed or modified after the date and time designated for receipt.

5.6 Late proposals will not be accepted. Postmarks will not be accepted in lieu of this requirement. Proposals submitted to any other County office will be rejected.

5.7 Faxed or emailed proposals will not be accepted.

5.8 All proposals shall be signed by an authorized agent and placed in a sealed package clearly marked "RFP # FPARC-327"

5.9 One (1) original and five (5) additional copies, each in a 3-ring binder for ease of opening by evaluators. Bidders shall submit one (1) (Microsoft Word or PDF document formatted on a virus free thumb drive) inside the **original binder** only.

5.10 Binder capacity should be a minimum of 2" (two inches) to allow for ease of referencing various sections. (Small binders that are over stuffed or difficult to open may count against the bidder)

5.11 Proposals must be typed uniformly on letter size (8 ½" x 11") sheets of white paper, single sided or double sided, each section clearly titled, with index dividers labeled Tabs A – I, and each page clearly and consecutively numbered. Proposals must be clean and suitable for copying. Proposals must be specific unto themselves. For example, "See Enclosed Manual" will not be considered an acceptable proposal. Receipt of all addenda, if any, must be signed and included in the proposal.

5.12 The proposal shall be concise and to the point. Costly bindings, color plates, glossy brochures, etc. are neither necessary nor recommended. A letter format in sufficient detail to allow thorough evaluation and analysis is required.

5.13 All work papers prepared in connection with the contractual services will remain the property of the successful bidder; however, all reports rendered to the County are the exclusive property of the County and subject to its use and control.

6.0 CONFIDENTIALITY AND PROPRIETARY DATA

Upon submission of a proposal and after the County's evaluation, the proposals become the exclusive property of the County. Upon submission of a proposal, the submission and any pertaining documents is subject to the State of California Public Records Act. Exceptions will be those elements in the California Government Code section 6250 et. seq. (Public Records Act) and which are marked "trade secret," "confidential," or "proprietary." The County shall not be liable or responsible for the disclosure of any such records, including, without limitation, those so marked, if disclosure is required by law, or by an order issued by a court of competent jurisdiction. In the event the County is required to defend an action on a Public Records Act request for any of the aforementioned documents, information, books, records, and/or contents of a Qualification marked "trade secret", "confidential", or "proprietary" the Vendor agrees to defend and indemnify the County from all costs and expenses, including reasonable attorney's fees, in action or liability arising under the Public Records Act. Where applicable, Federal regulations may take precedence over this language. If a Contractor's proposal is accepted and an agreement is made with the County, then the Contractor will be required to sign the most current HIPAA Business Associate Addendum (If applicable). If the County revises the HIPAA Associate Addendum, the Contractor shall sign a new agreement as it becomes available and adhere to the new requirements.

7.0 INTERPRETATION OF RFP

The Contractor must make careful examination and understand all of the requirements, specifications, and conditions stated in the RFP. If any Contractor planning to submit a proposal finds discrepancies in or omissions from the RFP, or is in doubt as to the meaning, a written request for interpretation or correction must be given to the County. Any changes to the RFP will be made only by written addendum and may be posted on the Purchasing website at www.purchasing.co.riverside.ca.us and www.publicpurchase.com. The County is not responsible for any other explanations or interpretations. If any provision in this agreement is held by a court of

competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way. All notices regarding this procurement may be posted on the County's purchasing website at www.purchasing.co.riverside.ca.us and www.publicpurchase.com.

8.0 CONTRACTUAL DEVELOPMENT

If a proposal is accepted, the County will enter into a contractual agreement with the selected Contractor. A sample of the standard County contract to be used for this project is attached as Exhibit A. If an agreement cannot be reached, negotiations with the second ranking Contractor shall commence.

9.0 CANCELLATION OR MODIFICATION OF PROCUREMENT PROCESS

County may cancel the procurement process at any time. All proposals become the property of the County. All information submitted in the proposal becomes "public record" as defined by the State of California upon completion of the procurement process. If any proprietary information is contained in or attached to the proposal, it must be clearly identified by the Contractor; otherwise, the Contractor agrees that all documents provided may be released to the public after contract award.

The procurement process may be canceled after opening, but prior to award if the County determines that cancellation is in the best interest of the County for reasons (but not limited to) such as:

- ✓ Inadequate, ambiguous, or otherwise deficient specifications.
- ✓ The services are no longer required.
- ✓ Proposals received are at an unreasonable cost.
- ✓ Proposal did not arrive in open competition, were collusive, or not submitted in good faith.
- ✓ The County determines, after analysis of the proposals that its needs can be satisfied through a less expensive method.

The County reserves the right to amend or modify the specifications prior to the award of contract, as necessity may dictate, and to reject any proposals hereunder. This Request for Proposal does not commit the County to award a contract or to pay any costs incurred in the preparation of a proposal in response to this request. The County reserves the right to accept or reject any or all proposals received because of this request, to negotiate with any qualified source or to cancel in part or in its entirety this Request of Proposal if it is in the best interest of the County.

10.0 COUNTY OBSERVED HOLIDAYS

HOLIDAY	DAY OBSERVED
* New Year's Day	January 1
Martin Luther King Jr's Birthday	Third Monday in January
Lincoln's Birthday	Second Tuesday in February
Washington's Birthday	Third Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Veterans' Day	November 12

*Thanksgiving Day	Fourth Thursday in November
* Following Thanksgiving	Friday following the fourth Thursday in November
*Christmas Day	December 25

*** Note:**

- Thanksgiving Day, which shall be the fourth Thursday in November unless otherwise appointed.
- Friday following Thanksgiving Day.
- December 24 and 31 when they fall on Monday.
- December 26 and January 2, when they fall on Friday.
- Friday proceeding January 1, February 12, July 4, November 11 or December 25, when such date falls on Saturday, the Monday following such date when such date falls on a Sunday.

EXHIBIT A

SAMPLE AGREEMENT

for

(INSERT NAME OF PROGRAM)

between

COUNTY OF RIVERSIDE

and

(INSERT COMPANY NAME)

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Exhibit A-Scope of Service

Exhibit B- Payment Provisions

This Agreement, made and entered into this ___day of ____, 201X, by and between (INSERT COMPANY NAME), (herein referred to as "CONTRACTOR"), and the COUNTY OF RIVERSIDE, a political subdivision of the State of California, (herein referred to as "COUNTY"). The parties agree as follows:

1. Description of Services

1.1 CONTRACTOR shall provide all services as outlined and specified in Exhibit A, Scope of Services, consisting of (INSERT # OF PAGES) pages at the prices stated in Exhibit B, Payment Provisions, consisting of (INSERT # OF PAGES) pages, and Attachment I, HIPAA Business Associate Attachment to the Agreement, consisting of (INSERT # OF PAGES) pages.

1.2 CONTRACTOR represents that it has the skills, experience, and knowledge necessary to perform under this Agreement and the COUNTY relies upon this representation. CONTRACTOR shall perform to the satisfaction of the COUNTY and in conformance to and consistent with the highest standards of firms/professionals in the same discipline in the State of California.

1.3 CONTRACTOR affirms this it is fully apprised of all of the work to be performed under this Agreement; and the CONTRACTOR agrees it can properly perform this work at the prices stated in Exhibit B. CONTRACTOR is not to perform services or provide products outside of the Agreement.

1.4 Acceptance by the COUNTY of the CONTRACTOR's performance under this Agreement does not operate as a release of CONTRACTOR's responsibility for full compliance with the terms of this Agreement.

2. Period of Performance

2.1 This Agreement shall be effective upon signature of this Agreement by both parties and continues in effect through (INSERT DATE), unless terminated earlier. CONTRACTOR shall commence performance upon signature of this Agreement by both parties and shall diligently and continuously perform thereafter. The Riverside County Board of Supervisors is the only authority that may obligate the County for a non-cancelable multi-year agreement.

3. Compensation

3.1 The COUNTY shall pay the CONTRACTOR for services performed, products provided and expenses incurred in accordance with the terms of Exhibit B, Payment Provisions. Maximum payments by COUNTY to CONTRACTOR shall not exceed (INSERT DOLLAR AMOUNT) annually including all expenses. The COUNTY is not responsible for any fees or costs incurred above or beyond the contracted amount and shall have no obligation to purchase any specified amount of services or products. Unless otherwise specifically stated in Exhibit B, COUNTY shall not be responsible for payment of any of CONTRACTOR's expenses related to this Agreement.

3.2 No price increases will be permitted during the first year of this Agreement (If applicable). All price decreases (for example, if CONTRACTOR offers lower prices to another governmental entity) will automatically be extended to the COUNTY. The COUNTY requires written proof satisfactory to COUNTY of cost increases prior to any approved price adjustment. After the first year of the award, a minimum of 30-days advance notice in writing is required to be considered and approved by COUNTY. No retroactive price adjustments will be considered. Any price increases must be stated in a written amendment to this Agreement. The net dollar amount of profit will remain firm during the period of the Agreement. Annual increases shall not exceed the Consumer Price Index- All Consumers, All Items - Greater Los Angeles, Riverside and Orange County areas \and be subject to satisfactory performance review by the COUNTY and approved (if needed) for budget funding by the Board of Supervisors.

3.3 CONTRACTOR shall be paid only in accordance with an invoice submitted to COUNTY by CONTRACTOR within fifteen (15) days from the last day of each calendar month, and COUNTY shall pay the invoice within thirty (30) working days from the date of receipt of the invoice. Payment shall be made to CONTRACTOR only after services have been rendered or delivery of materials or products, and

acceptance has been made by COUNTY. Prepare invoices in duplicate. For this Agreement, send the original and duplicate copies of invoices to:

(INSERT DEPARTMENT NAME AND ADDRESS)

a) Each invoice shall contain a minimum of the following information: invoice number and date; remittance address; bill-to and ship-to addresses of ordering department/division; Agreement number (insert contract ID#); quantities; item descriptions, unit prices, extensions, sales/use tax if applicable, and an invoice total.

b) Invoices shall be rendered monthly in arrears.

3.4 The COUNTY obligation for payment of this Agreement beyond the current fiscal year end is contingent upon and limited by the availability of COUNTY funding from which payment can be made, and invoices shall be rendered "monthly" in arrears. In the State of California, Government agencies are not allowed to pay excess interest and late charges, per Government Codes, Section 926.10. No legal liability on the part of the COUNTY shall arise for payment beyond June 30 of each calendar year unless funds are made available for such payment. In the event that such funds are not forthcoming for any reason, COUNTY shall immediately notify CONTRACTOR in writing; and this Agreement shall be deemed terminated, have no further force, and effect.

4. Alteration or Changes to the Agreement

4.1 The Board of Supervisors and the COUNTY Purchasing Agent and/or his/her designee are the only authorized COUNTY representatives who may at any time, by written order, alter this Agreement. If any such alteration causes an increase or decrease in the cost of, or the time required for the performance under this Agreement, an equitable adjustment shall be made in the Agreement price or delivery schedule, or both, and the Agreement shall be modified by written amendment accordingly.

4.2 Any claim by the CONTRACTOR for additional payment related to this Agreement shall be made in writing by the CONTRACTOR within 30 days of when the CONTRACTOR has or should have notice of any actual or claimed change in the work, which results in additional and unanticipated cost to the CONTRACTOR. If the COUNTY Purchasing Agent decides that the facts provide sufficient justification, may authorize additional payment to the CONTRACTOR pursuant to the claim. Nothing in this section shall excuse the CONTRACTOR from proceeding with performance of the Agreement even if there has been a change.

5. Termination

5.1. COUNTY may terminate this Agreement without cause upon 30 days written notice served upon the CONTRACTOR stating the extent and effective date of termination.

5.2 COUNTY may, upon five (5) days written notice terminate this Agreement for CONTRACTOR's default, if CONTRACTOR refuses or fails to comply with the terms of this Agreement or fails to make progress that may endanger performance and does not immediately cure such failure. In the event of such termination, the COUNTY may proceed with the work in any manner deemed proper by COUNTY.

5.3 After receipt of the notice of termination, CONTRACTOR shall:

(a) Stop all work under this Agreement on the date specified in the notice of termination; and

(b) Transfer to COUNTY and deliver in the manner as directed by COUNTY any materials, reports or other products, which, if the Agreement had been completed or continued, would have been required to be furnished to COUNTY.

5.4 After termination, COUNTY shall make payment only for CONTRACTOR's performance up to the date of termination in accordance with this Agreement.

5.5 CONTRACTOR's rights under this Agreement shall terminate (except for fees accrued prior to the date of termination) upon dishonesty or a willful or material breach of this Agreement by CONTRACTOR; or in the event of CONTRACTOR's unwillingness or inability for any reason whatsoever to perform the terms of this Agreement. In such event, CONTRACTOR shall not be entitled to any further compensation under this Agreement.

5.6 If the Agreement is federally or State funded, CONTRACTOR cannot be debarred from the System for Award Management (SAM). CONTRACTOR must notify the COUNTY immediately of a debarment. CONTRACTOR to reference: System for Award Management (SAM) at https://www.sam.gov for Central Contractor Registry (CCR), Federal Agency Registration (Fedreg), Online Representations and Certifications Application, and Excluded Parties List System (EPLS)). Excluded Parties Listing System (EPLS) (http://www.epls.gov) (Executive Order 12549, 7 CFR Part 3017, 45 CFR Part 76, and 44 CFR Part 17). The System for Award Management (SAM) is the Official U.S. Government system that consolidated the capabilities of CCR/FedReg, ORCA, and EPLS.

5.7 The rights and remedies of COUNTY provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or this Agreement.

6. Ownership/Use of Contract Materials and Products

The CONTRACTOR agrees that all materials, reports or products in any form, including electronic, created by CONTRACTOR for which CONTRACTOR has been compensated by COUNTY pursuant to this Agreement shall be the sole property of the COUNTY. The material, reports or products may be used by the COUNTY for any purpose COUNTY deems to be appropriate, including, but not limit to, duplication and/or distribution within the COUNTY or to third parties. CONTRACTOR agrees not to release or circulate in whole or part such materials, reports, or products without prior written authorization of the COUNTY.

7. Conduct of Contractor

7.1 The CONTRACTOR covenants that it presently has no interest, including, but not limited to, other projects or contracts, and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with CONTRACTOR's performance under this Agreement. The CONTRACTOR further covenants that no person or subcontractor having any such interest shall be employed or retained by CONTRACTOR under this Agreement. The CONTRACTOR agrees to inform the COUNTY of all the CONTRACTOR's interests, if any, which are or may be perceived as incompatible with the COUNTY's interests.

7.2 The CONTRACTOR shall not, under circumstances which could be interpreted as an attempt to influence the recipient in the conduct of his/her duties, accept any gratuity or special favor from individuals or firms with whom the CONTRACTOR is doing business or proposing to do business, in accomplishing the work under this Agreement.

7.3 The CONTRACTOR or its employees shall not offer gifts, gratuity, favors, and entertainment directly or indirectly to COUNTY employees.

8. Inspection of Service; Quality Control/Assurance

8.1 All performance (which includes services, workmanship, materials, supplies and equipment furnished or utilized in the performance of this Agreement) shall be subject to inspection and test by the COUNTY or other regulatory agencies at all times. The CONTRACTOR shall provide adequate cooperation to any inspector or other COUNTY representative to permit him/her to determine the CONTRACTOR's conformity with the terms of this Agreement. If any services performed or products provided by CONTRACTOR are not in conformance with the terms of this Agreement, the COUNTY shall have the right to require the CONTRACTOR to perform the services or provide the products in conformance with the terms of the Agreement at no additional cost to the COUNTY. When the services to be performed or the products to be provided are of such nature that the difference cannot be

corrected; the COUNTY shall have the right to: (1) require the CONTRACTOR immediately to take all necessary steps to ensure future performance in conformity with the terms of the Agreement; and/or (2) reduce the Agreement price to reflect the reduced value of the services performed or products provided. The COUNTY may also terminate this Agreement for default and charge to CONTRACTOR any costs incurred by the COUNTY because of the CONTRACTOR's failure to perform.

8.2 CONTRACTOR shall establish adequate procedures for self-monitoring and quality control and assurance to ensure proper performance under this Agreement; and shall permit a COUNTY representative or other regulatory official to monitor, assess, or evaluate CONTRACTOR's performance under this Agreement at any time, upon reasonable notice to the CONTRACTOR.

9. Independent Contractor/Employment Eligibility

9.1 The CONTRACTOR is, for purposes relating to this Agreement, an independent contractor and shall not be deemed an employee of the COUNTY. It is expressly understood and agreed that the CONTRACTOR (including its employees, agents, and subcontractors) shall in no event be entitled to any benefits to which COUNTY employees are entitled, including but not limited to overtime, any retirement benefits, worker's compensation benefits, and injury leave or other leave benefits. There shall be no employer-employee relationship between the parties; and CONTRACTOR shall hold COUNTY harmless from any and all claims that may be made against COUNTY based upon any contention by a third party that an employer-employee relationship exists by reason of this Agreement. It is further understood and agreed by the parties that CONTRACTOR in the performance of this Agreement is subject to the control or direction of COUNTY merely as to the results to be accomplished and not as to the means and methods for accomplishing the results.

9.2 CONTRACTOR warrants that it shall make its best effort to comply with all federal and state statutes and regulations regarding the employment of aliens and others and to ensure that employees performing work under this Agreement meet the citizenship or alien status requirement set forth in federal statutes and regulations. CONTRACTOR shall obtain, from all employees performing work hereunder, all verification and other documentation of employment eligibility status required by federal or state statutes and regulations including, but not limited to, the Immigration Reform and Control Act of 1986, 8 U.S.C. §1324 et seq., as they currently exist and as they may be hereafter amended. CONTRACTOR shall retain all such documentation for all covered employees, for the period prescribed by the law.

9.3 Ineligible Person shall be any individual or entity who: Is currently excluded, suspended, debarred or otherwise ineligible to participate in the federal health care programs; or has been convicted of a criminal offense related to the provision of health care items or services and has not been reinstated in the federal health care programs after a period of exclusion, suspension, debarment, or ineligibility.

9.4 CONTRACTOR shall screen prospective Covered Individuals prior to hire or engagement. CONTRACTOR shall not hire or engage any Ineligible Person to provide services directly relative to this Agreement. CONTRACTOR shall screen all current Covered Individuals within sixty (60) days of execution of this Agreement to ensure that they have not become Ineligible Persons unless CONTRACTOR has performed such screening on same Covered Individuals under a separate agreement with COUNTY within the past six (6) months. Covered Individuals shall be required to disclose to CONTRACTOR immediately any debarment, exclusion or other event that makes the Covered Individual an Ineligible Person. CONTRACTOR shall notify COUNTY within five (5) business days after it becomes aware if a Covered Individual providing services directly relative to this Agreement becomes debarred, excluded or otherwise becomes an Ineligible Person.

9.5 CONTRACTOR acknowledges that Ineligible Persons are precluded from providing federal and state funded health care services by contract with COUNTY in the event that they are currently sanctioned or excluded by a federal or state

law enforcement regulatory or licensing agency. If CONTRACTOR becomes aware that a Covered Individual has become an Ineligible Person, CONTRACTOR shall remove such individual from responsibility for, or involvement with, COUNTY business operations related to this Agreement.

9.6 CONTRACTOR shall notify COUNTY within five (5) business days if a Covered Individual or entity is currently excluded, suspended or debarred, or is identified as such after being sanction screened. Such individual or entity shall be promptly removed from participating in any activity associated with this Agreement.

10. Subcontract for Work or Services

No contract shall be made by the CONTRACTOR with any other party for furnishing any of the work or services under this Agreement without the prior written approval of the COUNTY; but this provision shall not require the approval of contracts of employment between the CONTRACTOR and personnel assigned under this Agreement, or for parties named in the proposal and agreed to under this Agreement.

11. Disputes

11.1 The parties shall attempt to resolve any disputes amicably at the working level. If that is not successful, the dispute shall be referred to the senior management of the parties. Any dispute relating to this Agreement, which is not resolved by the parties, shall be decided by the COUNTY's Purchasing Department's Compliance Contract Officer who shall furnish the decision in writing. The decision of the COUNTY's Compliance Contract Officer shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary, or so grossly erroneous to imply bad faith. The CONTRACTOR shall proceed diligently with the performance of this Agreement pending the resolution of a dispute.

11.2 Prior to the filing of any legal action related to this Agreement, the parties shall be obligated to attend a mediation session in Riverside County before a neutral third party mediator. A second mediation session shall be required if the first session is not successful. The parties shall share the cost of the mediations.

12. Licensing and Permits

CONTRACTOR shall comply with all State or other licensing requirements, including but not limited to the provisions of Chapter 9 of Division 3 of the Business and Professions Code. All licensing requirements shall be met at the time proposals are submitted to the COUNTY. CONTRACTOR warrants that it has all necessary permits, approvals, certificates, waivers and exemptions necessary for performance of this Agreement as required by the laws and regulations of the United States, the State of California, the County of Riverside and all other governmental agencies with jurisdiction, and shall maintain these throughout the term of this Agreement.

13. Use By Other Political Entities

The CONTRACTOR agrees to extend the same pricing, terms, and conditions as stated in this Agreement to each and every political entity, special district, and related non-profit entity in Riverside County. It is understood that other entities shall make purchases in their own name, make direct payment, and be liable directly to the CONTRACTOR; and COUNTY shall in no way be responsible to CONTRACTOR for other entities' purchases.

14. Non-Discrimination

CONTRACTOR shall not be discriminate in the provision of services, allocation of benefits, accommodation in facilities, or employment of personnel on the basis of ethnic group identification, race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status or sex in the performance of this Agreement; and, to the extent they shall be found to be applicable hereto, shall comply with the provisions of the California Fair Employment and Housing Act (Gov. Code 12900 et. seq),

the Federal Civil Rights Act of 1964 (P.L. 88-352), the Americans with Disabilities Act of 1990 (42 U.S.C. **S**1210 et seq.) and all other applicable laws or regulations.

15. Records and Documents

CONTRACTOR shall make available, upon written request by any duly authorized Federal, State, or COUNTY agency, a copy of this Agreement and such books, documents and records as are necessary to certify the nature and extent of the CONTRACTOR's costs related to this Agreement. All such books, documents and records shall be maintained by CONTRACTOR for at least five years following termination of this Agreement and be available for audit by the COUNTY. CONTRACTOR shall provide to the COUNTY reports and information related to this Agreement as requested by COUNTY.

16. Confidentiality

16.1 The CONTRACTOR shall not use for personal gain or make other improper use of privileged or confidential information which is acquired in connection with this Agreement. The term "privileged or confidential information" includes but is not limited to: unpublished or sensitive technological or scientific information; medical, personnel, or security records; anticipated material requirements or pricing/purchasing actions; COUNTY information or data which is not subject to public disclosure; COUNTY operational procedures; and knowledge of selection of contractors, subcontractors or suppliers in advance of official announcement.

16.2 The CONTRACTOR shall protect from unauthorized disclosure names and other identifying information concerning persons receiving services pursuant to this Agreement, except for general statistical information not identifying any person. The CONTRACTOR shall not use such information for any purpose other than carrying out the CONTRACTOR's obligations under this Agreement. The CONTRACTOR shall promptly transmit to the COUNTY all third party requests for disclosure of such information. The CONTRACTOR shall not disclose, except as otherwise specifically permitted by this Agreement or authorized in advance in writing by the COUNTY, any such information to anyone other than the COUNTY. For purposes of this paragraph, identity shall include, but not be limited to, name, identifying number, symbol, or other identifying particulars assigned to the individual, such as finger or voice print or a photograph.

(Depending on the type of service "HIPAA" may or may not apply)

16.3 The CONTRACTOR is subject to and shall operate in compliance with all relevant requirements contained in the Health Insurance Portability and Accountability Act of 1996 (HIPAA), Public Law 104-191, enacted August 21, 1996, and the related laws and regulations promulgated subsequent thereto. Please refer to Attachment 1 of this agreement.

17. Administration/Contract Liaison

The COUNTY Purchasing Agent, or designee, shall administer this Agreement on behalf of the COUNTY. The Purchasing Department is to serve as the liaison with CONTRACTOR in connection with this Agreement.

18. Notices

All correspondence and notices required or contemplated by this Agreement shall be delivered to the respective parties at the addresses set forth below and are deemed submitted two days after their deposit in the United States mail, postage prepaid:

COUNTY OF RIVERSIDE	**CONTRACTOR**
(INSERT DEPARTMENT NAME)	(INSERT CONTRACTOR NAME)
(INSERT ADDRESS)	(INSERT ADDRESS)

19. Force Majeure

If either party is unable to comply with any provision of this Agreement due to causes beyond its reasonable control, and which could not have been reasonably anticipated, such as acts of God, acts of war, civil disorders, or other similar acts, such party shall not be held liable for such failure to comply.

20. EDD Reporting Requirements

In order to comply with child support enforcement requirements of the State of California, the COUNTY may be required to submit a Report of Independent Contractor(s) form DE 542 to the Employment Development Department. The CONTRACTOR agrees to furnish the required data and certifications to the COUNTY within 10 days of notification of award of Agreement when required by the EDD. This data will be transmitted to governmental agencies charged with the establishment and enforcement of child support orders. Failure of the CONTRACTOR to timely submit the data and/or certificates required may result in the contract being awarded to another contractor. In the event a contract has been issued, failure of the CONTRACTOR to comply with all federal and state reporting requirements for child support enforcement or to comply with all lawfully served Wage and Earnings Assignments Orders and Notices of Assignment shall constitute a material breach of Agreement. If CONTRACTOR has any questions concerning this reporting requirement, please call (916) 657-0529. CONTRACTOR should also contact its local Employment Tax Customer Service Office listed in the telephone directory in the State Government section under "Employment Development Department" or access their Internet site at www.edd.ca.gov.

21. Hold Harmless/Indemnification

21.1 CONTRACTOR shall indemnify and hold harmless the County of Riverside, its Agencies, Districts, Special Districts and Departments, their respective directors, officers, Board of Supervisors, elected and appointed officials, employees, agents and representatives (individually and collectively hereinafter referred to as Indemnitees) from any liability, action, claim or damage whatsoever, based or asserted upon any services of CONTRACTOR, its officers, employees, subcontractors, agents or representatives arising out of or in any way relating to this Agreement, including but not limited to property damage, bodily injury, or death or any other element of any kind or nature. CONTRACTOR shall defend, at its sole expense, all costs, and fees including, but not limited, to attorney fees, cost of investigation, defense and settlements or awards, the Indemnitees in any claim or action based upon such alleged acts or omissions.

21.2 With respect to any action or claim subject to indemnification herein by CONTRACTOR, CONTRACTOR shall, at their sole cost, have the right to use counsel of their own choice and shall have the right to adjust, settle, or compromise any such action or claim without the prior consent of COUNTY; provided, however, that any such adjustment, settlement or compromise in no manner whatsoever limits or circumscribes CONTRACTOR'S indemnification to Indemnitees as set forth herein.

21.3 CONTRACTOR'S obligation hereunder shall be satisfied when CONTRACTOR has provided to COUNTY the appropriate form of dismissal relieving COUNTY from any liability for the action or claim involved.

21.4 The specified insurance limits required in this Agreement shall in no way limit or circumscribe CONTRACTOR'S obligations to indemnify and hold harmless the Indemnitees herein from third party claims.

22. Insurance

22.1 Without limiting or diminishing the CONTRACTOR'S obligation to indemnify or hold the COUNTY harmless, CONTRACTOR shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverage's during the term of this Agreement. As respects to the insurance section only, the COUNTY herein refers to the County of Riverside,

its Agencies, Districts, Special Districts, and Departments, their respective directors, officers, Board of Supervisors, employees, elected or appointed officials, agents, or representatives as Additional Insureds.

A. Workers' Compensation:

If the CONTRACTOR has employees as defined by the State of California, the CONTRACTOR shall maintain statutory Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Policy shall include Employers' Liability (Coverage B) including Occupational Disease with limits not less than $1,000,000 per person per accident. The policy shall be endorsed to waive subrogation in favor of The County of Riverside.

B. Commercial General Liability:

Commercial General Liability insurance coverage, including but not limited to, premises liability, unmodified contractual liability, products and completed operations liability, personal and advertising injury, and cross liability coverage, covering claims which may arise from or out of CONTRACTOR'S performance of its obligations hereunder. Policy shall name the COUNTY as Additional Insured. Policy's limit of liability shall not be less than $1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this agreement or be no less than two (2) times the occurrence limit.

C. Vehicle Liability:

If vehicles or mobile equipment is used in the performance of the obligations under this Agreement, then CONTRACTOR shall maintain liability insurance for all owned, non-owned, or hired vehicles so used in an amount not less than $1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this agreement or be no less than two (2) times the occurrence limit. Policy shall name the COUNTY as Additional Insureds.

D. Professional Liability (ONLY TO BE INCLUDED IN CONTRACTS WITH SERVICE PROVIDERS INCLUDING BUT NOT LIMITED TO ENGINEERS, DOCTORS, AND LAWYERS). Contractor shall maintain Professional Liability Insurance providing coverage for the Contractor's performance of work included within this Agreement, with a limit of liability of not less than $1,000,000 per occurrence and $2,000,000 annual aggregate. If Contractor's Professional Liability Insurance is written on a claims made basis rather than an occurrence basis, such insurance shall continue through the term of this Agreement and CONTRACTOR shall purchase at his/her sole expense either 1) an Extended Reporting Endorsement (also, known as Tail Coverage); or 2) Prior Dates Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that CONTRACTOR has Maintained continuous coverage with the same or original insurer. Coverage provided under items; 1), 2), or 3) will continue as long as the law allows.

E. General Insurance Provisions - All lines:

1) Any insurance carrier providing insurance coverage hereunder shall be admitted to the State of California and have an A M BEST rating of not less than A: VIII (A:8) unless such requirements are waived, in writing, by the County Risk Manager. If the County's Risk Manager waives a requirement for a particular insurer such waiver is only valid for that specific insurer and only for one policy term.

2) The CONTRACTOR must declare its insurance self-insured retention for each coverage required herein. If any such self-insured retention exceeds $500,000 per occurrence each such retention shall have the prior written consent of the County Risk Manager before the commencement of operations under this Agreement. Upon notification of self-insured retention unacceptable to the COUNTY, and at the election of the Country's Risk Manager, CONTRACTOR'S carriers shall either; 1) reduce or eliminate such self-insured retention as respects this Agreement with the COUNTY, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.

3) CONTRACTOR shall cause CONTRACTOR'S insurance carrier(s) to furnish the County of Riverside with either 1) a properly executed original Certificate(s) of Insurance and certified original copies of Endorsements effecting coverage as required herein, and 2) if requested to do so orally or in writing by the County Risk Manager, provide original Certified copies of policies including all Endorsements and all attachments thereto, showing such insurance is in full force and effect. Further, said Certificate(s) and policies of insurance shall contain the covenant of the insurance carrier(s) that thirty (30) days written notice shall be given to the County of Riverside prior to any material modification, cancellation, expiration or reduction in coverage of such insurance. In the event of a material modification, cancellation, expiration, or reduction in coverage, this Agreement shall terminate forthwith, unless the County of Riverside receives, prior to such effective date, another properly executed original Certificate of Insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto evidencing coverage's set forth herein and the insurance required herein is in full force and effect. CONTRACTOR shall not commence operations until the COUNTY has been furnished original Certificate (s) of Insurance and certified original copies of endorsements and if requested, certified original policies of insurance including all endorsements and any and all other attachments as required in this Section. An individual authorized by the insurance carrier shall sign the original endorsements for each policy and the Certificate of Insurance.

4) It is understood and agreed to by the parties hereto that the CONTRACTOR'S insurance shall be construed as primary insurance, and the COUNTY'S insurance and/or deductibles and/or self-insured retention's or self-insured programs shall not be construed as contributory.

5) If, during the term of this Agreement or any extension thereof, there is a material change in the scope of services; or, there is a material change in the equipment to be used in the performance of the scope of work; or, the term of this Agreement, including any extensions thereof, exceeds five (5) years; the COUNTY reserves the right to adjust the types of insurance and the monetary limits of liability required under this Agreement, if in the County Risk Manager's reasonable judgment, the amount or type of insurance carried by the CONTRACTOR has become inadequate.

6) CONTRACTOR shall pass down the insurance obligations contained herein to all tiers of subcontractors working under this Agreement.

7) The insurance requirements contained in this Agreement may be met with a program(s) of self-insurance acceptable to the COUNTY.

8) CONTRACTOR agrees to notify COUNTY of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of this Agreement.

23. General

23.1 CONTRACTOR shall not delegate or assign any interest in this Agreement, whether by operation of law or otherwise, without the prior written consent of COUNTY. Any attempt to delegate or assign any interest herein shall be deemed void and of no force or effect.

23.2 Any waiver by COUNTY of any breach of any one or more of the terms of this Agreement shall not be construed to be a waiver of any subsequent or other breach of the same or of any other term of this Agreement. Failure on the part of COUNTY to require exact, full, and complete compliance with any terms of this Agreement shall not be construed as in any manner changing the terms or preventing COUNTY from enforcement of the terms of this Agreement.

23.3 In the event the CONTRACTOR receives payment under this Agreement, which is later disallowed by COUNTY for nonconformance with the terms of the Agreement, the CONTRACTOR shall promptly refund the disallowed amount to the COUNTY on request; or at its option the COUNTY may offset the amount disallowed from any payment due to the CONTRACTOR.

23.4 CONTRACTOR shall not provide partial delivery or shipment of services or products unless specifically stated in the Agreement.

23.5 CONTRACTOR shall not provide any services or products subject to any chattel mortgage or under a conditional sales contract or other agreement by which an interest is retained by a third party. The CONTRACTOR warrants that it has good title to all materials or products used by CONTRACTOR or provided to COUNTY pursuant to this Agreement, free from all liens, claims, or encumbrances.

23.6 Nothing in this Agreement shall prohibit the COUNTY from acquiring the same type or equivalent equipment, products, materials or services from other sources, when deemed by the COUNTY to be in its best interest. The COUNTY reserves the right to purchase more or less than the quantities specified in this Agreement.

23.7 The COUNTY agrees to cooperate with the CONTRACTOR in the CONTRACTOR's performance under this Agreement, including, if stated in the Agreement, providing the CONTRACTOR with reasonable facilities and timely access to COUNTY data, information, and personnel.

23.8 CONTRACTOR shall comply with all applicable Federal, State and local laws and regulations. CONTRACTOR will comply with all applicable COUNTY policies and procedures. In the event that there is a conflict between the various laws or regulations that may apply, the CONTRACTOR shall comply with the more restrictive law or regulation.

23.9 CONTRACTOR shall comply with all air pollution control, water pollution, safety and health ordinances, statutes, or regulations, which apply to performance under this Agreement.

23.10 CONTRACTOR shall comply with all requirements of the Occupational Safety and Health Administration (OSHA) standards and codes as set forth by the U.S. Department of Labor and the State of California (Cal/OSHA).

23.11 This Agreement shall be governed by the laws of the State of California. Any legal action related to the performance or interpretation of this Agreement shall be filed only in the Superior Court of the State of California located in Riverside, California, and the parties waive any provision of law providing for a change of venue to another location. In the event any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

23.12 This Agreement, including any attachments or exhibits, constitutes the entire Agreement of the parties with respect to its subject matter and supersedes all prior and contemporaneous representations, proposals, discussions and communications, whether oral or in writing. This Agreement may be changed or modified only by a written amendment signed by authorized representatives of both parties.

COUNTY:

(INSERT DEPARTMENT NAME)
(INSERT ADDRESS)

Signature:_____

Print Name: (YOUR NAME HERE)_____

Title: (INSERT TITLE)_____

CONTRACTOR:

(INSERT CONTRACTOR NAME)
(INSERT ADDRESS)

Signature:_____

Print Name: (CONTRACTOR NAME HERE)

Title: (INSERT TITLE)_____

ATTACHMENT A
BIDDER PROPOSAL RESPONSE

REQUEST FOR PROPOSAL # FPARC-327

TRACTOR DRAWN AERIAL FIRE APPARATUS

By:
John Miller, CPPO
Procurement Contract Specialist
Riverside County Purchasing & Fleet Services
2980 Washington Street
Riverside, CA 92504-4647
(951) 634-3090
Email: john.miller@fire.ca.gov
NIGP Code(s): 07230, 07103

This RFP and any ensuing Addendums are available at the following links:
www.purchasing.co.riverside.ca.us and **www.publicpurchase.com**

NOTE: BIDDERS ARE RESPONSIBLE TO READ ALL INFORMATION THAT IS STATED IN THIS REQUEST FOR PROPOSAL AND PROVIDE A RESPONSE AS REQUIRED

Appendix A

1.0 BACKGROUND

The County of Riverside Purchasing and Fleet Services Department on behalf of Riverside County Fire Department is seeking proposals from qualified firms to provide Tractor Drawn Aerial Fire Apparatus per the terms conditions and specifications stated herein.

The Riverside County Fire Department provides full service all risk emergency response coverage for the County of Riverside, California. The County of Riverside covers approximately 7,303 square miles and has a population of approximately 2.3 million people. The Riverside County Fire Department provides emergency response coverage to 21 of the County's 28 incorporated Cities and to the unincorporated County areas. The Riverside County Fire Department currently operates out of 97 Fire Stations staffed by a combination of career and reserve employees.

The Riverside County Fire Department annually responds to approximately 130,000 calls for emergency service. Some of the Riverside County Fire Department Fire Stations will exceed 5,000 calls for service per year. This high call volume combined with the extended driving distances in some of the developing and rural areas of the County, require the Riverside County Fire Department's fire apparatus to be mechanically sound and constructed in a manner that is intended for severe duty. Currently it is common to find fire apparatus in the Riverside County Fire Department fleet that will exceed 100,000 miles in a 10-year period. The intended life span of the fire apparatus within the Riverside County Fire Department is approximately 20 years.

The Riverside County Fire Department operates Fire Stations in all areas of Riverside County. This requires Fire Stations to be located in a diverse array of locations from desert areas that are below sea level near the Salton Sea to mountainous areas above 6,200 feet in elevation.

Weather commonly experienced within Riverside County will range from average winter low temperatures in the 30s to average summertime high temperatures in the 100s. But due to the diversity of Riverside County and the diverse areas where the Riverside County Fire Department Fire Stations are located, desert summertime temperatures can (and do routinely) top 120° F and mountainous wintertime temperatures can (and do routinely) fall below 0° F and snow is an annual occurrence.

The environment that the Riverside County Fire Department operates in is a rapidly developing urban, suburban and rural area. This mix of operating environments includes everything from multi-story high rise buildings to suburban housing communities to rural environments where housing units are spread out. This requires the Riverside County Fire Department to maintain a fire apparatus fleet that can adapt to all operating environments. Road conditions range from multi-lane highways to two lane country roads to unimproved dirt roads.

The Riverside County Fire Department also places a high degree of priority on the ability to be able to properly maintain the mechanical condition of its fire apparatus fleet. The Riverside County Fire Department sets a priority to be able to maintain a high percentage of its apparatus in a state of readiness and to minimize mechanical down time. The Riverside County Fire Department continues to set a goal of minimizing the out of service time of its fire apparatus fleet and requires an apparatus design that incorporates design features that will allow the Fleet Services Section the ability to meet these in-service goals.

2.0 PURPOSE

The County is soliciting proposals from qualified firms/apparatus manufacturers to build and deliver custom-built Tractor Drawn Aerial Fire Apparatus as specified in this Request for Proposal (RFP). These specifications are intended to describe, among other things, the vehicle chassis, cab, build-up, type, size, and quality of apparatus. The vehicle must meet all California emission standards and have all legal safety devices.

Tab A Proposal Checklist

Instructions:

- This section must be filled in and each item checked off to ensure all items requested by the County in this RFP have been submitted.
- Follow the instructions in each section of this RFP.
- Present all requested items in the index tabs ordered A through I as shown
- Label each item presented and include additional items on your Table of Contents
- All proposals must include a detailed description of the apparatus to be provided
- Bidders that do not follow the bid instructions found in the Terms and Conditions document "Section 6.0 General Proposal Submittal" may be found to be "non-responsive" and disqualified from the bid process

Name of Company: _____

Service to provide: (title) _____

Proposal Submission Checklist

General Bidder Information

Please provide one copy of the following items in your proposal. Indicate the page number where the item is located.

Page Number

☐ Tab A – Proposal Checklist *(this page)* 3

☐ Tab B – Proposal Cover Page *(signed by Authorized Signatory)* 5

☐ Tab C – Company Profile/ Experience 6

☐ Tab D – Acknowledgements 7

☐ Tab E – Specifications (Exhibits 1 – 5) 8

☐ Tab F – References 9

☐ Tab G – Bidder Attachment 11
Any response that Bidders are finding difficulty pasting into the "Bidders Response" boxes in any section of the RFP, bidders shall paste in Tab G.

Tab H and I Sections shall only be included in the Original Proposal submittal.

☐ Tab H – Price Proposal (Include in Original Proposal Only) 12

☐ Tab I – Financial Statement (Include in Original Proposal Only) 14

Tab B Proposal Cover Page

This Proposal Cover Page must be signed by an authorized representative. Signature by an authorized representative of the company on the proposal cover page shall constitute a warranty, the falsity of which shall entitle the County of Riverside to pursue any remedy authorized by law, which shall include the right, at the option of the County of Riverside, of declaring any contract made as a result thereof, to be void.

BIDDER TO COMPLETE ALL APPLICABLE AREAS

Bidders are required to register (If not already registered) on the County of Riverside Purchasing website:
WWW.PURCHASING.CO.RIVERSIDE.CA.US

The County of Riverside Purchasing Department on behalf of Riverside County Fire is soliciting proposals from qualified firms to provide:

Tractor Drawn Aerial Fire Apparatus

Pre-Proposal Conference:

Date: September 5th, 2018

Time: 9:00am

Location:
Riverside County Fire Department
88 East Rider Street
Perris, CA 92571

Confirmation:
Firms interested in attending the Pre-Proposal Conference are requested to confirm their attendance via e-mail to john.miller@fire.ca.gov by 1:00 PM on Wednesday, August 29th, 2018.

PROPOSALS SHALL BE DELIVERED TO:
County of Riverside – Purchasing and Fleet Services
Attn: RFP # FPARC-327
2980 Washington Street
Riverside, CA 92504

"Execution hereof is certification that the undersigned has read and understands the terms and conditions hereof, and that the undersigned's principal is fully bound and committed."

Company Name:		
Mailing Address:		
City:	State:	Zip:
Remit to Address:		
City:	State:	Zip:
Phone # ( )		FAX # ( )
Contractor Website:		
Name:	Title:	
Signature:		Date:
Email:		

Please Check ☐ Veteran ☐ Local Preference

Tab C Company Profile/ Experience

This section of the proposal is designed to establish the bidder as an entity with the ability and experience to deliver apparatus equipment as specified in the RFP. The Company Profile should be concise and clear, and include descriptive information regarding service delivery. The following information must be provided as follows:

1. Business name and legal business status (i.e. partnership, corporation, etc.)

   BIDDER'S RESPONSE:

2. Company overview of services or activities performed, including:
   a. Company hierarchy (President, Vice President, Company Officers, etc.) and an organizational chart. The organizational chart shall clearly identify all staff members that will provide services under this contract.
   b. The number of years in business under the present business name, as well as prior business names, and the number of years of experience providing the proposed, equivalent or related services
   c. Company size - number of staff
   d. Location of the office from which the work under this contract will be provided and the staff allocation at that office

   BIDDER'S RESPONSE:

   a)

   b)

   c)

   d)

3. Please indicate whether the bidder holds controlling or interests in any other organization, or is owned or controlled by any other person or organization, if none that must be stated. Governmental agencies are exempt from this requirement.

   BIDDER'S RESPONSE:

4. Financial interests in any other business. Individuals who are personally performing the contracted services and governmental agencies are exempt from this requirement.

   BIDDER'S RESPONSE:

5. Names of persons with whom the Bidder has been associated in business as partners or business associates in the last five years. Governmental agencies are exempt from this requirement.

   BIDDER'S RESPONSE:

6. An explanation of any litigation involving the Bidder or any principal officers thereof in connection with any contract.

   BIDDER'S RESPONSE:

Tab D Acknowledgements

1. Clarifications, Exceptions, or Deviations to Terms and Conditions Document, Exhibit A – Sample Agreement

Bidder shall describe any exception or deviation from the requirements of the sample agreement in Exhibit A of the Terms and Conditions Document. Each clarification, exceptions, or deviation must be clearly identified. If your firm has no clarification, exceptions, or deviation, a statement to that effect shall be included in this section.

The following contractual terms are **non-negotiable**.

- Indemnification
- All insurance terms prior to the start of the agreement
- Termination
- Ownership/Use of Contract Materials and Products
- Disputes
- Governing Law
- Confidentiality

Do you have any other exceptions/deviations? If so, please provide an explanation:
BIDDER'S RESPONSE:

2. Evidence of Insurability/Business Licenses

All bidder(s) shall submit evidence of all required insurance. An Accord cover page will suffice and if awarded the contract the Bidder has ten (10) calendar days to produce the required insurances including a certified endorsement naming the County as additionally insured. The bidder shall certify to the possession of any and all current required licenses or certifications. Do not purchase additional insurance until this bid has been awarded. Provide a copy of current business license or other applicable licenses.

CERTIFICATIONS

I, _____, a duly authorized agent of _____,
Printed Name of Agent/Officer — Name of Organization
hereby certify that _____ by submission of this proposal in response to the
Name of Organization
Professional Services RFP, agree upon contract award to carry out the requirements specified and obligations set forth therein.

Signature _____ Date _____

Title of Agent/Officer _____

Tab E Specifications

NOTICE: TECHNICAL SPECIFICATIONS – The minimum requirements acceptable are listed in Exhibits I – V of this RFP. Bidder shall confirm by checking Yes or No in the space provided in each section that the apparatus being offered meets or does not meet the RFP specifications. Any exceptions to the specifications must be clearly identified with a detailed narrative of the exception being made.

FAILURE TO COMPLETE THE BIDDER RESONSE FOR EACH SECTION MAY RESULT IN YOUR PROPOSAL BEING FOUND NON-RESPONSIVE.

SEE EXHIBITS 1 THROUGH 5

Exhibit 1	Section I General……	19 pages
Exhibit 2	Section II Cab & Chassis……..	53 pages
Exhibit 3	Section III Pump……	46 pages
Exhibit 4	Section IV Apparatus Body…….	23 pages
Exhibit 5	Section V Electrical……..	2 pages

Tab F References

References

Bidder must provide a minimum of three (3) recent and relevant past performance references (within the last five (5) years). Past performance references should be for projects similar in scope/specification to this RFP. References cannot include Riverside County Elected Officials, County Department Directors, or other County staff. Bidder is responsible to verify that all reference information is correct.

Reference 1	
Company name:	
Address:	
Contact person:	
Email address:	
Telephone address:	
Project name:	
Dates worked performed:	
Summary of scope of services:	
Project cost:	

Reference 2	
Company name:	
Address:	
Contact person:	
Email address:	
Telephone address:	
Project name:	
Dates worked performed:	
Summary of scope of services:	
Project cost:	

Reference 3	
Company name:	
Address:	
Contact person:	
Email address:	
Telephone address:	

Project name:	
Dates worked performed:	
Summary of scope of services:	
Project cost:	

1. Provide a list detailing contracts that your company has been awarded during the last five (5) years, showing year, type of apparatus, dollar amounts, contracting agency, contact name, and phone number.

BIDDER'S RESPONSE:

2. Provide details of any failure or refusal to complete a contract. If none, that must be stated.

BIDDER'S RESPONSE:

Tab G Bidder Attachment

Any response that Bidders are finding difficulty pasting into the "Bidders Response" boxes in any section of the RFP, bidders shall paste in Tab G. When pasting attachments to Tab G, label the attachments "Attachment 1", Attachment 2" and so forth. Enter the corresponding "Attachment Number" into the Bidder's Response box below:

List all attachments included in this Section. Please use additional pages to list attachments if necessary.

Attachment Number	Document Title	Page Number
Attachment 1	_____	_____
Attachment 2	_____	_____
Attachment 3	_____	_____
Attachment 4	_____	_____
Attachment 5	_____	_____
Attachment 6	_____	_____
Attachment 7	_____	_____
Attachment 8	_____	_____
Attachment 9	_____	_____
Attachment 10	_____	_____
Attachment 11	_____	_____
Attachment 12	_____	_____
Attachment 13	_____	_____
Attachment 14	_____	_____
Attachment 15	_____	_____
Attachment 16	_____	_____
Attachment 17	_____	_____
Attachment 18	_____	_____
Attachment 19	_____	_____
Attachment 20	_____	_____

Tab H Price Proposal

Please provide One (1) copy of Tab H – Price Proposal in the "original" binder only, clearly marked "Price Proposal".

In this section, please complete and include the Price Proposal Sheet. **Price Proposal's shall be submitted in a sealed envelope and include in the "Original" proposal binder only (Please do not include or reference pricing in the copies).** Price Proposals will be opened after the evaluation of the proposals has been completed by the Evaluation Committee. The County reserves the right to negotiate final fees with the selected Contractor. Proposals must fully describe all costs to be charged to the County. As stated in the Price Proposal, bidders must provide fully inclusive blended rates, which are inclusive all of the bidder's project-related or supported expenses, including travel expenses. Expenses not included in the Line Item Budget will not be reimbursed. Bidders may also include any other documents as information to further explain their proposed costs.

1. The county anticipates awarding a five (5) year contract that will include a one-year (1) base period and four (4) one-year options, exercisable at the County's sole discretion with no obligation by the County to purchase any specified amount. Adjustments to the apparatus pricing will only be allowed at the conclusion of each twelve (12) month period (base or option). The updated pricing will then remain fixed for the duration of the twelve (12) month option term. Adjustments will be based on the BLS Producer Price Index Commodity Code 1413-027 current published report. The escalation in this index will be used to adjust the base order price of the apparatus.

Comply: YES_____NO_____

BIDDER'S RESPONSE:

2. The County of Riverside reserves the right to order apparatus as specified in this solicitation over the five (5) year period of performance beginning upon the date of contract award. The price of such apparatus shall be the contracted apparatus unit price plus any adjustments in PPI for option years: two (2), three (3), four (4), and five (5). The price of any apparatus ordered by the County after the first twelve (12) month period shall be the Base Order Price plus any escalation which shall be calculated based on the following formula utilizing the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index ("PPI") Category 1413-027, "buses and firefighting vehicles, complete, produced on purchased chassis".

   FORMULA EXAMPLE:

   Index Point Change

PPI Index: Future PPI (start of option year):	141.1
Less PPI Index: Base PPI (start of contract):	137.6
Equals Index Point Change:	3.5

   Index Percent Change

Index Point Change	3.5
Divided by PPI Index: Base PPI:	137.6
Equals	.0254
Results Multiplied by 100	.0254 x 100
Equals Percent Change	2.54%

Base Order Price	$1,000.00
Plus Percent Change (2.54% x $1,000)	$25.40
Revised Price for Option Year	$1,025.40

The baseline index to be used for future option year price adjustments will be the most current PPI published at the time of the pre-construction meeting.

Comply: YES____ NO____

BIDDER'S RESPONSE:

3. Line-Item pricing shall be all-inclusive and include all costs including delivery and travel expenses per Tab E – Exhibit 1, Section 1.16 of RFP # FPARC-327 :. The Price Proposal shall reflect firm-fixed-pricing for a full one-year (12-month) period from date of contract award (estimated award date is December 2018).

Line #	Description	Unit Price
1	TDA Apparatus per the specifications of RFP # FPARC-327. Total delivered fixed-price shall include all costs and fees, including travel expenses per Tab E – Exhibit 1, Section 1.16	
2	(**OPTION – Pre-Construction Travel Cost**) Total all-inclusive cost for travel per Tab E - Section 1.16.3 should the County choose to bring an additional representative.	
3	(**OPTION – Cab Chassis Inspection Travel Cost**) Total all-inclusive individual cost for travel per Tab E - Section 1.16.4 should the County choose to bring an additional representative.	
4	(**OPTION – Pre-Paint Inspection Travel Cost**) Total all-inclusive individual cost for travel per Tab E - Section 1.16.5 should the County choose to bring an additional representative.	
5	**(OPTION – Final Inspection**) Total all-inclusive individual cost for travel per Tab E - Section 1.16.6 should the County choose to bring an additional representative.	
6	Replacements Parts per Tab E – Exhibit 1, Section 1.25	Please list as separate attachment

CERTIFICATIONS

I, _____, a duly authorized agent of _____,
Printed Name of Agent/Officer — Name of Organization

hereby certify that _____ by submission of this proposal in response to the
Name of Organization

Professional Services RFP, agree upon contract award to carry out the requirements specified and obligations set forth therein.

Signature _____ Date _____

Title of Agent/Officer _____

Tab I Financial Statement

Financial statements should **only** be included in the binder marked "Original".

Please place financials in a separate envelope mark "Financial Statement - Confidential". The financial documents shall be submitted in the "Original" binder only and not in the proposal copies. The County cannot guarantee that the financials submitted will be kept confidential.

The bidder must submit financial statements (balance sheet and income statement) for its business (and that of the apparatus manufacture, if applicable) that are dated no more than twelve (12) months prior to the date of the proposal submission and cover a period of at least one (1) year. These statements should clearly identify the financial status and condition of the bidder's entire business entity (and the apparatus manufacturer, if applicable).

Financials should provide sufficient detail to assure the County of Riverside that bidder (and apparatus manufacturer, if applicable) can support the cost for services/apparatus being offered and as a Contractor the firm will not seek early payment, expedited payments or checks delivered by any means other than regular mail through the County Auditor/Controller's Office.

BIDDER'S RESPONSE:

Attachment B

Local Business Qualification Affidavit

The County of Riverside Local Business Preference may be applied to this Request for Proposal/Quotation. If you qualify for this preference, please submit this form along with your response to this RFP/Q.

Definition of Local Business

A local business shall mean a business or firm with fixed offices located within the geographical boundaries of Riverside County, and authorized to perform business within the County. In doing so, credit all sales tax from sales generated within Riverside County to the County, and who provide product or perform contracted work using employees, of whom the majority are physically located in said local offices.

Local businesses" shall have a Riverside County business street address. Post office box numbers, residential addresses, or un-staffed sales offices shall not suffice to establish status as a "local business." To qualify as a "local business" the location must be open and staffed during normal business hours and the business must establish proof that it has been located and doing business in Riverside County for at least (6) six months preceding its certification to the County as a local business.

Additional supporting documentation that may be requested by the County to verify qualification includes:

1. **A copy of their current BOE 531-A and/or BOE 530-C form** (State, Local & District Sales, and Use Tax Return Form). This is what businesses submit to the State Board of Equalization when paying the sales tax to the State of California indicating the amount of the payment to be credited to each jurisdiction (i.e. Counties, Cities).
2. **A current business license** if required for the political jurisdiction the business is located.
3. **Proof of the current business address.** The local business needs to be operating from a functional office that is staffed with the company's employees, during normal business hours.

Business Name: _____

Physical Address:_____

Phone: _____ FAX: _____ E-Mail: _____

Length of time at this location: _____ Number of Company Employees at this address: _____
If less than 6 month, list previous
Riverside County location: _____

Business License # (where applicable): _____ Jurisdiction_____

Hours of Operation: _____

Primary function of this location (i.e., sales, distribution, production, corporate, etc.):

_____

_____

_____ _____
Signature of Company Official Date

_____
Print Name, Title

Submittal of false data will result in disqualification of local preference and/or doing business with the Riverside County

Attachment C

Veteran Business and Veteran Qualified Business Affidavit

The County of Riverside Veteran Business and Veteran Qualified Business Preference may be applied to this Request for Proposal/Quotation. If you qualify for this preference, please submit this form along with your response to this RFP/Q.

Definition of Veteran Business and Veteran Qualified Business

A **Veteran Business** shall mean a business that is at least fifty-one percent (51%) owned by one or more veterans.

A **Veteran Qualified Business** shall mean a business which can provide proof of their workforce containing no less than ten percent (10%) veterans.

Veterans as used in this policy means a person who has served or is currently serving in the U. S. armed services, reserves or active, and is serving honorably or has been honorably discharged.

Additional supporting documentation that may be requested by the County to verify qualification includes:

Please check the category you are applying for:

☐ **Veteran Business:**

Company must be registered with Vet Biz at www.vetbiz.gov/cve_completed_s.jpg: This site provides verification information about Service-Disabled Veteran-Owned Small Businesses (SDVOSBs) and Veteran-Owned Small Businesses (VOSBs). Companies who want to participate in the County's Veterans Preference Program must be listed in this database in order to be eligible for veteran preferences.
Company must submit DUNS # for website verification.

☐ **Veteran Qualified Business:**

Company must submit payroll records that demonstrate that 10% of your workforce is comprised of veterans. DD214 Forms must be submitted for all employees claiming veteran status.

Business Name: _____

Physical Address: _____

Phone: _____ FAX: _____ E-Mail: _____

Total Number of Company Employees (where applicable): _____ Total Number of Veteran Employees: _____
DUNS # (where applicable): _____

Hours of Operation: _____

_____ _____
Signature of Company Official Date

Submittal of false data will result in disqualification of Veteran Preference and/or doing business with Riverside County.

Form # 116-261 Rev 10/14

TAB E –EXHIBIT 1

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SECTION I – GENERAL

1.1 Proposal Submission

These specifications are intended to describe, among other things, the vehicle chassis, cab, build- up, type, size, and quality of apparatus. Any clarifications or exceptions to these specifications must be clearly stated in the bidder's response. Exceptions may be grounds for automatic and immediate rejection of the bid.

The bidder shall utilize this document in its proposal response. The bidder shall indicate if they comply with each paragraph by checking "Y" for yes (complies) or "N" for no (does not comply). For example: If the bidder complies with the specifications for a given section, the bidder will check "Y" and in the space provided in the "Bidder Response" column state "no exceptions".

Comply with Section 1.1: YES_____NO_____

Bidder Response Section 1.1:

1.2 Proposals which fail to follow the RFP instructions may be rejected

1.2.1 Proposals shall reflect the requirements and specifications identified in this RFP.
1.2.2 Proposals shall reference the County's specifications using the County's numbering system.
1.2.3 The County reserves the right to reject any or all bids at no cost to the County.
1.2.4 Bidders may include additional information or documents they feel are relevant to their proposal. Bidders are cautioned; however, that this does not constitute an invitation to submit large amounts of extraneous materials. Appendices should be relevant and brief.

Comply with Section 1.2: YES_____NO_____

Bidder Response Section 1.2:

1.3 Proposal shall contain the following information

1.3.1 The total cost to the County for each apparatus, including all applicable taxes or costs associated with manufacture and delivery of the apparatus.
1.3.2 Delivery time frame for the first apparatus to be delivered after the contract is signed, and for all remaining apparatus thereafter.
1.3.3 Manufacturing location of the apparatus.

Comply with Section 1.3: YES_____NO_____

Bidder Response Section 1.3:

1.4 General

1.4.1 All specifications contained herein are considered minimum requirements for the manufacturer and delivery of the new apparatus.
1.4.2 The apparatus shall be of the latest type, symmetrically proportioned, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained.
1.4.3 Details of construction and materials not otherwise specified are left to the discretion of the bidder. The bidder shall be solely responsible for the design and construction of all features.
1.4.4 The bidder shall provide principal dimensions and weight distribution of the fully loaded, completed vehicle.
1.4.5 The apparatus shall meet the requirements for automotive fire apparatus according to the current edition of the NFPA 1901 Standard'
1.4.6 If used in these specifications, the term "or equal" shall define the degree of determined quality level. It shall be the sole responsibility of the County to judge whether a proposed "equal" submitted

by the bidder meets the minimum established quality level. Any proposed "equal" (as allowed in the specifications) must be described by the bidder in its bid.

1.4.7 Bids shall be from qualified and experienced manufacturers of motorized fire apparatus.

1.4.8 Each bidder shall furnish evidence satisfactory to the County of their ability to construct the apparatus as specified; and shall state the location of the factory where the apparatus is to be built. Each bidder shall submit with their bid a list stating the locations of five (5) or more Tractor Drawn Aerials, that have been constructed and completely assembled by their firm within the last two (2) years. These Aerials must be currently in service for a full time paid fire department for at least one year. The list shall include the name and number of a contact person where these Aerials are located. NO EXCEPTIONS (Due to Riverside County's requirement to insure product quality and workmanship)

1.4.9 For each specified component, the bidder shall state in its bid the size, type, model, and make of each component.

1.4.10 The bidder shall provide detailed information on the materials to be used to construct all parts of the apparatus. A bidder's use of terms such as "intent of" are considered vague and unacceptable responses and will disqualify the bid submittal.

1.4.11 The bidder shall submit with their proposal detailed engineered construction drawings of the apparatus they are offering.

1.4.12 The apparatus shall conform to the requirements of the current NFPA l90l Standard for Automotive Fire Apparatus, unless otherwise stated in these specifications. The apparatus shall comply in every respect with the California Vehicle Code, Federal Motor Vehicle Safety Standards, California Code of Regulations (Title 8, Title 13, Title 15), California Health and Safety Code, California Air Resources Board Regulations, OEM Body Builders Standards and Guidelines and Occupational Safety and Health Act.

1.4.13 A plate identifying the manufacturer, gross vehicle weight, date of manufacture and all other information as specified in the National Traffic and Motor Vehicle Safety Act, Section 114, and Federal Code of Regulations, Title 49, shall be attached to the vehicle frame or body in an easily accessible location. Should a conflict arise between an NFPA Standard and any portion of these specifications, the NFPA Standard will prevail. Any test equipment required or expense incurred for the Certification Tests shall be borne by the Contractor supplying this equipment.

1.4.14 The bidder shall disclose in its proposal any pending or past (within the past five years) litigation regarding the bidder's failure or alleged failure to deliver or comply with other fire apparatus contracts.

1.4.15 All materials and components used in the construction of the apparatus shall be new. Used or reconditioned material or components are not acceptable.

1.4.16 Any identifying numbers on any components shall be the original equipment manufacturer's numbers. The numbers shall be easily read and shall not be painted over.

1.4.17 The bidder shall employ industry acceptable engineering criteria in the design of the apparatus; and be able to certify compliance with all applicable standards in force at the time of manufacture. Vehicle safety shall be important design criteria.

Comply with Section 1.4: YES_____NO_____

Bidder Response Section 1.4:

1.5 Progress Reports

The bidder shall post weekly updates on the progression of the apparatus being constructed. Included will be a brief written summary of the current construction process occurring. A minimum of six (6) digital photos showing all aspects of the apparatus (ie front, left side, right side, rear, top side, pump/plumbing layout, etc.) will be included. Riverside County Fire Department will be able to view digital images of their apparatus as its being manufactured. The digital images shall be posted once a week, starting when the construction of the cab/chassis process is initiated and will continue throughout the entire construction of the apparatus. This shall include, but not limited to, production of the cab/chassis, and construction of the fire body. During the entire process additional photos may be requested at any time to ensure quality control, mitigate additional travel, and ensure compliance to Riverside

County's specification. These updates and photos will be distributed as progress reports to various entities (City Council Members, Board of Supervisors, Fire Chiefs, etc.) who have a vested interest in the production of the apparatus.

Comply with Section 1.5: YES_____NO_____

Bidder Response Section 1.5:

1.6 Construction Drawing

The evaluation of proposals shall also be based on design, engineering reliability, and completeness of drawings. No Bidder's proposal shall be considered unless complete engineering drawings to these specifications are submitted with their proposal submittal. Failure to submit factory prepared blueprints with the bid shall result in automatic rejection. Submissions of "bid drawings" are in addition to "production drawings "which must be submitted for Riverside County Fire Department approval prior to construction. Production drawings shall be submitted after the conclusion of the pre-construction meeting. Bid drawings shall be submitted with the proposal and shall allow the Riverside County Fire Department the ability to fully evaluate required product.

The drawings shall be produced on computer aided design (CAD) equipment to assure critical tolerance and detail only available with CAD equipment. The drawings shall be on "B" size paper, 17" x 11" in size, and views must be 1/4" = 1' - 0" scale. The drawings shall be completed only by the body manufacturer, and must be exactly to Riverside County Fire Department specifications. Submission of "similar to" drawings or "statements referring to later submission of drawings after award of contract" shall be automatically rejected. Since the proposal submittals will require extensive evaluation by Riverside County Fire Department, all Bidders must submit exactly the same engineering drawings at the same scale, on the same size paper. For easy comparison of drawings, they must be on a 17" x 11" sheet as follows:

1.6.1 All bid drawings will be stamped BID DRAWING
1.6.2 All items shown on the drawing will be pre-designed with regards to layout and functionality prior to the completion of the BID DRAWING.
1.6.3 Two (2) 17" x 11" color drawings will be supplied with the proposal. Black and white or blue line drawings will not be accepted.
1.6.4 There shall be five (5) views of the truck with the doors closed (Top, Left, Right, Front, Rear), five (5) views of the apparatus with the doors open (Top, Left, Right, Rear, Front) and five (5) views of any walk-in area (Top, Left, Right, Rear, Front).
1.6.5 All compartment door openings and usable space shall be clearly shown in inches.
1.6.6 The apparatus overall length, wheelbase and cab-to-axle dimensions shall be clearly shown.
1.6.7 The apparatus width, width at mirrors, width with the cab doors open, width with compartment doors open and width with position shall be clearly shown.
1.6.8 The apparatus height and height with the cab tilted.
1.6.9 The angles of approach and departure and break-over angle shall be shown in the maximum loaded condition to the nearest degree.
1.6.10 Ground clearance shall be shown in the maximum loaded condition to the nearest inch.
1.6.11 All lighting packages will be clearly shown on the drawing and verified accurate per the most current NFPA standards (when applicable).
1.6.12 The exterior view shall show all scene lights, marker lights, speakers, horns, exhaust, tow points, exterior outlets, windows, tow hitches, exterior ladders and any other item important to the function of the vehicle.
1.6.13 The open view shall show all trays, shelves, air system components, hydraulic, components, tool boards, storage modules and any other items important to function of the vehicle.
1.6.14 The interior view for all walk-in areas shall show all seating positions, windows, tech equipment, radio locations, MDC location, Vista screens locations, dash layout, and any other item important to the function of the vehicle.

1.6.15 There shall be a drawing of the aerial vertical reach, horizontal reach, tip load, angle of elevation and overall width with the stabilizers deployed.

Comply with Section 1.6: YES_____NO_____

Bidder Response Section 1.6:

1.7 Liquidated Damages

1.7.1 The bidder shall state the number of calendar days required for delivery of the completed apparatus after receipt of order.

1.7.2 Delays in delivery will severely impact the operation of the Fire Department. Should proper delivery not be completed by the promised date, liquidated damages will be assessed by the County against the amount owed to the bidder for the apparatus. An amount of one hundred and fifty dollars ($150.00) per calendar day for each day of delay for each unit is established as the liquidated damage to the County (and not as a penalty or forfeiture). After a delay in delivery of ninety (90) days, the Fire Department may cancel the order.

1.7.3 Liquidated damages shall also apply in cases where delivery of non- acceptable apparatus is made.

Comply with Section 1.7: YES_____NO_____

Bidder Response Section 1.7:

1.8 Materials Required at Delivery of Apparatus

The bidder shall provide all of the materials and documentation as stated in these specifications. The bidder shall provide two (2) printed copies and two (2) computer thumb drives for each apparatus. The documentation shall be in PDF format. The apparatus manual shall contain the following items which shall be required at the time of delivery of the apparatus:

1.8.1 Operation manuals for all components and accessories.
1.8.2 Service manuals for engine, transmission, and other major components.
1.8.3 Bill of materials or factory work order showing part numbers of all components on vehicle.
1.8.4 Engineering drawings as built.
1.8.5 Chassis drawing as built.
1.8.6 Color coded chassis air brake system drawing as built.
1.8.7 Color coded electrical system schematic (12-Volt) as built, large and easy to read.
1.8.8 Color coded chart sheet showing all points of lubrication and type/amount of lubrication.
1.8.9 Color coded aerial diagram to include hydraulic and electrical schematics.
1.8.10 Color coded engine charts.
1.8.11 Color coded transmission charts.
1.8.12 Color coded regeneration operation charts.
1.8.13 UL inspection and test records.
1.8.14 FMVSS compliance certification label.
1.8.15 Weight certificate. The weight certificate shall show the total apparatus weight, the front axle weight, the rear axle weight, the right front tire weight, the left front tire weight, the right rear tire weight, and the left rear tire weight.
1.8.16 Documents required for transferring ownership to County.
1.8.17 Aerial testing and certification per NFPA standards.
1.8.18 Performance test reports.
1.8.19 Operating instructions for the aerial and components.
1.8.20 Operating instructions for the chassis and any major components.
1.8.21 Precautions related to multiple configurations of aerial devices, if applicable.
1.8.22 Instructions regarding the frequency and procedure for recommended maintenance.

1.8.23 Parts list for replacement.
1.8.24 Operations and maintenance documents for components and equipment of the apparatus.
1.8.25 All required equipment, manuals, charts, and books shall accompany the apparatus at time of delivery. Failure to deliver these items shall be cause for non-acceptance of the apparatus.
1.8.26 All documents must be exact representations of the apparatus delivered and General drawings are not acceptable.
1.8.27 NFPA REQUIRED DOCUMENTATION FORMAT – Computer thumb drive. The vehicle construction details and the operations and service documentation as required per NFPA 1901 latest edition shall be provided on a computer thumb drive in PDF format. These manuals shall be divided into sections for ease of reference. There shall be two (2) copies of the computer thumb drive in PDF format provided with the completed vehicle.
1.8.28 A letter from the bidder attesting to the fact that the finished, fully loaded apparatus will meet all federal motor vehicle and California Vehicle Code requirements; that the axles, tires, brakes and frame are all designed to support and carry the anticipated load safely under harsh driving conditions; and that the combination of wheelbase, center of gravity, weight distribution and other factors affecting safe vehicle operation are within acceptable limits of vehicle design practice and all applicable law. The president of the bidder's firm and their chief engineer shall jointly sign this letter.
1.8.29 The bidder shall furnish a copy of the record of the current certified brake horsepower curve and torque curve.
1.8.30 The bidder shall provide a Cummins Quick Check current year standard kit diagnostic readers and computers, with appropriate adapters and hardware. Two (2) kits will be delivered with the first apparatus completed. Subsequently, one (1) Cummins Quick Check kit shall be delivered with each apparatus ordered beginning with the second, if multiple orders are placed. The kit shall be updated with the latest software for the apparatus being delivered.
1.8.31 Software updates shall be provided for each Cummins Quick Check, for the expected service life of the apparatus as specified in Appendix "A", Section 1.0 at no additional cost.

Comply with Section 1.8: YES_____NO_____

Bidder Response Section 1.8:

1.9 <u>Quality of Workmanship</u>

1.9.1 The bidder shall employ the latest approved automotive design practices in the design of the apparatus. Nothing in these specifications will relieve the bidder from the responsibility to provide a safe and functional vehicle. Workmanship shall be of the highest caliber in its respective field (first class)
1.9.2 The bidder shall comply with the following provisions:
1.9.2.1 There shall be easy access to components which require routine periodic maintenance, ease and safety of operations, symmetry of design and finish quality of welding, coating, plating and fabrication work. Where threaded fasteners are used, sheet metal screws are not acceptable. Threaded fasteners shall be secured utilizing lock tight or equal to prevent screws from coming loose.
1.9.2.2 Where blind attachment is necessary, expandable nut inserts or other blind attachment threaded devices shall be used.
1.9.2.3 Bolted construction consisting of machine screws with nuts and lock washers shall be employed. Tapped holes, stud-welded fasteners shall be used where necessary to permit items to be removed by one person where they cannot reach the opposite side of the fastener. All fasteners shall meet SAE J429 Standards.
1.9.2.4 Self-tapping machine screws may be used in the attachment of labels, trim plates and strips, provided attachment is made to steel. Blind attachment of nonferrous metals shall use alternative methods approved by the County.

1.9.3 In the event of a failure or breakdown during the warranty period and upon written notice from the Fire Department, action must be taken by the bidder to begin repairs or other correction within three (3) working days. The warranty vendor shall complete any and all warranty repairs within ten (10) working days after receiving apparatus. If repairs extended beyond the ten (10) working day period, vendor shall pay the Riverside County Fire Department in liquidated damages in the amount of $150.00 per day, or the equivalent in parts credit, for each additional day the apparatus repairs are delayed. The time period payment penalty may be waived with prior approval, by the Riverside County Fire Department.

1.9.4 Transportation of the apparatus to and from service facilities, including apparatus driver and towing as necessary, shall be the responsibility of the bidder. The apparatus will be delivered back to County within one (1) day of completion of work at no additional cost to the County.

1.9.5 If the bidder does not respond as required after three (3) working days, the County may immediately proceed to have the apparatus repaired by another source. The bidder shall be liable to the County for all costs associated with such warranty work.

1.9.6 The bidder shall furnish the necessary documentation on any and all new and/or replacement parts to enable the County to verify warranties with original equipment manufacturer.

1.9.7 Defective parts will be labeled and retained by the County until parts are replaced. The bidder shall take full responsibility for returning any defective parts to their supplier.

1.9.8 The bidder shall provide the name and phone number of one warranty contact person at the bidder's manufacturing facility. If warranty repairs are necessary, this person and a Fire Department representative shall determine how to handle the specific repair. Options shall include the following:

1.9.8.1 The bidder shall provide one point of contact for all warranty issues for the entire apparatus.

1.9.8.2 The warranty contact shall be available by phone, 24 hours per day, 7 days per week, 365 days per year (including holidays).

1.9.8.3 Send the apparatus to a repair facility that the bidder and the County agree upon. (Repair facility must be within a 30 mile radius of Riverside County Fire Department Headquarters in Perris, CA 92570)

1.9.8.4 The County does the repair work with factory furnished parts and is reimbursed for its labor and costs.

1.9.8.5 The bidder sends personnel to the apparatus location to do the repair work.

1.9.8.6 The bidder shall provide a list of two (2) of the closest, approved warranty facilities to Perris Headquarters.

1.9.8.7 The warranty facility shall have the ability to make warranty repairs both at their facility and in the field.

1.9.8.8 The warranty facility staff shall be State or EVT certified and ASE certified to perform repairs on the specific apparatus.

1.9.9 The bidder shall state and list those parts of the proposed apparatus that are exclusively manufactured and sold by their company, which are not available through regular manufacturing outlets. Bidder shall maintain a parts inventory that is appropriate with the replacement needs based on the Riverside County Fire Departments fleet size in stock. A positive guarantee shall accompany bids stating that the manufacturer will make available a complete stock of all captive parts or components.

Comply with Section 1.9: YES_____NO_____

Bidder Response Section 1.9:

1.10 <u>Warranty Length</u>

1.10.1 Components and apparatus shall be provided with a two (2) year, minimum, bumper to bumper warranty.

1.10.2 Compressor, five (5) years, unlimited mileage / hours.

1.10.3 Alternator, two (2) years, unlimited mileage (Alternator, Mounting Brackets).

1.10.4 Batteries three (3) years, unlimited mileage.

1.10.5 Belts, two (2) years, unlimited mileage
1.10.6 Body Paint Adhesion, five (5) years, unlimited mileage
1.10.7 Body ten (10) years, unlimited mileage
1.10.8 Cross Members: five (5) years, unlimited mileage / hours
(Coverage includes cross members)
(Gusset and Huck- Mounting Bolts)
(Attached to Gusset to Cross Members)
(Cross Member to Frail Rails)
1.10.9 Drivetrain including complete Transmission: five (5) years, unlimited mileage / hours
(Rear axle housing, differential housing and gears)
(Rear axle shafts, front axle beams and spindles)
(Steering gear and case, excluding delivery mileage)
1.10.10 Engine warranty: five (5) years, unlimited mileage / hours
(Comprehensive Components that fail under normal and severe duty service)
(Cylinder Block, Cylinder Heads, Crankshaft, Camshaft)
(Main Bearing Bolts, Flywheel Housing, Connecting Rod)
(Turbocharger, Intake and Exhaust Manifolds)
(Timing Gears and Housing, Oil Cooler Housing)
(Water Pump Housing, Air Inlet Housing, Engine Electronics)
(Fuel Pumps and Injectors and all internal parts)
(Warranty includes parts, labor, and repairs)
(Excluding delivery mileage, whichever is greater)
1.10.11 Engine Main Cooling System: five (5) years, unlimited mileage / hours
(Coverage Includes Radiator Core, Radiator Tanks)
(Cooling Fans, Fan Hub Assembly, Brackets, Braces)
1.10.12 Engine Charge Air Cooler and related Parts five (5) years, unlimited mileage / hours
1.10.13 Emergency Light Bar and Bulbs three (3) years, unlimited mileage / hour
(Components, LED Lights, All Bulbs, Power Supply)
(Electronic Siren, Speakers)
1.10.14 Frame Rails and Cross-Members: Lifetime Warranty
(Frame Rail Liners, Frame Rail Extensions)
(And Any Item(s) Factory Welded to Them)
1.10.15 Mirror: two (2) years, unlimited mileage
1.10.16 Paint (Paint Peeling, Cracking, blistering) seven (7) years, unlimited mileage
(Paint shall be covered 100% including UV Paint Fade)
1.10.17 Paint (Corrosion, Adhesion, Perforation) ten (10) years, unlimited mileage/hours
1.10.18 Radio: five (5) years, unlimited mileage / hours
1.10.19 Seats: two (2) years, unlimited mileage / hours
1.10.20 Starter: two (2) years, unlimited mileage / hours
(Starter Motor, Solenoid, Mounting Brackets)
1.10.21 Steering: five (5) years, unlimited mileage / hours
(Steering Pump, Steering Gear Box, Hoses)
1.10.22 Structure Components, Defects, Workmanship: five (5) years, unlimited mileage/hours
(Including Parts, Labor and Repairs)
1.10.23 Towing: two (2) years, dated when placed in service. If the apparatus has a warrantable defect and is deemed unsafe or unlawful to operate, the contractor shall be responsible for towing the apparatus to the warranty repair facility which shall be located within a 30-mile radius of Riverside County.
1.10.24 Transmission: shall have a five (5) year unlimited mileage / hour warranty.
1.10.25 The warranty period shall begin upon formal written acceptance by the county.

1.10.26 The manufacturer of the final product will be the single point of contact and assumes all responsibility for any/all warranty issues on the entire apparatus. NO EXCEPTIONS (This is due to eliminating any warranty contactor issues).

1.10.27 If any component, unit or subsystem is repaired, rebuilt or replaced during the warranty period, the remaining unexpired warranty period shall remain.

Comply with Section 1.10: YES_____NO_____

Bidder Response Section 1.10:

1.11 Warranty Repair Parts

The Bidder shall maintain a parts inventory that is appropriate with the replacement needs based on the Riverside County Fire Departments fleet size in stock. This parts inventory shall be available to be delivered within 24 hours to Riverside County Fire Department.

Comply with Section 1.11: YES_____NO_____

Bidder Response Section 1.11:

1.12 Warranty Item General Repairs

Warranties in this document are in addition to any statutory remedies or warranties imposed on Contractor. Consistent with this requirement, Contractor warrants to County each complete chassis, body, specific subsystems, and components as follows: The warranty is based on regular operation of the fire engine under the operating conditions prevailing in Riverside County under serve duty service and fire service environment. This warranty shall include all labor and materials required in repairing or replacing all parts.

Comply with Section 1.12: YES_____NO_____

Bidder Response Section 1.12:

1.13 Repairs by Contractor

1.13.1 All repairs shall be completed in a timely manner. Contractor shall make every reasonable attempt to complete each repair upon receipt of the apparatus.

1.13.2 For normal warranty repair work, the contractor shall be responsible to transport the apparatus to and from the warranty facility at no cost to the County. The Chilton manual shall be utilized for chassis items. Once the apparatus is at the warranty facility, the apparatus shall not be parked awaiting service. All repairs shall be completed as soon as possible with no delays.

1.13.3 Contractor shall provide to the County one (1) legible copy of the warranty work order describing all work performed and parts provided; including, the total cost for repairs. For all warranty repairs, contractor shall pick-up and deliver each apparatus to one of two location determined by the County, either the Perris shop or Indio shop.

1.13.4 Contractor shall pick up the apparatus in need of warranty repair within twenty-four (24) hours of being notified by the County. The County may elect, at their own discretion, to deliver the apparatus to the warranty repair facility, or pick up the apparatus from the warranty repair facility as needed.

Comply with Section 1.13: YES_____NO_____

Bidder Response Section 1.13:

1.14 Repairs made by County

1.14.1 All warranty repairs performed inhouse by County Technician's shall be considered the same as if the repairs were conducted at the Contractor's warranty facility. The repairs shall in no way negatively affect

the apparatus or component warranties. Prior to any inhouse warranty repairs, the Contractor shall provide to the County written authorization to perform the warranty repair work. This authorization shall be included in the County's submittal to the Contractor for reimbursement of labor and parts.

1.14.2 Contractor shall provide and deliver to Riverside County Fire Department, all parts required for repairs within seventy-two (72) hours, upon request by Riverside County Fire Department. If Contractor fails to deliver said requested parts within seventy-two (72) hours, Riverside County Fire Department reserves the right to separately procure said required parts, from another source. Contractor shall reimburse Riverside County Fire Department for any invoiced cost, including applicable sales taxes and freight charges. Contractor shall replace and deliver to Riverside County Fire Department, all parts used for warranty repairs from Riverside County Fire Department inventory, within seventy-two (72) hours, upon request by Riverside County Fire Department. Riverside County Fire Department shall return to Contractor for pick-up, upon Contractor request, all defective parts covered under warranty and replaced by Riverside County Fire Department, for a period of not less than sixty (60) days upon completion of repairs. Riverside County Fire Department shall be reimbursed by Contractor within thirty (30) calendar days for any Riverside County Fire Department labor provided for repairs under warranty. The amount of reimbursement shall be determined by multiplying the number of man-hours allowed by O.E.M., times standards including the flat rate manual fee of one- hundred and ten ($110.00) dollars per hour. Furthermore, Riverside County Fire Department will charge an additional cost to tow the fire engine (within the normal warranty service area) to the warranty repair facility, or to Contractor should such action be necessary.

Comply with Section 1.14: YES_____NO_____

Bidder Response Section 1.14:

1.15 Acceptance Authority

Formal acceptance of each apparatus shall be provided in writing by the County's Fire Chief and/or his designee and will be made after the vehicle has passed all operational tests and all identified problems have been fixed.

Comply with Section 1.15: YES_____NO_____

Bidder Response Section 1.15:

1.16 Required Meetings

1.16.1 Cost is to be pre-set at the time of contract award and included in the base price of the apparatus. All travel shall depart and return from Palm Springs International Airport (PSP). It shall be the responsibility of the County Apparatus Committee representatives to arrive and depart from Palm Springs International Airport (PSP), all travel cost between departing from and returning to PSP shall be the responsibility of the awarded contractor. Travel costs that are the responsibility of the awarded contractor shall include:

1.16.1.1 All air travel
1.16.1.2 Baggage fees up to one checked bag per traveling Apparatus Committee member
1.16.1.3 Car Rental Fee
1.16.1.4 Lodging expenses. (Single room occupancy per person)
1.16.1.5 All Meals

1.16.2 **Engineering Support at Pre-Construction Meeting**

The Contractor shall provide an engineer to be present at the pre-construction meeting held at the factory location. The engineer will address all engineering related questions for the truck as purchased and for all proposed changes. The engineer is to remain present during the entire meeting. No Exception (Due to the Departments requirement to eliminate design oversights). The engineer will have the 2D and/or 3D AutoCAD electronic drawings projected on screen and be able to provide dimensional data for proposed

changes and proposed layouts. This will help ensure that the final design matches the County's intentions to the maximum extent possible.

1.16.3 **Pre-Construction Meeting**

The bidder shall provide transportation and all per diem costs for seven (7) County representatives to meet with bidder's staff as described below. These meetings typically follow an agenda of four (4) full working days and will be held at the manufacturing location. Tasks may be changed as requested by the County. The production drawings shall be available on computer aided design (CAD) equipment to assure critical tolerance and detail only available with CAD equipment. Should the County determine that the bidder has not properly interpreted the specifications or does not intend to manufacture the apparatus as specified; the County may cancel the contract at no cost to the County. No Exceptions (Due to the Departments requirement to eliminate design oversights).

1.16.3.1 CAD operator shall be present and fully functional during all phases of the pre-construction meeting when any discussion is taking place relating to the design and/construction of apparatus.

1.16.3.2 During the time when the CAD operator is required in the pre- construction meeting, the CAD operator shall project onto a large enough screen for all to clearly see, the construction drawing of the area of the apparatus being discussed. Any and all changes to the designed features shall be updated in real time while the meeting is being conducted.

1.16.3.3 Prior to the pre-construction meeting being completed, six (6) complete sets of CAD drawings on 17" X 11" paper shall be provided to the Riverside County Fire Department representatives. These updated construction drawings shall clearly show:

a. There shall be five (5) views of the truck with the doors closed (Top, Left, Right, Front, Rear), five (5) views of the apparatus with the doors open (Top, Left, Right, Rear, front) and five (5) views of any walk-in area (Top, Left, Right, Rear, Front) If applicable to current project).
b. All compartment door openings and usable space shall be clearly shown in inches with the door seal included
c. The apparatus overall length, height, width, wheelbase and cab-to-axle dimensions shall be clearly shown.
d. The apparatus overall length, height, width, wheelbase and cab-to-axle dimensions shall be clearly shown.
e. The angles of approach and departure shall be shown in the maximum loaded condition to the nearest degree.
f. All lighting packages will be clearly shown on the drawing and verified accurate per the most current NFPA standards (when applicable).
g. The exterior view shall show all scene lights, marker lights, speakers, horns, exhaust, tow points, exterior
outlets, windows, tow hitches, and any other item important to the function of the vehicle
h. The open view shall show all trays, shelves, air system components, hydraulic components, tool boards, storage modules and any other items important to the function of the vehicle.
i. The interior view for all walk-in areas shall show all seating positions, windows, tech equipment, radio locations and any other item important to the function of the vehicle. Dash layout to include radios, code 3 control electronics, spot light controllers, headset communications system, Department supplied MDC (Mobile Data Computer) and transmission gear selector control unit.
j. There shall be a drawing of the aerial vertical reach, horizontal reach, tip load, angle of elevation and overall width with the stabilizers deployed.

1.16.3.4 Failure to provide a qualified and functioning CAD operator during the pre-construction meeting shall constitute an immediate cancelation of the pre-construction meeting. Another date for the pre-construction meeting will be scheduled and all representatives of Riverside County Fire Department will be transported back to PSP airport at the bidder's expense. It will be the bidder's

responsibility to arrange for travel back to their facility for the rescheduled pre-construction meeting. The bidder shall be responsible for all expenses relating to the rescheduled meeting.

1.16.3.5 Confirmation of the availability of the CAD operator and his/her ability to produce all of the required materials for the scheduled pre-construction meeting shall be provide by e-mail prior to the representatives of the Riverside County Fire Department traveling to the bidders facility for the pre-construction meeting.

1.16.3.6 The requirement of the CAD operator and his/her ability to produce all the required drawings at the pre-construction meeting is a NO EXCEPTION ITEM (Due to the Departments requirement to eliminate design oversights). This ability shall be confirmed at the time of bid submission. Failure to comply with this requirement shall be grounds for automatic rejection of the bid proposal

a. Body compartment layout requirement.
b. Compartment lights: type, size, mounting and protection.
c. In-cab console design, location.
d. Blind attachments discussion.
e. Dash controls and gauges (type & location).
f. Seating arrangement.
g. Emergency warning system controls, location and overall design.
h. Radio installation.
i. Aerial trailer design and configuration.
j. Access, ergonomics, appearance.
k. Turn circle data: chassis turn radius, wall-to-wall, and curb-to-curb.
l. Sigtronics radio/intercom system installation and interface.
m. Discuss printed, visual materials list.
n. Mounting rechargeable flashlights, pike poles, rubbish hooks.
o. Electrical system design and layout.
p. Aluminum electrolysis engineering.

1.16.4 **Cab Chassis Inspection**

The bidder shall provide transportation and all per diem costs for two (2) County representatives to meet with bidder's staff as described below. The chassis inspection meeting shall be conducted inside of a clean, properly illuminated, temperature controlled apparatus bay that is intended specifically for the purposes of conducting vehicle inspections. These meetings typically follow an agenda of eight (8) hours per apparatus and will be held at the manufacturing location. The chassis will be available for inspection in a clear area, away from the production line. Tasks may be changed as requested by the County.

1.16.4.1 Obtain line setting sheet for chassis, filter, hose, and belt numbers for service center and shop.
1.16.4.2 Dana application and certification.
1.16.4.3 Alternator output curve.
1.16.4.4 Spring ratings.
1.16.4.5 Creeper inspection: axles, springs driveline, engine, transmission, steering.
1.16.4.6 Check for unauthorized blind attachments.
1.16.4.7 Still photo profile for department records.
1.16.4.8 Air-conditioning mounting.
1.16.4.9 Vehicle operation controls and gauges: type, location.
1.16.4.10 Front and rear axle weights and total vehicle weight.
1.16.4.11 The manufacturer shall make available the following items to be utilized during the chassis inspection:

a. Tape measure that reads in inches and is long enough to allow the length of apparatus to be measured at one time.
b. An operational flashlight.
c. Green or blue "painters type" tape.
d. An operational mechanics creeper.

1.16.5 **Trailer & Aerial Pre-Paint Inspection**

The bidder shall provide transportation and all per diem costs for three (3) County representatives to meet with bidder's staff as described below. The pre-paint inspection meeting shall be conducted inside of a clean, properly illuminated, temperature controlled apparatus bay that is intended specifically for the purposes of conducting vehicle inspections. These meetings typically follow an agenda of a minimum of two (2) working days and will be held at the manufacturing location. Tasks may be changed as requested by the County.

1.16.5.1 Creeper inspection: specification compliance.
1.16.5.2 Compartment location, dimensions.
1.16.5.3 Electrical system fabrication (12-Volt & 110-Volt).
1.16.5.4 Paint, striping and decal scheme.
1.16.5.5 Radio, communications system layout.
1.16.5.6 Emergency warning system.
1.16.5.7 Cab layout, scuff protection.
1.16.5.8 Overall vehicle layout.
1.16.5.9 Documentation that UL testing has been completed.

a. Tape measure that reads in inches and is long enough to allow the length of apparatus to be measured at one time.
b. An operational flashlight.
c. Green or blue "painters type" tape.
d. An operational mechanics creeper.

1.16.6 **Final Inspection**

The bidder shall provide transportation and all per diem costs for four (4) County representatives to meet with bidder's staff as described below. The final inspection meeting shall be conducted inside of a clean, properly illuminated, temperature controlled apparatus bay that is intended specifically for the purposes of conducting vehicle inspections. These meetings typically follow an agenda of two (2) full working days per apparatus and will be held at the manufacturing location. Tasks may be changed as requested by the County.

1.16.6.1 Creeper inspection: specification compliance.
1.16.6.2 Compartment location, dimensions.
1.16.6.3 Electrical system operations (12-Volt & generator power).
1.16.6.4 Finish details, workmanship
1.16.6.5 Paint, striping
1.16.6.6 Radio, communications system
1.16.6.7 Emergency warning system operations.
1.16.6.8 Performance testing: NFPA 1901 standard vehicle operational tests.
1.16.6.9 Cab Seating capacity tag specifying that seating for six (6) shall be provided.
1.16.6.10 Front and rear axle weights and total vehicle weight without personnel.
1.16.6.11 Trailer and aerial inspection.
1.16.6.12 UL Testing documentation.
1.16.6.13 The manufacture shall make available the following items to be utilized during the final inspection:

a. Tape measure that reads in inches and is long enough to allow the length of apparatus to be measured at one time.
b. An operational flashlight.
c. Green or blue "painters type" tape.
d. An operational mechanics creeper.

Comply with Section 1.16: YES_____NO_____

Bidder Response Section 1.16:

1.17 Delivery

1.17.1 The apparatus shall be delivered from the manufacturing facility to a local vendor (located within a 50-mile radius of Riverside County Fire Departments Headquarters) service/warranty facility after successful approval by the Riverside County Fire Department at the final inspection meeting. Prior to delivering the apparatus to the Riverside County Fire Department, the vendor shall:

- 1.17.1.1 Fully inspect the apparatus for any/all issues that may have developed during the drive between the manufacturing facility and the vendors service/warranty facility.
- 1.17.1.2 Verify that all of the items that were noted during the final inspection meeting were properly repaired and/or addressed.
- 1.17.1.3 Change the oil and oil filter.
- 1.17.1.4 Change the transmission filter.
- 1.17.1.5 Check differential fluid and change if required.
- 1.17.1.6 Check coolant fluid level.
- 1.17.1.7 Lube apparatus.
- 1.17.1.8 Clean apparatus.
- 1.17.1.9 Fill the diesel fuel tank.
- 1.17.1.10 Fill DEF tank.

1.17.2 The bidder shall deliver each apparatus to the Riverside County Fire Department at a location to be determined at the pre-construction meeting for final inspection and performance testing. The bidder shall remain responsible for each apparatus until it is delivered to and accepted by the Riverside County Fire Department.

1.17.3 **Delivery Engineer**

- 1.17.3.1 The apparatus shall be operated throughout all performance testing by the delivery engineer of the bidder. This delivery engineer shall also summarize the results with the County
- 1.17.3.2 The bidder assumes all liability in connection with any accidents, injuries, or damages related to the tests, and shall hold the County, its employees, agents and representatives harmless.
- 1.17.3.3 The bidder's delivery engineer shall provide forty (40) hours of operation training for Fire Department personnel in a Train-the-Trainer format, at a location to be determined by the County.
- 1.17.3.4 The bidder shall deliver onsite training for Fire Apparatus Technician's and provide forty (40) hours of operation training for Riverside County Fire Department personnel in a Train-the-Trainer format. All training shall be conducted at the Ben Clark Training Center located at 16791 Davis Avenue, Riverside, CA. Such training shall include general maintenance, trouble shooting, repair techniques, and timesaving suggestions. A minimum level of training in each area below shall also be provided to the Fire Department Fire Apparatus Technician's, which will include (2) shop locations one in (Perris) and one in (Indio) with an intent to provide a minimum of sixteen (16) hours per site to be determined by the County. This includes training handouts, and materials as required. The first class shall be within thirty (30) days from the first apparatus delivery. The second class shall be within six (6) months from the first apparatus delivery.
- 1.17.3.5 The delivery engineer shall possess extensive knowledge in tractor drawn aerials construction, layout & operational capabilities.

1.17.4 **Delivery Schedule**

- 1.17.4.1 The bidder shall provide a firm delivery schedule to the County within 10 days of completion of the pre-construction meeting.

Comply with Section 1.17: YES____ NO____

Bidder Response Section 1.17:

1.18 Performance Test and Requirements

1.18.1 All performance requirements and testing shall be based on the apparatus fully loaded to the manufacturer's certified weight rating and operating in ambient temperatures from 25 degrees Fahrenheit to 115 degrees Fahrenheit, with 50 percent humidity, at elevations from sea level to 7,000 feet above sea level.

1.18.2 The completed apparatus shall meet the air system, brake system, air conditioning system and engine and transmission cooling system performance requirements reflected herein.

1.18.3 An acceptance road test shall be conducted with the apparatus loaded to the manufacturer's certified weight rating. A continuous run of fifty (50) miles or more shall be made under any or all of the aforementioned operating conditions, during which time the apparatus shall show no loss of power or overheating. The transmission, drive shaft or shafts and rear drive axle shall run quietly and be free from abnormal vibration or noise throughout the operating range of apparatus.

1.18.4 The apparatus shall be capable of accelerating on a level concrete road, from a standing start to a speed of not less than 35 mph within 17 seconds.

1.18.5 The loaded apparatus shall be capable of starting up and ascending a 20% grade.

1.18.6 The loaded apparatus shall be capable of attaining a speed of not less than 4 mph from a standing start on a 20% grade.

1.18.7 The loaded apparatus shall be capable of ascending a continuous 6% grade, from sea level to an elevation of 7,000 feet at a speed of not less than 25 mph.

1.18.8 122.8 The loaded apparatus shall be electronically governed to not exceed the most current NFPA 1901 recommendation. NO EXCEPTIONS.

1.18.9 The service brakes, without auxiliary brakes, shall be capable of stopping the fully loaded vehicle in 30 feet at 20mph on a level concrete highway.

1.18.10 The service brakes shall be capable of stopping the fully loaded apparatus on a 20% grade and the parking brakes shall be capable of holding the fully loaded apparatus on a 20% grade.

1.18.11 The completed apparatus, as delivered, shall have equal turning diameters both left and right and shall have a maximum curb to curb diameter of 55' and a maximum wall to wall diameter of 58'.

1.18.12 The manufacturer at his expense shall have the apparatus tested and approved by Underwriters Laboratories Incorporated, in accordance with the latest version of NFPA Standard 1901.

1.18.13 It shall be required that the apparatus be operated throughout all tests by the delivery engineer of the successful bidder, and during such tests shall have a representative to work with from Riverside County Fire Department's Fleet Division in summarizing results of the tests. Riverside County Fire shall be notified a minimum of twenty-one (21) working days in advance of these tests and may elect to have a representative present.

1.18.14 A complete demonstration of how the apparatus and aerial ladder operates shall be conducted by the manufacturer during the on-site inspection of the completed apparatus.

Comply with Section 1.18: YES_____NO_____

Bidder Response Section 1.18:

1.19 <u>Failure to Meet Tests and Requirements</u>

1.19.1 In the event the apparatus fails to meet the test requirements on first trials, second trials shall be made within thirty (30) calendar days of the first trials. Such trials shall be final and conclusive, and failure to comply with the requirements shall be cause for rejection.

1.19.2 Failure to make changes as the Fire Department may consider necessary to conform to these specifications, within thirty (30) calendar days after written notice is given to the bidder to make such changes and shall be cause for rejection of the apparatus.

1.19.2.1 Failure of an inspection (Cab/chassis or Pre-paint) shall require a re-inspection prior to the bidder/builder moving on to the next phase of the apparatus construction. All costs of this re-inspection shall be the responsibility of the bidder. The Riverside County Fire Department shall send two (2) representatives to the re-inspection to ensure contract compliancy. The Riverside

County Fire Department shall not allow another inspection to be scheduled until confirmation of completion has been achieved on the previous inspection has been achieved.

1.19.2.2 Failure of a pre-paint inspection shall require that a re-inspection take place before any finish work (application of any filler materials and/or painting) take place.

1.19.2.3 Failure of the final inspection shall require a re-inspection prior to the bidder/builder delivering the apparatus. The final re- inspection shall take place at the vendors service/warranty facility. The Riverside County Fire Department shall send two (2) representatives to the re-inspection to insure contract compliancy.

1.19.3 All required equipment, manuals, charts, and books shall accompany the apparatus at the time of delivery. Failure to deliver the equipment and printed material as required may be cause for non-acceptance of the apparatus.

Comply with Section 1.19: YES_____NO_____

Bidder Response Section 1.19:

1.20 General Apparatus Construction Criteria

1.20.1 The design of the apparatus shall embody the latest approved SAE automotive and JIC hydraulic engineering practices and standards. The construction and workmanship throughout the apparatus shall be of the highest professional quality.

1.20.2 Welded construction shall not be used in the attachment of the following items: running boards, compartment hinges and fenders. Welded compartments are acceptable, but shelving within compartments must be adjustable.

1.20.3 All steel welding shall be performed to American Welding Society Standard D1.1-83 for structural steel welding. All aluminum welding shall be performed to American Welding Society Standard and ANSI D1.2-83 for structural welding of aluminum. All Flex cord arc welding shall use alloy rods type 7000 American Welding Society Standards A5.20-E70T1.

1.20.4 Welding shall not be employed in assembly of the apparatus in any manner that shall prevent the ready removal of any mechanical part or component for service or repair, including the attachment of fenders, running boards or compartment hinges.

1.20.5 All welding shall be neat and have uniform beads. All welding spatter shall be removed. Any torch cut metal shall have cuts ground smooth.

1.20.6 Anodized couplings used in connection with "Aeroquip" type lines are acceptable.

1.20.7 All sharp edges, burrs, etc., shall be ground or filed to a smooth radius. All exposed sharp corners of structural members shall be ground to a minimum radius of ½-inch or one-half the material width whichever is less.

1.20.8 Aluminum diamond-plate or stainless steel covering shall be used in all areas that have high exposure to paint finish damage under normal use. These areas include, but are not limited to, surface adjacent to walking or stepping surfaces, equipment mounting locations and areas subject to hose coupling and equipment damage.

1.20.9 The fire-body shall be built in accordance with design requirements and specifications listed in the trailer body & aerial section III.

1.20.10 Bolted construction consisting of machine screws with nuts and lock-washers shall be employed. Tapped holes, stud-welded fasteners or similar shall be used where necessary to permit items to be removed by one person where they cannot reach the opposite side of the fastener. All fasteners shall meet SAE J429 Standards.

Comply with Section 1.20: YES_____NO_____

Bidder Response Section 1.20:

1.21 Finish

1.21.1 All exposed metal surfaces will be painted. In preparation for painting running boards, rear steps, all aluminum tread-plate, stainless steel, chrome, compartment doors, pumps panels and similar parts shall be removed from apparatus.

1.21.2 All metal shall be thoroughly sanded and primed. A sufficient number of filler coats shall be applied to insure a smooth pit-free surface.

1.21.3 The apparatus body compartment interiors and inner door panels shall have a "Line-X" two-component spray-in-place thermoplastic polyurethane coating to provide maximum protection for everyday equipment removal and shifting.

1.21.4 The exterior cab and apparatus body will be painted in PPG FBCH 72626 Alt special red, in all areas.

1.21.5 The apparatus lettering and decal will be done to meet Riverside County Fire Department specifications. Photos and vendor information will be provided at the pre-construction meeting.

1.21.6 The apparatus lettering and decal will be done to meet Riverside County Fire Department specifications. Photos and vendor information will be provided at the pre-construction meeting.

1.21.7 The entire chassis frame rails shall be properly prepared and finish painted in job color prior to installation of body brackets, stiffeners, and support members or similar items. The entire chassis, engine and other components shall be thoroughly painted and free of rust when delivered to the Fire Department.

1.21.8 Any accessory equipment mounted before final painting must be removed prior to painting. Drilled holes for lights, sirens, compartments or similar items shall receive the final prime and finish paint so that all the holes, cut-outs, louvers and similar are painted.

1.21.9 After final painting all parts that have been removed and all aluminum tread-plate overlays and running boards must be assembled with coated nuts, bolts, and coated self-tapping screws, using special tape to preclude electrolysis and gasket to inhibit rust and corrosion. The use of gaskets under the accessories is required so brackets do not dig in and break the paint.

1.21.10 All metal surfaces will be painted, including areas covered by aluminum tread-plate, stainless or similar.

1.21.11 When painting the apparatus, the engine compartment shall be masked off so that paint will be kept off fan belts, radiator hoses, wiring or other electrical appurtenance.

1.21.12 Chromium plating shall be of the highest quality decorative type and comply with ASTM Table II, Class 4 "Service: Very Severe"; and also shall meet ASTM-A-219-58 "Thickness" and ASTM-B-380-61T, "Corrosion Test Methods" latest editions.

1.21.13 The body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body.

Comply with Section 1.21: YES_____NO_____

Bidder Response Section 1.21:

1.22 Paint Process

The metal is to be thoroughly cleaned and prepped in accordance with paint manufacturer's recommendations for polyurethane enamel finish. Color primer will be applied at 2 to 4- mil thickness, and a minimum of 2-3 coat finish to provide a smooth blemish free surface for a final color application of 2 to 3- mil thicknesses. Exterior paint shall average at least eighty even (87) reflectivity measured at not fewer than twelve location per the paint manufacturer's standard test method. A mirror finish is expected. No runs, sags, fish-eyes, orange-peel, foggy topcoat, or other finish defects will be accepted. Apparatus body shall be free from sharp corners, edges, burrs and other conditions hazardous to passengers, driver and maintenance personnel.

Comply with Section 1.22: YES_____NO_____

Bidder Response Section 1.22:

1.23 Reflective Markings

1.23.1 A white 6-inch reflective tape will be applied on the vehicle that meets the latest NFPA 1901 Standard and must match existing County standards. Photographs and specifications will be provided to the bidder upon request.

1.23.2 In addition to the custom striping pattern on the apparatus, there shall be additional reflective striping applied to the entire rear of the unit. The striping shall consist of alternating red and fluorescent yellow reflective stripes. Each stripe shall be a minimum of six (6) inches in width and shall be applied to the apparatus at a 45 degree angle. Chevron striping to the entire recessed portion of the rear of the body around the T1 door and under the tiller cab.

1.23.3 There shall be a 1 1/2 inch strip of chevron on the edge of the inner pan of all compartments on the cab, and fire body. The colors shall be the same as the chevron striping on the rear of the apparatus.

1.23.4 There shall be a four (4) inch wide Red/Yellow chevron that shall be applied to the outer most edge all of the compartment interior door pans. This reflective material shall run the full height of the compartment door.

1.23.5 The interior of each cab door shall include high visibility reflective tape. A white reflective tape one (1) inch in width shall be provided vertically along the rear outer edge of the door. The lowest portion of each door skin shall include a reflective tape chevron with red and white stripes. The chevron tape shall measure twelve (12) inches in height.

1.23.6 There shall be two (2) inch reflective striping installed in the rub rail channel. The reflective striping shall be diamond grade quality material for increased visibility. The reflective tape shall be silver in color.

1.23.7 There shall be two (2) reflective American Flags installed on the apparatus. Location to be determined at the pre-construction meeting. All red/yellow chevron striping shall match throughout the entire apparatus

Comply with Section 1.23: YES_____NO_____

Bidder Response Section 1.23:

1.24 Materials

All materials shall conform to the detailed specifications.When not specifically listed, materials shall be of the best quality for commercial use. Materials shall be free of all defects and imperfections that might affect the completed apparatus.

Comply with Section 1.24: YES_____NO_____

Bidder Response Section 1.24:

1.25 Replacement Parts

1.25.1 The bidder shall list and attach to their proposal any proprietary parts; to include, part #'s, item description and unit price for all proprietary parts exclusively manufactured for the apparatus being offered.

1.25.2 Bidder shall provide a guarantee confirming the manufacturer of the apparatus will have readily available for immediate shipment to the County a complete stock of all proprietary parts for a period of twenty (20) years from date the apparatus is delivered/accepted by the County.

1.25.3 The manufacturer of the apparatus shall not provide any components or parts that reflect their name or logo which are not proprietary to them; thereby, preventing the County from purchasing an "exact" replacement component or part through regular supply distribution channels (i.e. manufacturing jobbers or retail outlets).

Comply with Section 1.25: YES_____NO_____

Bidder Response Section 1.25:

1.26 Compliance

The bidder shall be liable for all costs associated with failure of the apparatus to comply with these specifications. Final acceptance of the apparatus will not be made, nor any payments made, until such time as all discrepancies are corrected to the satisfaction of the County.

Comply with Section 1.26: YES_____NO_____

Bidder Response Section 1.26:

1.27 Vehicle Registration

1.27.1 Bidder shall be licensed by the California Department of Motor Vehicles as a dealer for commercial vehicles and have the ability legally register any vehicles purchased.

1.27.2 Contractor shall ship all vehicles with temporary registration.

Comply with Section 1.27: YES_____NO_____

Bidder Response Section 1.27:

1.28 Quality Assurance Provisions

1.28.1 The County reserves the right, at the County's expense, to maintain a representative(s) in Manufacturer's Plant and assembly line during the production of its apparatus to observe the assembly with the intent to provide clarification to the bid specifications. The County also reserves the right, at the County's expense, to maintain a representative(s) in Contractor's Dealership pre-delivery preparation facility location during the pre-delivery production of its apparatus. The County shall observe the pre-delivery preparation and provide clarification of the departments bid specifications prior to delivery of apparatus to the County's delivery and acceptance location.

1.28.2 The manufacturer shall build one complete apparatus prior to the construction of any others. The County's must approve everything on the first apparatus to ensure everything has been built to the spec

Comply with Section 1.28: YES_____NO_____

Bidder Response Section 1.28:

End of Section I – General

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2.220 Volt Twist Lock, Single Receptacle
2.221 Generator
2.222 Manufacturing Labels

SECTION II – CAB & CHASSIS

2.1 Model

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

Comply with Section 2.1: YES_____NO_____

Bidder Response Section 2.1:

2.2 Country of Service

The chassis shall be put in service in the country of United States of America (USA). The chassis will meet applicable U.S.A. federal motor vehicle safety standards per CFR Title 49 Chapter V Part 571 as clarified in the incomplete vehicle book per CFR Title 49 Chapter V Part 568 Section 4 which accompanies each chassis.

Comply with Section 2.2: YES_____NO_____

Bidder Response Section 2.2:

2.3 Cab and Chassis Labeling Language

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

Comply with Section 2.3: YES_____NO_____

Bidder Response Section 2.3:

2.4 Apparatus Type

The apparatus shall be a mid-mount aerial vehicle designed for emergency service use. The apparatus shall be equipped with a mid-mount aerial ladder, minimum 100' in length.

Comply with Section 2.4: YES_____NO_____

Bidder Response Section 2.4:

2.5 Vehicle Type

The chassis shall be manufactured for use as a tractor type vehicle, designed to accept a trailer through the use of a fifth wheel hitch. The trailer shall be supplied and installed by the apparatus manufacturer.

Comply with Section 2.5: YES_____NO_____

Bidder Response Section 2.5:

2.6 Axle Configuration

The chassis shall feature a 4 x 2 axle configuration consisting of a single rear drive axle with a single front steer axle.

2.6.1 **Front Steer Axle**

The front steer axle shall be a Meritor "wide track" with a manufacturer's certified weight rating of not less than 21,500 lbs.

2.6.2 **Drive Axle**

The rear axle shall be a Meritor model RS-30-185 single drive axle. The axle shall include precision forged, single reduction differential gearing, and shall have a fire service rated capacity of 33,000 pounds. The axle shall be built of superior construction and quality components to provide the rugged dependability needed

to stand up to the fire industry's demands. The axle shall include rectangular shaped, hot-formed housing with a standard wall thickness of 0.56 of an inch for extra strength and rigidity and a rigid differential case for high axle strength and reduced maintenance. The axle shall have heavy-duty Hypoid gearing for longer life, greater strength and quieter operation. Industry-standard wheel ends for compatibility with both disc and drum brakes, and unitized oil seal technology to keep lubricant in and help prevent contaminant damage will be used.

2.6.3 **Rear Trailer Steer Axle**

The rear trailer steer axle shall be Meritor having a manufacturer's certified weight rating of not less than 23,000 lbs.

Comply with Section 2.6: YES_____NO_____

Bidder Response Section 2.6:

2.7 Gross Axle Weight Ratings Front

The front gross axle weight rating (GAWR) of the chassis shall be 21,500 pounds. This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

Comply with Section 2.7: YES_____NO_____

Bidder Response Section 2.7:

2.8 Gross Drive Axle Weight Rating

The rear gross axle weight rating (GAWR) of the chassis shall be 31,000 pounds. This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

Comply with Section 2.8: YES_____NO_____

Bidder Response Section 2.8:

2.9 Gross Combination Weight Rating

The gross combination weight rating (GCWR) shall be 74,500 lbs. The sum of the gross weight of the vehicle and the gross weight of the trailer intended to be towed shall not exceed this GCWR.

Comply with Section 2.9: YES_____NO_____

Bidder Response Section 2.9:

2.10 Cab Style

The cab shall be a custom, fully enclosed, four door model with a flat roof over the driver, officer, and crew area, designed and built specifically for use as an emergency response vehicle by a company specializing in cab and chassis design for all emergency response applications. The cab shall be designed for heavy-duty service utilizing superior strength and capacity for the application of protecting the occupants of the vehicle. This style of cab shall offer up to six (6) seating positions. The cab shall incorporate a fully enclosed design with side wall roof supports, allowing for a spacious cab area with no partition between the front and rear sections of the cab. The cab shall be constructed of 5052-H32 corrosion resistant aluminum plate. The cab shall incorporate tongue and groove fitted 6061-T6 0.13 & 0.19-inch-thick aluminum extrusions for extreme duty situations. A single formed, one (1) piece extrusion shall be used for the "A" pillar, adding strength and rigidity to the cab as well as additional roll-over protection. The cab side walls and roof skin shall be 0.13-inch-thick; the rear wall skin shall be 0.09-inch-thick; the front cab structure shall be 0.19 inch thick. The exterior width of the cab shall be a minimum 99.00 inches wide with a minimum interior width of 91.00 inches. The cab interior shall be designed to afford the maximum usable interior space and attention to ergonomics with hip and leg room while seated which exceeds industry standards. The crew cab floor shall be flat across the entire walking area for ease of movement inside the cab.

Comply with Section 2.10: YES_____NO_____

Bidder Response Section 2.10:

2.11 Cab Front Fascia

The front cab fascia shall be constructed of 5052-H32 Marine Grade, 0.13 of an inch thick aluminum plate which shall be an integral part of the cab. The cab fascia will encompass the entire front of the aluminum cab structure from the bottom of the windshield to the bottom of the cab and shall be the "Classic" design. The front cab fascia shall include two (2) molded plastic modules on each side accommodating a total of up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights. A chrome plated molded plastic bezel shall be provided on each side around each set of four lamps.

Comply with Section 2.11: YES_____NO_____

Bidder Response Section2.11:

2.12 Front Grille

The front cab fascia shall include a classic box style, 304 stainless steel front grille. The grille shall measure approximately approximate 55" wide X 33" inches high X 1.50 inches deep. The upper portion of the grille shall be hinged to provide service access behind the grille. The grille shall include a minimum free air intake of approximately 750.00 square inches

Comply with Section 2.12: YES_____NO_____

Bidder Response Section 2.12:

2.13 Cab Undercoat

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

Comply with Section 2.13: YES_____NO_____

Bidder Response Section 2.13:

2.14 Cab Side Drip Rail

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

Comply with Section 2.14: YES_____NO_____

Bidder Response Section 2.14:

2.15 Cab Paint Exterior

The cab shall be painted prior to the installation of glass accessories and all other cab trim to ensure complete paint coverage and the maximum in corrosion protection of all metal surfaces. All metal surfaces on the entire cab shall be ground by disc to remove any surface oxidation or surface debris which may hinder the paint adhesion. Once the surface is machine ground a high-quality acid etching of base primer shall be applied. Upon the application of body fillers and their preparation, the cab shall be primed with a coating designed for corrosion resistance and surface paint adhesion. The maximum thickness of the primer coat shall be 2.00 mils. The entire cab shall then be coated with an intermediate solid or epoxy surfacing agent that is designed to fill any minor surface defects, provide an adhesive bond between the primer and the paint and improve the color and gloss retention of the color. The finish to this procedure shall be a sanding of the cab with 360 grit paper followed by sealing the seams with SEM brand

seam sealer. The cab shall then be painted the specific color designated by the customer with an acrylic urethane type system designed to retain color and resist acid rain and most atmospheric chemicals found on the fire ground or emergency scene. The paint shall have a minimum thickness of 2.00 mils, followed by a clear top coat not to exceed 2.00 mils. The entire cab shall then be baked at 180 degrees for one (1) hour to speed the curing process of the coatings.

Comply with Section 2.15: YES_____NO_____

Bidder Response Section 2.15:

2.16 Cab Paint Manufacturer

The cab shall be painted with PPG Industries paint.

Comply with Section 2.16: YES_____NO_____

Bidder Response Section 2.16:

2.17 Cab Paint Primary/Lower Color

The lower paint color shall be PPG FBCH 72626 ALT Red.

Comply with Section 2.17: YES_____NO_____

Bidder Response Section 2.17:

2.18 Cab Paint Roof Color

The cab roof paint color shall be PPG FBCH 72626 ALT Red.

Comply with Section 2.18: YES_____NO_____

Bidder Response Section 2.18:

2.19 Cab Roof Coating

The cab roof shall be coated with a flexible, non-skid textured truck bed type coating to the uppermost curve of the roofline so as to not be visible from the ground. Areas where attached components seal to shall be masked off. The color of the roof coating shall be white.

Comply with Section 2.19: YES_____NO_____

Bidder Response Section 2.19:

2.20 Cab Paint Warranty

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

Comply with Section 2.20: YES_____NO_____

Bidder Response Section 2.20:

2.21 Cab Paint Interior

The visible interior cab structure surfaces shall be painted with a black Rhino Liner type finish.

Comply with Section 2.21: YES_____NO_____

Bidder Response Section 2.21:

2.22 Cab Entry Doors

The cab shall include four (4) entry doors, two (2) front doors and two (2) crew doors designed for ease of entering and egress when outfitted with an SCBA. The doors shall be constructed of extruded aluminum with a nominal thickness of 0.13 inch. The exterior skins shall be constructed of 0.13-inch aluminum plate. The doors shall include a double rolled style automotive rubber seal around the perimeter of each door frame and door edge which ensures a weather tight fit. All door hinges shall be hidden within flush mounted cab doors for a pleasing smooth appearance and perfect fit along each side of the cab. Each door hinge shall be piano style with a 0.38-inch pin and shall be constructed of stainless steel.

Comply with Section 2.22: YES_____NO_____

Bidder Response Section 2.22:

2.23 Cab Entry Door Type

All cab entry doors shall be barrier clear design resulting in exposed lower cab steps. The doors shall provide approximately 32.00 inches of clearance from the ground to the bottom of the door so cab doors may be opened un-hindered by most obstacles encountered, such as guard rails along interstate highways.

Comply with Section 2.23: YES_____NO_____

Bidder Response Section 2.23:

2.24 Cab Insulation

The cab ceiling and walls shall include 1.00-inch-thick foam insulation. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

Comply with Section 2.24: YES_____NO_____

Bidder Response Section 2.24:

2.25 Cab Structural Warranty

The cab structure shall be warranted for a period of ten (10) years which ever may occur first. The warranty period shall commence on the date the vehicle is placed into service by Riverside County Fire.

Comply with Section 2.25: YES_____NO_____

Bidder Response Section 2.25:

2.26 Cab Test Information

The cab shall have successfully completed the preload side impact, static roof load application and frontal impact without encroachment to the occupant survival space when tested in accordance with Section 4 of SAE J2420 COE Frontal Strength Evaluation Dynamic Loading Heavy Trucks, Section 5 of SAE J2422 Cab Roof Strength Evaluation Quasi –Static Loading Heavy Trucks and ECE R29 Uniform Provisions Concerning the Approval of Vehicles with regard to the Protection of the Occupants of the Cab of a Commercial Vehicles Annex 3 Paragraph 5. The above tests have been witnessed by and attested to by an independent third party. The test results were recorded using cameras, high speed imagers, accelerometers and strain gauges. Documentation of the testing shall be provided upon request.

Comply with Section 2.26: YES_____NO_____

Bidder Response Section 2.26:

2.27 Roof Mounted Antenna Array

Provide a sealed antenna array on top of the cab, constructed of welded 3"x3" square aluminum tubing and welded to the cab roof. The array shall be a "U" shape extending 60" along the outer sides of the cab roof and tied together across the rear. A minimum of four (4) exterior access openings shall be provided in each of the three sections (inboard on sides and outboard on rear) to allow for antenna mounting. The rear section shall be provided with no less than three drain tunnels to promote roof drainage and shall provide a through the roof transition into the rear bad communications cabinet. This transition shall be provided with a 100% welded ¾" bulkhead trim to prevent accumulated moisture from dripping into the communications compartment.

Comply with Section 2.27: YES_____NO_____

Bidder Response Section 2.27:

2.28 Electrical System

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

Comply with Section 2.28: YES_____NO_____

Bidder Response Section 2.28:

2.29 OEM Wiring

The wiring system shall include a custom J1939 interface harness drop provided by the chassis manufacturer designed to meet the requirements provided by the OEM. The wiring system shall also include a prewire for ECM park brake input and engine ground return circuits located behind the switch panel. The circuits shall include an extra 2 feet of wire and shall be labeled "ECM Park Brake Input".

Comply with Section 2.29: YES_____NO_____

Bidder Response Section 2.29:

2.30 Trailer Electrical Connection

A seven (7) pin round electrical trailer electrical connection shall be provided with the chassis. The wiring shall include a ground wire which shall be in the white cavity; wiring for marker lights which shall be black; left turn signal wiring which shall be yellow, wiring for stop lights which shall be red; right turn signal wiring which shall be green, additional marker lights which shall be brown and ABS brake power which shall be in the blue cavity.

Comply with Section 2.30: YES_____NO_____

Bidder Response Section 2.30:

2.31 Data Recording System

The chassis shall have a Class One Vehicle Data Recorder (VDR) system installed. The system shall be designed to meet NFPA 1901. The following information shall be recorded:

a. Vehicle Speed
b. Acceleration

c. Deceleration
d. Engine Speed
e. Engine Throttle Position
f. ABS Event
g. Seat Occupied Status
h. Seat Belt Status
i. Master Optical Warning Device Switch Position
j. Time
k. Date

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system. The laptop connection shall be a panel mounted female type B USB connection point, remotely mounted in the left side foot well of the cab.

Comply with Section 2.31: YES_____NO_____

Bidder Response Section 2.31:

2.32 Accessory Power

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

Comply with Section 2.32: YES_____NO_____

Bidder Response Section 2.32:

2.33 Auxiliary Accessory Power

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

Comply with Section 2.33: YES_____NO_____

Bidder Response Section 2.33:

2.34 Exterior Electrical Terminal Coating

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

Comply with Section 2.34: YES_____NO_____

Bidder Response Section 2.34:

2.35 Engine

The apparatus shall be equipped with a current model year Cummins ISX 15 or equal diesel engine governed at 2100RPM and rated for fire service. The following requirements shall be met:

a. 15.0 Liter maximum displacement.
b. 600 Minimum horsepower.
c. 1850 lb/ft minimum torque at 1,200RPM.

The engine shall meet the current 50 State emission requirements.

Comply with Section 2.35: YES_____NO_____

Bidder Response Section 2.35:

2.36 Cab Engine Tunnel

The cab interior shall include an integrated engine tunnel constructed of 5052-H32 Marine Grade 0.19 of an inch-thick aluminum alloy plate. The tunnel shall be a maximum of 46.50 inches wide X 29.00 inches high.

Comply with Section 2.36: YES_____NO_____

Bidder Response Section 2.36:

2.37 Diesel Particulate Filter Control

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

Comply with Section 2.37: YES_____NO_____

Bidder Response Section 2.37:

2.38 Engine Programming High Idle Speed

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

Comply with Section 2.38: YES_____NO_____

Bidder Response Section 2.38:

2.39 Engine High Idle Control

The vehicle shall be equipped with a high-idle speed button on the Vista screen, which shall be pre-set to maintain the engine idle at a pre-determined rate when activated manually. This device shall operate when the master switch is activated and safely interlocked only to function when the transmission is in neutral with the parking brake set.

Comply with Section 2.39: YES_____NO_____

Bidder Response Section 2.39:

2.40 Engine Programming Road Speed Governor

The engine shall include programming which will govern the top speed of the vehicle per NFPA 1901's recommendation.

Comply with Section 2.40: YES_____NO_____

Bidder Response Section 2.40:

2.41 Auxiliary Engine Brake

A compression brake, for the six (6) cylinder engine shall be provided. A cutout relay shall be installed to disable the compression brake when in pump mode or when an ABS event occurs. The engine compression brake shall activate upon 0% accelerator when in operation mode and actuate the vehicle's brake lights. The engine shall utilize a variable geometry turbo (VGT) as an integrated auxiliary engine brake to offer a variable rate of exhaust flow, which when activated in conjunction with the compression brake shall enhance the engine's compression braking capabilities.

Comply with Section 2.41: YES_____NO_____

Bidder Response Section 2.41:

2.42 Auxiliary Engine Brake Control

An engine compression brake control device shall be included. The electronic control device shall monitor various conditions and shall activate the engine brake only if all the following conditions are simultaneously detected:

a. A valid gear ratio is detected.
b. The driver has requested or enabled engine compression brake operation.
c. The throttle is at a minimum engine speed position.
d. The electronic controller is not presently attempting to execute an electronically controlled final drive gear shift.
e. There is no active ABS event.

The compression brake shall be controlled through an off/low/high rocker switch on the dash.

Comply with Section 2.42: YES_____NO_____

Bidder Response Section 2.42:

2.43 Electronic Engine Oil Level Indicator

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

Comply with Section 2.43: YES_____NO_____

Bidder Response Section 2.43:

2.44 Fluid Fills

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

Comply with Section 2.44: YES_____NO_____

Bidder Response Section 2.44:

2.45 Engine Drain Plug

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

Comply with Section 2.45: YES_____NO_____

Bidder Response Section 2.45:

2.46 Engine Programming Idle Speed

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

Comply with Section 2.46: YES_____NO_____

Bidder Response Section 2.46:

2.47 Engine Fan Drive

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

Comply with Section 2.47: YES_____NO_____

Bidder Response Section 2.47:

2.48 Engine Cooling System

There shall be a heavy-duty aluminum cooling system designed to meet the demands of the emergency response industry. The cooling system shall have the capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the requirements specified by the engine and transmission manufacturer and all EPA requirements. The complete cooling system shall be mounted to isolate the entire system from vibration or stress. The individual cores of the cooling system shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress into the adjoining cores. The cooling system shall be comprised of a charge air cooler to radiator serial flow package that provides the maximum cooling capacity for the specified engine as well as serviceability. The main components shall include a surge tank, a charge air cooler bolted to the front of the radiator, recirculation shields, a shroud, a fan, and required tubing. The radiator shall be a down-flow design constructed with aluminum cores, steel end tanks, and a steel frame. The radiator shall be equipped with a drain cock to drain the coolant for serviceability. The radiator shall have a sight glass visible when the cab is lifted. The sight shall eliminate the need to remove the radiator cap to check the coolant level. The cooling system shall include a one piece injected molded polymer eleven (11) blade fan with a three (3) piece fiberglass fan shroud. The cooling system shall be equipped with a surge tank that is capable of removing entrained air from the system. The surge tank shall be equipped with a low coolant probe and sight glass to monitor the level of the coolant. The sight glass shall be easily visible when the cab is raised. The surge tank shall have a dual seal cap that meets the engine manufacturer's pressure requirements, and allows for expansion and recovery of coolant into a separate integral expansion chamber. All radiator tubes shall be formed from aluminized steel tubing. Recirculation shields shall be installed where required to prevent heated air from reentering the cooling package and affecting performance. The charge air cooler shall be a cross-flow design constructed completely of aluminum with cast tanks. All charge air cooler tubes shall be formed from aluminized steel tubing and installed with silicone hump hoses and stainless steel “constant torque” style clamps meeting the engine manufacturer's requirements. The radiator and charge air cooler shall be removable through the bottom of the chassis.

Comply with Section 2.48: YES_____NO_____

Bidder Response Section 2.48:

2.49 Engine Cooling System Protection

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

Comply with Section 2.49: YES_____NO_____

Bidder Response Section 2.49:

2.50 Engine Coolant

The cooling package shall include Extended Life Coolant (ELC). The use of ELC provides longer intervals between coolant changes over standard coolants providing improved performance. The coolant shall contain a 50/50 mix of

ethylene glycol and de-ionized water to keep the coolant from freezing to a temperature of -34 degrees Fahrenheit. Proposals offering supplemental coolant additives (SCA) shall not be considered, as this is part of the extended life coolant makeup.

Comply with Section 2.50: YES_____NO_____

Bidder Response Section 2.50:

2.51 Engine Cooling Recovery Tank

There shall be a non-pressurized engine coolant recovery tank.

Comply with Section 2.51: YES_____NO_____

Bidder Response Section 2.51:

2.52 Engine Coolant Filter

An engine coolant filter with a shut-off valve for the inlet and outlet shall be installed on the chassis. The location of the filter shall allow for easy maintenance. Proposals offering engines equipped with coolant filters shall be supplied with standard non-chemical type particulate filters.

Comply with Section 2.52: YES_____NO_____

Bidder Response Section 2.52:

2.53 Electronic Coolant Level Indicator

The instrument panel shall feature a low engine coolant indicator light which shall be located in the center of the instrument panel. An audible tone alarm shall also be provided to warn of a low coolant incident.

Comply with Section 2.53: YES_____NO_____

Bidder Response Section 2.53:

2.54 Coolant Hoses

The cooling system hoses shall be standard black gates heater hose with rubber hoses in the cab interior. The radiator hoses shall be formed standard black gates coolant hoses with formed aluminized steel tubing. All heater hose, standard black gates coolant hose, and tubing shall be secured with stainless steel constant torque band clamps. (2) seasonal heater shutoff valves shall be installed. (location TBD at PreCon)

Comply with Section 2.54: YES_____NO_____

Bidder Response Section 2.54:

2.55 Engine Air Intake

The engine air intake system shall include an ember separator air intake filter. This filter ember separator shall be designed to protect the downstream air filter from embers, using a combination of unique flat and crimped metal screens packaged in a corrosion resistant heavy duty galvanized steel frame. This multilayered screen shall be design traps embers and allows them to burn out before passing through the pack. The air cleaner shall utilize a replaceable filter element designed to prevent dust and debris from being ingested into the engine. The air cleaner housing and connections in the air intake system shall be designed to mitigate water intrusion into the system during severe weather conditions. The air intake system shall also include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

Comply with Section 2.55: YES_____NO_____

Bidder Response Section 2.55:

2.56 Air Intake Protection

A light duty skid plate shall be supplied for the engine air intake. The skid plate shall provide protection for the air intake system from light impacts, stones, and road debris. The skid plate shall be painted to match the frame color.

Comply with Section 2.56: YES_____NO_____

Bidder Response Section 2.56:

2.57 Engine Exhaust System

The exhaust system shall include an end-in end-out horizontally mounted single module after treatment device, downpipe from the charge air cooled turbo. The single module shall include four temperature sensors, diesel particulate filter (DPF), urea dosing module (UL2), and a selective catalytic reduction (SCR) catalyst to meet current EPA standards. The selective catalytic reduction catalyst utilizes a diesel exhaust fluid solution consisting of urea and purified water to convert NOx into nitrogen, water, and trace amounts of carbon dioxide. The solution shall be mixed and injected into the system through the between the DPF and SCR. The system shall utilize 0.07-inch-thick stainless steel exhaust tubing between the engine turbo and the DPF. Zero leak clamps seal all system joints between the turbo and DPF. The single module after treatment through the end of the tailpipe shall be connected with zero leak clamps. The discharge shall terminate horizontally on the right side of the vehicle ahead of the rear tires. The exhaust system after treatment module shall be mounted below the frame in the inboard position.

Comply with Section 2.57: YES_____NO_____

Bidder Response Section 2.57:

2.58 Diesel Exhaust Fluid Tank

The exhaust system shall include a molded cross linked polyethylene tank for Diesel Exhaust Fluid (DEF). The tank shall have a capacity of ten (10) usable gallons and shall be mounted on the left-hand side of the chassis next to the diesel fuel fill. The DEF fill shall have a separate access door than the fuel fill. The DEF tank shall be designed with capacity for expansion in case of fluid freezing. Engine coolant, which shall be thermostatically controlled, shall be run through lines in the tank to help prevent the DEF from freezing and to provide a means of thawing the fluid if it should become frozen. The tank fill tube shall be routed under the rear of the cab with the fill neck and splash guard accessible in the top rear step.

Comply with Section 2.58: YES_____NO_____

Bidder Response Section 2.58:

2.59 Engine Exhaust Accessories

An exhaust temperature mitigation device shall be shipped loose for installation by the body manufacturer on the vehicle. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet. The engine exhaust shall terminate at a 30-degree angle on the officer side with the ability to accommodate a Plymovent connection.

Comply with Section 2.59: YES_____NO_____

Bidder Response Section 2.59:

2.60 Engine Exhaust Wrap

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

Comply with Section 2.60: YES_____NO_____

Bidder Response Section 2.60:

2.61 Heat Deflector Shield, Exhaust

Increased standards for emission have caused most exhaust temperatures to increase. To keep the exhaust heat from adversely affecting anything stored in the body, a deflector shield shall be provided to aid in dissipating the heat.

Comply with Section 2.61: YES_____NO_____

Bidder Response Section 2.61:

2.62 Transmission

The drive train shall include an Allison model EVS 4000 torque converting, automatic transmission which shall include electronic controls. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing. The transmission shall include two (2) internal oil filters which shall offer Castrol TranSynd™ synthetic TES 295 transmission fluid which shall be utilized in the lubrication of the EVS transmission. An electronic oil level sensor shall be included with the readout located in the shift selector.

The transmission gear ratios shall be:

a. 1st 3.51:1
b. 2nd 1.91:1
c. 3rd 1.43:1
d. 4th 1.00:1
e. 5th 0.74:1
f. 6th 0.64:1 (if applicable)
g. Rev 4.80:1

Comply with Section 2.62: YES_____NO_____

Bidder Response Section 2.62:

2.63 Transmission Mode Programming

The transmission, upon start-up, will select a six (6) speed operation without the need to press the mode button.

Comply with Section 2.63: YES_____NO_____

Bidder Response Section 2.63:

2.64 Transmission Feature Programming

The Allison Gen V-E transmission EVS group package number 127 shall contain the 227-vocational package in consideration of the duty of this apparatus for rescue. This package shall incorporate an automatic neutral with selector override. This feature commands the transmission to neutral when the park brake is applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.

A transmission interface connector shall be provided in the cab. This package shall contain the following input/output circuits to the transmission control module. The Gen V-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance. Function ID Description Wire assignment:

a. Inputs
b. C PTO Request 143 F Aux. Function Range Inhibit (Special) 101/142
c. Outputs
d. G PTO Enable Output (See Input Function C) 130
e. S Neutral Indicator for PTO 145
f. Signal Return 103

Comply with Section 2.64: YES_____NO_____

Bidder Response Section 2.64:

2.65 Electronic Transmission Oil Level Indicator

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

Comply with Section 2.65: YES_____NO_____

Bidder Response Section 2.65:

2.66 Transmission Shift Selector

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

Comply with Section 2.66: YES_____NO_____

Bidder Response Section 2.66:

2.67 Transmission Pre-Select with Auxiliary Brake

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

Comply with Section 2.67: YES_____NO_____

Bidder Response Section 2.67

2.68 Transmission Cooling System

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

Comply with Section 2.68: YES_____NO_____

Bidder Response Section 2.68:

2.69 Transmission Drain Plug

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

Comply with Section 2.69: YES_____NO_____

Bidder Response Section 2.69:

2.70 Power Take Off (PTO)

A ten (10) bolt standard duty PTO shall be installed on the transmission. Installation shall include mounting of the PTO and wiring the unit with a control switch if required for the PTO model.

Comply with Section 2.70: YES_____NO_____

Bidder Response Section 2.70:

2.71 PTO Model

A ten (10) bolt Muncie model CS41-A1007-H3CX heavy duty transmission driven PTO shall be installed. The clutched shift PTO is designed specifically for the Allison world transmission and features a maximum torque rating of 545 lb. ft.

Comply with Section 2.71: YES_____NO_____

Bidder Response Section 2.71:

2.72 PTO Location

The transmission shall have two (2) power take off (PTO) mounting locations.

Comply with Section 2.72: YES_____NO_____

Bidder Response Section 2.72:

2.73 PTO Control

The power take off shall be controlled by the transmission. The power take off shall be activated by a locking on/off rocker switch which contains an integral light which shall illuminate upon a positive engagement of the power take off. This switch shall be located on dash. Required operating conditions for enabling this function are:

a. Throttle position is low
b. Engine speed is within customer specified constant limits
c. Transmission output speed is within customer specified constant limits
d. Park brake set

Comply with Section 2.73 YES_____NO_____

Bidder Response Section 2.73:

2.74 Driveline

All drivelines shall be heavy duty metal tube and equipped with Spicer 1810 series universal joints. The shafts shall be dynamically balanced prior to installation to alleviate future vibration. In areas of the driveline where a slip shaft is required, the splined slip joint shall be coated with Glide Coat®.

Comply with Section 2.74 YES_____NO_____

Bidder Response Section 2.74:

2.75 Driveline Retarder

A Telma electromagnetic driveline retarder shall be focal mounted on the rear axle to act as an auxiliary braking system.

Comply with Section 2.75 YES_____NO_____

Bidder Response Section 2.75:

2.76 Driveline Retarder Control

There shall be four (4) stages of activation for the driveline retarder. The first stage shall be 25% activation, the second stage shall be 50% activation, the third stage shall be 75% activation and the fourth stage shall be 100% activation. The stages of retardation shall work off pressure applied to the service brake. The driveline retarder shall be controlled by an On/Off switch located on the dash. There shall be an auxiliary drive line retarder lever controller mounted on the dash mounted next to the ON/OFF switch. The auxiliary lever shall activate the drive line retarder in lieu of applied service brake. There shall be an indicator light mounted on the instrument panel. The indicator light shall indicate the four (4) stages of activation. The driveline retarder shall disengage in pump mode or during an ABS event. A positive activation of the driveline retarder shall activate the brake lights.

Comply with Section 2.76 YES_____NO_____

Bidder Response Section 2.76:

2.77 Fuel Filter/Water Separator

The fuel system shall have a Racor S3238 fuel filter/water separator as a primary filter. The fuel filter shall have a drain valve and a see-through cover to allow visual inspection of fuel and filter condition. The Racor S3238 shall be a 10-micron filter capable of handling a maximum flow rate of 150 gallons per hour. A secondary fuel filter shall be included as approved by the engine manufacturer. An instrument panel lamp and audible alarm which indicates when water is present in the fuel-water separator shall also be included.

Comply with Section 2.77 YES_____NO_____

Bidder Response Section 2.77:

2.78 Fuel Lines

The fuel system supply and return lines installed from the fuel tank to the engine shall be black textile braided lines which are reinforced with braided high tensile steel wire. The fuel lines shall be connected with reusable steel fittings.

Comply with Section 2.78 YES_____NO_____

Bidder Response Section 2.78:

2.79 Electric Fuel Primer

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

Comply with Section 2.79 YES_____NO_____

Bidder Response Section 2.79:

2.80 Fuel Cooler

An aluminum cross flow air to fuel cooler shall be provided to lower fuel temperature allowing the vehicle to operate at higher ambient temperatures. The fuel shall not exceed a temperature of 140 degrees with the engine running at an ambient air temperature of 115 degrees.

Comply with Section 2.80 YES_____NO_____

Bidder Response Section 2.80:

2.81 Fuel Tank

The fuel tank shall have a capacity of seventy (70) gallons.

Comply with Section 2.81 YES_____NO_____

Bidder Response Section 2.81:

2.82 Fuel Tank Material and Finish

The fuel tank shall be constructed of 12-gauge aluminized steel. The exterior of the tank shall be powder coated black and then painted to match the frame color. All powder coatings, primers and paint shall be compatible with all metals, pretreatments and primers used.

Comply with Section 2.82 YES_____NO_____

Bidder Response Section 2.82:

2.83 Fuel Tank Strap Material

The fuel tank straps shall be constructed of ASTM A-36 steel.

Comply with Section 2.83 YES_____NO_____

Bidder Response Section 2.83:

2.84 Fuel Tank Fill Port

The fuel tank fill ports shall be in-line with the left and right side.

Comply with Section 2.84 YES_____NO_____

Bidder Response Section 2.84:

2.85 Fuel Tank Serviceability Provisions

The chassis fuel lines shall have additional length provided so the tank can be easily lowered and removed for service purposes. The additional 8.00 feet of length shall be located above the fuel tank and shall be coiled and secured. The fuel line fittings shall be pointed towards the right side (curbside) of the chassis. Fuel level sending units shall be readily accessible for easy removal without removing the fuel tank or cutting holes in the body. An easily removable access panel is acceptable.

Comply with Section 2.85 YES_____NO_____

Bidder Response Section 2.85:

2.86 Fuel Tank Drain Plug

A 0.5 inch NPT drain plug shall be centered in the bottom of the fuel tank.

Comply with Section 2.86 YES_____NO_____

Bidder Response Section 2.86:

2.87 Front Wheel Bearing Lubrication

The front axle wheel bearings shall be lubricated with oil. The oil level can be visually checked via clear inspection windows in the front axle hubs.

Comply with Section 2.87 YES_____NO_____

Bidder Response Section 2.87:

2.88 Front Shock Absorbers

Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the front suspension system. The shocks shall be a mono tubular design and fabricated using a special extrusion method, utilizing a single blank of steel without a welded seam, achieving an extremely tight peak-to-valley tolerance and maintains consistent wall thickness. The mono tubular design shall provide superior strength while maximizing heat dissipation and shock life. The ride afforded through the use of a gas shock is more consistent and shall not deteriorate with heat, the same way a conventional oil filled hydraulic shock would. The Bilstein front shocks shall include a digressive working piston assembly allowing independent tuning of the compression and rebound damping forces to provide optimum ride and comfort without compromise. The working piston design shall feature fewer parts than most conventional twin tube and "road sensing" shock designs and shall contribute to the durability and long life of the Bilstein shock absorbers. Proposals offering the use of conventional twin tube or "road sensing" designed shocks shall not be considered.

Comply with Section 2.88 YES_____NO_____

Bidder Response Section 2.88:

2.89 Front Suspension

The front suspension shall include a nine (9) leaf spring pack in which the longest leaf measures 54.00-inch-long and 4.00 inches wide and shall include a military double wrapped front and rear eye. Both spring eyes shall have a case hardened threaded bushing installed with lubrication counter bore and lubrication land off cross bore with grease fitting. The spring capacity shall be rated at 21,500 pounds.

Comply with Section 2.89 YES_____NO_____

Bidder Response Section 2.89:

2.90 Front End Torque

The front suspension shall include a nine (9) leaf spring pack in which the longest leaf measures 54.00-inch-long and 4.00 inches wide and shall include a military double wrapped front and rear eye. Both spring eyes shall have a case hardened threaded bushing installed with lubrication counter bore and lubrication land off cross bore with grease fitting. The spring capacity shall be rated at 21,500 pounds.

Comply with Section 2.90 YES_____NO_____

Bidder Response Section 2.90:

2.91 Steering Column/Wheel

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

Comply with Section 2.91 YES_____NO_____

Bidder Response Section 2.91:

2.92 Electronic Power Steering Fluid Level Indicator

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

Comply with Section 2.92 YES_____NO_____

Bidder Response Section 2.92:

2.93 Power Steering Pump

The hydraulic power steering pump shall be a Vickers V20F and shall be gear driven from the engine. The pump shall be a fixed displacement vane type. The power steering system shall include an oil to air passive cooler.

Comply with Section 2.93 YES_____NO_____

Bidder Response Section 2.93:

2.94 Tiller Steering Provisions

The chassis shall include an additional power steering pump and reservoir which is necessary with a vehicle designed for a tiller application. The pump shall be a three (3) line type with a seven (7) GPM flow control and a 2000 PSI pressure relief valve. The power steering pump shall be a type which is designed to be driven by a PTO. The body manufacturer shall be responsible for the design, installation, plumbing, and validation of the tiller cab steering system.

Comply with Section 2.94 YES_____NO_____

Bidder Response Section 2.94:

2.95 Front Axle Cramp Angle

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

Comply with Section 2.95 YES_____NO_____

Bidder Response Section 2.95:

2.96 Power Steering Gear

The power steering gear shall be a TRW model TAS 85 with an assist cylinder.

Comply with Section 2.96 YES_____NO_____

Bidder Response Section 2.96:

2.97 Chassis Alignment

The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer.

Comply with Section 2.97 YES_____NO_____

Bidder Response Section 2.97:

2.98 Rear Axle Differential Lubrication

The rear axle differential shall be lubricated with oil.

Comply with Section 2.98 YES____ NO____

Bidder Response Section 2.98:

2.99 Rear Wheel Bearing Lubrication

The rear axle wheel bearings shall be lubricated with oil.

Comply with Section 2.99 YES____ NO____

Bidder Response Section 2.99:

2.100 Vehicle Top Speed

The top speed of the vehicle shall meet NFPA 1901 requirements at governed engine RPM.

Comply with Section 2.100 YES____ NO____

Bidder Response Section 2.100:

2.101 Rear Suspension

The single rear axle shall feature a heavy-duty air suspension with a single optimized air spring mounted to a fabricated load beam trailing arm on each side with a single fixed transverse torque rod. Axle alignment is maintained using eccentric bolts at each frame bracket. Dual air height control valves shall be installed to ensure equal frame height on both sides of the vehicle regardless of the load. The rear suspension capacity shall be rated equivalent to the axle rating.

Comply with Section 2.101 YES____ NO____

Bidder Response Section 2.101:

2.102 Rear Shock Absorbers

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

Comply with Section 2.102 YES____ NO____

Bidder Response Section 2.102:

2.103 Front Tire / Trailer Steer Tire

The front and rear trailer steer tires shall be Continental 425 / 65R22.5 L HTR2.

Comply with Section 2.103 YES____ NO____

Bidder Response Section 2.103:

2.104 Rear Drive Tire

The rear drive tires shall be Continental 315 / 80R225 L HSC1.

Comply with Section 2.104 YES____ NO____

Bidder Response Section 2.104:

2.105 Rear Axle Ratio

The rear axle ratio shall be 6.14:1.

Comply with Section 2.105 YES_____NO_____

Bidder Response Section 2.105:

2.106 Tire Pressure Equalization System

There shall be a Crossfire dual tire equalization system provided on both sets of dual tires on the rear axle. The Crossfire pressure system shall equalize and monitor tire pressure through the valve which is mounted between the dual tires. This shall bolt easily to the drive axle end allowing air to flow freely from one tire to the other, maintaining equal tire pressure and load distribution. The Crossfire system shall maximize tire life, decrease rolling resistance for increased fuel mileage and improve stability braking and overall safety. The Crossfire dual tire equalization system shall be redeemed upon the vehicle manufacture's receipt of the voucher along with the vehicle in-service weight for each axle.

Comply with Section 2.106 YES_____NO_____

Bidder Response Section 2.106:

2.107 Tire Pressure Indicator

There shall be a voucher provided with the chassis for a pop up style tire pressure indicator at the front tire valve stem. The indicator shall provide visual indication of pressure in the specific tire. The tire pressure indicators shall be redeemed upon the vehicle manufacturer's receipt of the voucher for installation by the customer.

Comply with Section 2.107 YES_____NO_____

Bidder Response Section 2.107:

2.108 Front Wheel

The front wheels shall be Alcoa hub piloted, 22.50 inch X 12.25 inch LvL One™ polished aluminum wheels. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts. The wheels shall feature one-piece forged strength and shall include Alcoa's Dura-Bright® finish with XBR technology as an integral part of the wheel surface. Alcoa Dura-Bright® wheels keep their shine without polishing. Brake dust, grime and road debris are easily removed by simply cleaning the wheels with soap and water.

Comply with Section 2.108 YES_____NO_____

Bidder Response Section 2.108:

2.109 Rear Wheel

The rear wheels shall be Alcoa hub piloted, heavy duty, 22.50 inch X 9.00 inch LvL One™ polished aluminum wheels with Alcoa Dura-Bright® wheel treatment with XBR® technology as an integral part of the wheel. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.

Comply with Section 2.109 YES_____NO_____

Bidder Response Section 2.109:

2.110 Balance Wheels and Tires

All the wheels and tires, including any spare wheels and tire assemblies, shall be dynamically balanced.

Comply with Section 2.110 YES_____NO_____

Bidder Response Section 2.110:

2.111 Wheel Trim

The front wheels shall include stainless steel lug nut covers and stainless steel baby moons shipped loose with the chassis for installation by the apparatus builder. The baby moons shall have cutouts for oil seal viewing when applicable. The rear wheels shall include stainless steel lug nut covers and band mounted spring clip stainless steel high hats shipped loose with the chassis for installation by the apparatus builder. The lug nut covers, baby moons, and high hats shall be RealWheels® brand constructed of 304L grade, non-corrosive stainless steel with a mirror finish. Each wheel trim component shall meet D.O.T. certification.

Comply with Section 2.111 YES_____NO_____

Bidder Response Section 2.111:

2.112 Wheel Guards

The rear dual wheels shall include a plastic isolator approximately 0.04" installed between the inner and outer wheel hub to help prevent corrosion caused by metal to metal contact. There shall also be a plastic isolator between the axle hub and the wheels on both front and rear axles.

Comply with Section 2.112 YES_____NO_____

Bidder Response Section 2.112:

2.113 Rear Wheel Wells Tractor

The tiller tractor rear wheel well area shall be constructed of diamond tread plate overlays, forming a fender with a seamless appearance over the wheels. The fenders shall be fitted with bolt-in removable full circular inner liners in the wheel well area for ease of cleaning and maintenance. There shall be sufficient clearance provided in the wheel well to allow the use of tire chains when the apparatus is fully loaded.

2.113.1 **Rear Fenderettes**

Two (2) stainless steel fenderettes shall be installed at the outboard edge of the rear wheel well area, one on each side. The fenderettes shall be bolted to the apparatus body using nylon washers to space them slightly away from the body to reduce build-up of road grime. The fenderettes shall be constructed of stainless steel that has been polished to a high-quality finish.

Comply with Section 2.113 YES_____NO_____

Bidder Response Section 2.113:

2.114 Brake System

A rapid build-up air brake system shall be provided. All air reservoirs provided on the chassis shall be labeled for identification. The rear axle spring brakes shall automatically apply in any situation when the air pressure falls below 25 PSI and shall include a mechanical means for releasing the spring brakes when necessary. An audible alarm shall designate when the system air pressure is below 60 PSI. A dash mounted ABS lamp shall be provided to notify the driver of a system malfunction. The speedometer screen shall be capable of reporting all active defaults using PID/SID and FMI standards.

Comply with Section 2.114 YES_____NO_____

Bidder Response Section 2.114:

2.115 Front Brakes

The front brakes shall be Meritor EX225 Disc Plus disc brakes with 17.00 inch vented rotors.

Comply with Section 2.115 YES_____NO_____

Bidder Response Section 2.115:

2.116 Rear Brakes

The rear brakes shall be Meritor 16.50 inch X 8.63-inch S-cam drum type. The brakes shall feature a cast iron shoe.

Comply with Section 2.116 YES_____NO_____

Bidder Response Section 2.116:

2.117 Park Brake

Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical spring force. In addition to the mechanical rear brake engagement, the front service brakes will also engage via air pressure, providing additional braking capability. The air pressure to the front service brakes will be limited to 40 psi.

Comply with Section 2.117 YES_____NO_____

Bidder Response Section 2.117:

2.118 Park Brake Control

A Meritor-Wabco manual hand control push-pull style valve shall operate the parking brake. The parking brake actuation valve shall be mounted to the center of the engine tunnel with easy access for both the driver and officer positions. The park brake shall be protected as to prevent accidental release of the braking system.

Comply with Section 2.118 YES_____NO_____

Bidder Response Section 2.118:

2.119 Rear Brake Slack Adjuster

Haldex rear brake automatic slack adjusters shall be installed on the axle.

Comply with Section 2.119 YES_____NO_____

Bidder Response Section 2.119:

2.120 Air Dryer

The brake system shall include a Wabco System Saver 1200 air dryer with an integral heater with a Metri-Pack sealed connector.

Comply with Section 2.120 YES_____NO_____

Bidder Response Section 2.120:

2.121 Brake Chambers

The air brake chambers shall be as provided from the brake system manufacturer to meet stopping and holding requirements. Spring actuated chambers shall apply drive and tiller axle brakes for parking.

Comply with Section 2.121 YES_____NO_____

Bidder Response Section 2.121:

2.122 Air Compressor

The air compressor provided for the engine shall be a Wabco® SS318 single cylinder pass-through drive type compressor which shall be capable of producing 18.7 CFM at 1200 engine RPMs.

Comply with Section 2.122 YES_____NO_____

Bidder Response Section 2.122:

2.123 Air Governor

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

Comply with Section 2.123 YES_____NO_____

Bidder Response Section 2.123:

2.124 Moisture Ejectors

Manual pet-cock type drain valves shall be installed on all reservoirs of the air supply system.

Comply with Section 2.124 YES_____NO_____

Bidder Response Section 2.124:

2.125 Air Supply Lines

Manual pet-cock type drain valves shall be installed on all reservoirs of the air supply system.

Comply with Section 2.125 YES_____NO_____

Bidder Response Section 2.125:

2.126 Air Inlet Connection

An air connection for the shoreline air inlet shall be supplied.

2.126.1 **Air Inlet Location**

The air inlet shall be installed in the left-hand side lower front step in the forward position.

2.126.2 **Air Inlet/Outlet Fitting Type**

The air connector supplied shall be a 0.25-inch size Tru-Flate Interchange style manual connection which is compatible with Milton 'T' style, Myers 0.25-inch Automotive style and Parker 0.25 inch 10 Series connectors.

Comply with Section 2.126 YES_____NO_____

Bidder Response Section 2.126:

2.127 Trailer Air Brake Connection Package

The trailer air brake connection shall be accomplished via tractor connection points provided at the rear of the chassis.

Comply with Section 2.127 YES_____NO_____

Bidder Response Section 2.127:

2.128 Wheelbase

The chassis wheelbase shall measure 143.00 inches.

Comply with Section 2.128 YES_____NO_____

Bidder Response Section 2.128:

2.129 Rear Overhang

The chassis rear overhang shall be 54.00 inches.

Comply with Section 2.129 YES_____NO_____

Bidder Response Section 2.129:

2.130 Frame

The frame shall consist of triple side rails and cross members forming a ladder style frame. The side rails shall be formed in the shape of a "C" channel. The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request. Proposals offering warranties for frames not including cross members shall not be considered.

Comply with Section 2.130 YES_____NO_____

Bidder Response Section 2.130:

2.131 Frame Warranty

The frame and cross members shall carry a limited lifetime warranty to the original purchaser. The warranty period shall commence on the date the vehicle is placed in service by the user.

Comply with Section 2.131 YES_____NO_____

Bidder Response Section 2.131:

2.132 Rear Tow Device

Two (2) heavy duty painted tow eyes shall be installed extending rearward from the frame at the rear of the chassis. The tow eyes shall be fabricated from 0.75-inch-thick #1020 ASTM-36 hot rolled steel. The inside diameter of the tow eye shall be 2.00 inches and shall have a chamfered edge. The tow eyes shall be bolted one (1) on each side to the outside of the chassis frame with grade 8 bolts. The tow eyes shall be painted to match the chassis frame.

Comply with Section 2.132 YES_____NO_____

Bidder Response Section 2.132:

2.133 Frame Paint

The frame shall be powder coated black prior to any attachment of components. All powder coatings, primers and paint shall be compatible with all metals, pretreatments and primers used. The chassis under carriage consisting of frame, axles, driveline running gear, air tanks and other chassis mounted components shall be painted the primary/lower cab color. Paint shall be applied prior to airline and electrical wiring installation.

Comply with Section 2.133 YES_____NO_____

Bidder Response Section 2.133:

2.134 Front Bumper

A one piece, two (2) rib wrap-around style, polished stainless steel front bumper shall be provided. The material shall be 10 gauge 304 stainless steel, 12" high and 104.50 inches wide.

2.134.1 **Front Bumper Extension Length**
The front bumper shall be extended approximately 6.00 inches ahead of the cab.

2.134.2 **Front Bumper Apron**
The 6.00 inch extended front bumper shall include an apron constructed of 0.19-inch-thick embossed aluminum tread plate. The apron shall be installed between the bumper and the front face of the cab affixed using stainless steel bolts attaching the apron to the top bumper flange.

2.134.3 **Front Bumper Tow Eyes**
The bumper shall include two (2) chrome plated tow eyes shall be installed through the front bumper. The eyes shall be fabricated from 0.75-inch-thick #1020 ASTM-A36 hot rolled steel. The inside diameter of the eye shall be 2.00 inches and include a chamfered edge.

Comply with Section 2.134 YES_____NO_____

Bidder Response Section 2.134:

2.135 Air Horn

The chassis shall include two (2) Grover brand Stutter Tone air horns. One shall measure 24” long and one shall measure 15” long with a 6.00-inch round flare. The air horns shall be trumpet style with a chrome finish.

2.135.1 **Air Horn Location**
The air horns shall be recess mounted in the front bumper face on the left side of the bumper in the inboard and outboard positions relative to the left-hand frame rail.

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

Comply with Section 2.135 YES_____NO_____

Bidder Response Section 2.135:

2.136 Cab Height Adjustment

The cab shall include 0.75-inch-thick shims raising the cab to provide additional clearance under the cab.

Comply with Section 2.136 YES_____NO_____

Bidder Response Section 2.136:

2.137 Cab Tilt System

The entire cab shall be capable of tilting approximately 45-degrees to allow for easy maintenance of the engine and transmission. The cab tilt pump assembly shall be located on the right side of the chassis above the battery box. The electric-over-hydraulic lift system shall include an ignition interlock and red cab lock down indicator lamp on the tilt control which shall illuminate when holding the “Down” button to indicate safe road operation. It shall be necessary to activate the master battery switch and set the parking brake to tilt the cab. As a third precaution the ignition switch must be turned off to complete the cab tilt interlock safety circuit. Two (2) spring-loaded hydraulic hold down hooks located outboard of the frame shall be installed to hold the cab securely to the frame. Once the

hold-down hooks are set in place, it shall take the application of pressure from the hydraulic cab tilt lift pump to release the hooks. Two (2) cab tilt cylinders shall be provided with velocity fuses in each cylinder port. The cab tilt pivots shall be 1.90-inch ball and be anchored to frame brackets with 1.25-inch diameter studs. A steel safety channel assembly, painted safety yellow shall be installed on the right-side cab lift cylinder to prevent accidental cab lowering. The safety channel assembly shall fall over the lift cylinder when the cab is in the fully tilted position. A cable release system shall also be provided to retract the safety channel assembly from the lift cylinder to allow the lowering of the cab.

Comply with Section 2.137 YES_____NO_____

Bidder Response Section 2.137:

2.138 Cab Tilt Auxiliary Pump

A manual cab tilt pump module shall be attached to the cab tilt pump housing.

Comply with Section 2.138 YES_____NO_____

Bidder Response Section 2.138:

2.139 Cab Tilt Control Receptacle

The cab tilt control cable shall include a receptacle which shall be temporarily located on the right-hand chassis rail rear of the cab to provide a place to plug in the cab tilt remote control pendant. The tilt pump shall include 8.00 feet of cable with a six (6) pin Deutsch receptacle with a cap. The remote-control pendant shall include 20.00 feet of cable with a mating Deutsch connector. The remote-control pendant shall be shipped loose with the chassis.

Comply with Section 2.139 YES_____NO_____

Bidder Response Section 2.139:

2.140 Cab Windshield

The cab windshield shall have a surface area of approximately 2969.88 square inches and be of a two (2) piece wraparound design for maximum visibility. The glass utilized for the windshield shall include standard automotive tint. The left and right windshield shall be fully interchangeable thereby minimizing stocking and replacement costs. Each windshield shall be installed using black self-locking window rubber.

Comply with Section 2.140 YES_____NO_____

Bidder Response Section 2.140:

2.141 Glass Front Door

The front cab doors shall include a window which is approximately 27.00 inches in width X 26.00 inches in height. These windows shall have the capability to roll down completely into the door housing. This shall be accomplished electronically utilizing a push button on the inside of the door. The driver side door shall have electronic controls for all electronically controlled windows in the cab. A reinforced window regulator assembly shall be provided for severe duty use. There shall be an irregular shaped fixed window which shall measure approximately 2.50 inches wide at the top, 8.00 inches wide at the bottom X 26.00 inches in height, more commonly known as "cozy glass" ahead of the front door roll down windows. The windows shall be mounted within the frame of the front doors trimmed with a black anodized ring on the exterior.

2.141.1 **Glass Tint Front Door**

The windows located in the left and right front doors shall have a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Comply with Section 2.141 YES_____NO_____

Bidder Response Section 2.141:

2.142 Glass Rear Door Right Hand

The rear right hand side door shall include a window which is approximately 27.00 inches in width X 26.00 inches in height. This window shall roll up and down electronically utilizing a push button on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

2.142.1 **Glass Tint Rear Door Right Hand**

The window located in the right-hand side rear window shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

Comply with Section 2.142 YES_____NO_____

Bidder Response Section 2.142:

2.143 Glass Rear Door Left Hand

The rear left hand side door shall include a window which is approximately 27.00 inches in width X 26.00 inches in height. This window shall roll up and down electronically utilizing a push button on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

2.143.1 **Glass Tint Rear Door Left Hand**

The window located in the left-hand side rear door shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

Comply with Section 2.143 YES_____NO_____

Bidder Response Section 2.143:

2.144 Glass Side Mid Right Hand

The cab shall include a window on the right side behind the front and ahead of the crew doors which shall measure approximately 16.00 inches wide X 26.00 inches high. This window shall be capable of sliding vertically within this space and shall be rectangular. The window shall be mounted in a black anodized aluminum frame with lower drain slots. The glass utilized for the window shall include a green automotive tint unless otherwise noted.

2.144.1 **Glass Tint Side Mid Right Hand**

The window located on the right-hand side of the cab between the front and rear doors shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

Comply with Section 2.144 YES_____NO_____

Bidder Response Section 2.144:

2.145 Glass Side Mid Left Hand

The cab shall include a window on the left side behind the front door and ahead of the crew doors and above the wheel well which shall measure approximately 16.00 inches wide X 26.00 inches high. This window shall be capable of sliding vertically within this space and shall be rectangular. The window shall be mounted in a black anodized aluminum frame with lower drain slots. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

2.145.1 **Glass Tint Side Mid Left Hand**

The window located on the left-hand side of the cab between the front and rear doors shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

Comply with Section 2.145 YES_____NO_____

Bidder Response Section 2.145:

2.146 Climate Control

A ceiling mounted combination defroster and cabin heating and air conditioning system shall be located above the engine tunnel area. The system covers and plenums shall be of severe duty design made of aluminum which shall be coated with a customer specified interior paint. The design of the system's covers shall provide quick access to washable air intake filters as well as easy access to other serviceable items. The air delivery plenums provide targeted airflow directly to the vehicle occupants. It shall be capable of reducing the interior cabin air temperature from 122˚ F (+/- 3˚ F) to 80˚ F in thirty minutes with 50% relative humidity and full solar load as described in SAE J2646. The system shall also provide heater pull up performance which meets or exceeds the performance requirements of SAE J1612 as well as defrost performance that meets or exceeds the performance requirements of SAE J381. A gravity drain system shall be provided that is capable of evacuating condensate from the vehicle while on a slope of up to a 13% grade in any direction. Any component which needs to be accessed to perform system troubleshooting shall be accessible by one person using basic hand tools. Regularly serviced items shall be replaceable by one person using basic hand tools.

2.146.1 **Climate Control Activation**

The heating, defrosting and air conditioning controls shall be located in the cab.

2.146.2 **HVAC Overhead Cover Paint**

The overhead HVAC cover shall be painted with a black texture finish.

2.146.3 **A/C Condenser Location**

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

2.146.4 **A/C Compressor**

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

2.146.5 **Auxiliary A/C Cab Ceiling/Roof**

A 110 volt Coleman Mach 8 Roughneck low profile high capacity air conditioning system shall be provided to cool the crew area of the cab. The system shall consist of one (1) 110-volt air conditioning roof mounted unit which shall be located above the crew area and offset left of center on the cab roof above the crew area. The cover of the air conditioning unit shall be painted the upper cab color. The system shall be pre-wired with enough cable for the body builder to connect to a 110-volt power source. The air conditioning system shall be wired to a transfer switch allowing for power supplied via shorepower and/or generator. The condensation drain line shall be installed as to not have water run down the front or sides of the cab.

Comply with Section 2.146 YES_____NO_____

Bidder Response Section 2.146:

2.147 Under Cab Insulation

The underside of the cab tunnel surrounding the engine shall be lined with multi-layer insulation, engineered for application inside diesel engine compartments. In addition, the insulation shall have a removable aluminum overlay installed to protect the insulation and assist in retaining the insulation tight against the engine tunnel surfaces. The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations.

Comply with Section 2.147 YES_____NO_____

Bidder Response Section 2.147:

2.148 Interior Trim

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

2.148.1 **Interior Trim Floor**

The floor of the cab shall be covered with a multi-layer mat consisting of 0.25-inch-thick sound absorbing closed cell foam with a 0.06-inch-thick non-slip vinyl surface with a pebble grain finish. The covering shall be held in place by a pressure sensitive adhesive and aluminum trim molding. All exposed seams shall be sealed with silicone caulk matching the color of the floor mat to reduce the chance of moisture and debris retention. The floor shall have an overlay of 3003-H22 aluminum embossed tread plate. The tread plate shall be held down with screws and aluminum trim molding.

2.148.2 **Interior Trim Rear Wall**

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

2.148.3 **Header Trim**

The cab interior shall feature header trim over the driver and officer dash constructed of 5052-H32 Marine Grade, 0.13-inch-thick aluminum.

2.148.4 **Center Dash Trim**

The main center dash area shall be constructed of 5052-H32 Marine Grade, 0.13-inch-thick aluminum plate. There shall be four (4) holes located on the top of the dash near each outer edge of the electrical access cover for ventilation.

2.148.5 **Trim Left Hand Dash**

The left-hand dash shall be constructed of 5052-H32 Marine Grade, 0.13-inch-thick aluminum plate for a perfect fit around the instrument panel. For increased occupant protection, the extreme duty left hand dash utilizes patent pending break away technology to reduce rigidity in the event of a frontal crash. The left-hand dash shall offer lower vertical surface area to the left and right of the steering column to accommodate control panels.

2.148.6 **Trim Right Hand Dash**

The left-hand dash shall be constructed of 5052-H32 Marine Grade, 0.13-inch-thick aluminum plate for a perfect fit around the instrument panel. For increased occupant protection, the extreme duty left hand dash utilizes patent pending break away technology to reduce rigidity in the event of a frontal crash. The left-hand dash shall offer lower vertical surface area to the left and right of the steering column to accommodate control panels.

Comply with Section 2.148 YES_____NO_____

Bidder Response Section 2.148:

2.149 Engine Tunnel Trim

The cab engine tunnel shall be covered with a multi-layer mat consisting of 0.25-inch closed cell foam with a 0.06-inch-thick non-slip vinyl surface with a pebble grain finish. The mat shall be held in place by pressure sensitive adhesive. The engine tunnel mat shall be trimmed with anodized aluminum stair nosing trim for an aesthetically pleasing appearance. The multi-layer mat on the lower side area of the engine tunnel at the driver and officer positions shall be provided with a brushed stainless steel kick plate. The top of each kick plate shall be even with the top of the seat risers. In addition, the multi-layer mat on the rear sloped face of the tunnel shall be covered with a brushed stainless steel overlay.

Comply with Section 2.149 YES_____NO_____

Bidder Response Section 2.149:

2.150 Power Point Dash Mount

The cab shall include two (2) 12-volt cigarette lighter type receptacles and two (2) USB charging receptacles in the dash to provide a power source for 12-volt electrical equipment. The receptacles shall be wired battery direct.

Comply with Section 2.150 YES_____NO_____

Bidder Response Section 2.150:

2.151 Auxiliary Power Point Engine Tunnel

The cab interior shall include two (2) 12-volt cigarette lighter type receptacles and two (2) USB charging receptacles to provide power sources for 12-volt electrical equipment. The receptacles shall be connected directly to the batteries. The receptacles shall be located on the rear of the engine tunnel near the top, one (1) near the left corner and one (1) near the right corner.

Comply with Section 2.151 YES_____NO_____

Bidder Response Section 2.151:

2.152 Step Trim

Each cab entry door shall include a three-step entry. The first step closest to the ground shall be constructed of 14 gauge 304 stainless steel with indented perforations. The perforations shall allow water and other debris to flow through rather than becoming trapped within the stepping surface. The stainless-steel material shall have a number 7 mirror finish. The lower step shall be mounted to a frame which is integral with the construction of the cab for rigidity and strength. The middle step shall be integral with the cab construction and shall be trimmed in 0.08-inch-thick 3003-H22 embossed aluminum tread plate.

Comply with Section 2.152 YES_____NO_____

Bidder Response Section 2.152:

2.153 Step Well Compartment

Provide a watertight removable storage compartment in the officer step well. The compartment shall be as large as possible, minimum dimensions 25" wide x 12" deep x 14" high. The dropdown door shall have a positive action, stainless steel recessed large D handle twist type single point cam latch, easily operable with a gloved hand. The horizontally hinged door shall be provided with a full length, heavy duty, stainless steel, piano type hinge and stainless steel pin. The hinge shall have a positive action. Pin shall be secured to prevent creeping.

Comply with Section 2.153 YES_____NO_____

Bidder Response Section 2.153:

2.154 Kick Panel Compartment

Provide a bottom hinged storage box in the officer kick panel, below the dash panel. The box shall be as large as possible and have large, stainless steel locking D ring handle or paddle latch with single point lock. The lock shall be 1250.

Comply with Section 2.154 YES_____NO_____

Bidder Response Section 2.154:

2.155 Step Trim Kickplate

The cab steps shall include a kick plate in the rise of each step. The risers shall be trimmed in 3003-H22 bright aluminum tread-plate which is 0.07 inch thick.

Comply with Section 2.155 YES_____NO_____

Bidder Response Section 2.155:

2.156 Interior Door Trim

The interior doors of the cab shall include two (2) piece stainless steel trim panels. The panel material shall consist of AISI 304, 13-gauge stainless steel. The panels shall feature a brushed finish. The 2-piece configuration shall allow for ease of access to interior door hardware and wiring. The interior door panels and all sheet metal attachments shall be fastened to door with lock coated screws. The panels shall provide for easy access to the interior of the door for servicing.

Comply with Section 2.156 YES_____NO_____

Bidder Response Section 2.156:

2.157 Cab Door Trim Reflective

The interior of each door shall include high visibility reflective tape. A white reflective tape shall be provided vertically along the outer rear edge of each cab. The lowest portion of each cab door skin shall include a reflective tape chevron with red and yellow stripes. The chevron tape shall measure 12.00 inches in height. The chevron tape shall match throughout the entire apparatus.

Comply with Section 2.157 YES_____NO_____

Bidder Response Section 2.157:

2.158 Interior Grab Handle "A" Pillar

There shall be two (2) rubber covered 11.00-inch grab handles installed inside the cab, one on each "A" post at the left and right door openings.

Comply with Section 2.158 YES_____NO_____

Bidder Response Section 2.158:

2.159 Foot Rest

The Officer position shall have a fold up tread plate foot rest mounted on the forward bulkhead wall.

Comply with Section 2.159 YES_____NO_____

Bidder Response Section 2.159:

2.160 Interior Grab Handle Front Door

Each front door shall include one (1) ergonomically contoured 9.00-inch cast aluminum handle mounted diagonally on the interior door panels. The handles shall feature a textured black powder coat finish to assist personnel entering and exiting the cab.

Comply with Section 2.160 YES_____NO_____

Bidder Response Section 2.160:

2.161 Interior Grab Handle Rear Door

Each rear door shall include one (1) ergonomically contoured 9.00-inch cast aluminum handle mounted diagonally on the interior door panels and one (1) horizontally mounted 9.00 inch cast aluminum handle. The handles shall feature a textured black powder coat finish to assist personnel entering and exiting the cab. Exact mounting locations to be determined at pre-con.

Comply with Section 2.161 YES_____NO_____

Bidder Response Section 2.161:

2.162 Interior Rear Wall Compartment

An enclosed cab area storage compartment shall be installed on the rear wall between the rear wall forward facing flip down seats. The frame shall measure approximately 36 inches wide X 55 inches high X 22.00 inches deep (exact measurements to be determined at pre-con). The frame shall be constructed of Marine Grade 5052-H32 0.19 inch thick aluminum plate. The box shall be painted with the same color as the remaining interior. The compartment will provide full front access via a roll up door and side access to the lower approximately 20" of the compartment on both sides via roll up doors. The compartment design will include Unistrut vertically mounted to accommodate the installation of shelves trays and other miscellaneous equipment. The compartment will be ducted to the HVAC system for cooling of sensitive equipment.

The compartment shall include a 12 volt / 120 VAC shorepower outlet wired to a transfer switch allowing for power supplied via shorepower and generator.

2.162.1 **EMS/Charging/Storage Roll-up Compartment Front Access**

There shall be one (1) access points to the charging storage area. The access point shall be covered by a roll-up door which measures approximately 34.00 inches in width X 53.00 inches in height.

EMS/Charging/Storage Roll-up Compartment Side Access

There shall be two (2) access points to the EMS storage area, one (1) on each side of the frame. Each access point shall be covered by a roll-up door or net enclosure which measures approximately 20.00 inches in width X 20.00 inches in height when open.

2.162.2 **EMS/Charging/Storage Roll-up Compartment Shelving**

Three (3) adjustable extruded aluminum shelves will be provided for the compartment.

Comply with Section 2.162 YES_____NO_____

Bidder Response Section 2.162:

2.163 Interior Rear Wall Compartment Interior Finish

The interior of the interior rear wall compartment shall have a DA sanded finish.

Comply with Section 2.163 YES_____NO_____

Bidder Response Section 2.163:

2.164 Interior Rear Wall Compartment Lighting

There shall be a minimum two (2) Sound Off Signal brand LED strip light installed to illuminate the interior compartment at the rear wall inside the crew area of the cab. The strip light shall provide efficient lighting to illuminate the entire compartment. The light shall be activated when the compartment doors are opened.

Comply with Section 2.164 YES_____NO_____

Bidder Response Section 2.164:

2.165 Interior Soft Trim Color

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

Comply with Section 2.165 YES_____NO_____

Bidder Response Section 2.165:

2.166 Interior Trim Sun Visor

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

Comply with Section 2.166 YES_____NO_____

Bidder Response Section 2.166:

2.167 Cab Paint Interior Door Trim

The inner door panel surfaces shall be painted with a black texture finish.

Comply with Section 2.167 YES_____NO_____

Bidder Response Section 2.167:

2.168 Header Trim Interior Paint

The metal surfaces in the header area shall be coated with a black texture finish**.**

Comply with Section 2.168 YES_____NO_____

Bidder Response Section 2.168:

2.169 Trim Center Dash Interior Paint

The entire center dash shall be coated with a black texture finish. Any accessory pods attached to the dash shall also be painted this color.

Comply with Section 2.169 YES_____NO_____

Bidder Response Section 2.169:

2.170 Trim Left Hand and Right Hand Dash Interior Paint

The left-hand and right-hand dash shall be painted with a black texture finish.

Comply with Section 2.170 YES_____NO_____

Bidder Response Section 2.170:

2.171 Switches Overhead Panel

The center dash panel shall include six (6) rocker switch positions in a single row configuration above the driver in the overhead panel. A rocker switch with a blank legend installed directly above shall be provided for any position

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

Comply with Section 2.171 YES_____NO_____

Bidder Response Section 2.171:

2.172 Switches Dash Panel

The dash panel shall include five (5) switches in a three (3) over two (2) staggered switch configuration. Two (2) rocker switches, one (1) headlight switch, one (1) windshield wiper/washer control switch and one (1) instrument lamp dimmer switch shall be provided. A rocker switch with a blank legend installed directly above shall be provided for any position not designated by a specific option. The non-designated switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have backlighting provided.

Comply with Section 2.172 YES_____NO_____

Bidder Response Section 2.172:

2.173 Seating

2.173.1 **Seat Belt Warning**

A Weldon seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide a visual warning indicator in the Vista display and control screen(s), an indicator light in the instrument panel, an indicator light in the switch panel, and an audible alarm. The warning system shall activate when any seat is occupied with a minimum of 60 pounds, the corresponding seat belt remains unfastened, and the park brake is released. The warning system shall also activate when any seat is occupied, the corresponding seat belt was fastened in an incorrect sequence, and the park brake is released. Once activated, the visual indicators and audible alarm shall remain active until all occupied seats have the seat belts fastened.

2.173.2 **Seat Color**

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

2.173.3 **Seat Driver**

The driver's seat shall be an USSC Valor G2A - R-Style back, ABTS seat with dual retractor 3-point seat belts. The seat shall include "Ready Reach" seatbelt extension. The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt, automatic retractor and buckle as an integral part of the seat assembly. The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 35.00 inches measured with the seat height adjusted to the lowest position of travel. This model of seat shall have successfully completed the static load tests set forth by FMVSS 207, 209, and 210 in effect at the time of manufacture. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. The materials used in construction of the seat shall also have successfully completed testing with regard to the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which dictates the allowable burning rate of materials in the occupant compartments of motor vehicles.

2.173.3.1 **Seat Back Driver**

The driver’s seat shall include an R-style seat back incorporating the all belts to seat feature (ABTS). The seat back shall feature a contoured head rest.The seat shall include "Ready Reach" seatbelt extension**.**

2.173.4 **Seat Mounting Driver**

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

2.173.5 **Seat Officer**

The officer's seat shall be an USSC Valor G2A - Dynamic back with a 95-degree back pitch, ABTS seat with dual retractor 3-point seat belts. The seat shall include "Ready Reach" seatbelt extension. The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt, automatic retractor and buckle as an integral part of the seat assembly. The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 35.00 inches measured with the seat height adjusted to the lowest position of travel. This model of seat shall have successfully completed the static load tests by FMVSS 207, 209, 210 and 302 in effect at the time of manufacture. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

2.173.5.1 **Seat Back Officer**

The officer's seat back shall be a dynamic back with a 95-degree pitch and include an IMMI brand SmartDock® Gen 2 hands-free self-contained breathing apparatus (SCBA) holder.

a. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles.
b. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.
c. The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob.
d. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA.
e. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention.
f. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.
g. The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.
h. The seat shall include "Ready Reach" seatbelt extension

2.173.6 **Seat Mounting Officer**

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

2.173.7 **Power Seat Wiring**

The power seat or seats installed in the cab shall be wired directly to battery power.

2.173.8 **Seat Belt Orientation Crew**

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

2.173.9 **Seat Rear Facing Outer Location**

The crew area shall include (2) seats in the REAR facing position which shall be USSC Valor seats dynamic back with a 95-degree back pitch. The seat shall feature a tapered and padded seat, and 20" cushion. The seat and cushion shall be "Flip and Hold" and compact in design for additional room and shall remain in the stored position until occupied. The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant. The seats shall include "Ready Reach" seatbelt extensions. The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.

This type of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as

specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

2.173.10 **Seat Back Rear Facing Outer**

The crew area seat backs shall be dynamic back with a 95-degree pitch and include an IMMI brand SmartDock® Gen 2 hands-free self-contained breathing apparatus (SCBA) holder.

a. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles.
b. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.
c. The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob.
d. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA.
e. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention.
f. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.
g. The seat back shall include a removable padded cover which shall be provided over the SCBA cavity. The seats shall include "Ready Reach" seatbelt extensions.

2.173.11 **Seat Forward Facing Outer Location**

The crew area shall include two (2) forward facing outboard seats, which include one (1) located next to the outer wall of the cab on the left side of the cab and one (1) located next to the outer wall on the right side of the cab. The seat shall be manufactured by Valor seats and incorporate a back pad mounted to the rear wall of the cab. Seats shall have 3-point dual retractor seat belts.

Comply with Section 2.173 YES_____NO_____

Bidder Response Section 2.173:

2.174 <u>Cab Front Under Seat Storage Access</u>

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

Comply with Section 2.174 YES_____NO_____

Bidder Response Section 2.174:

2.175 <u>Seat Compartment Door Finish</u>

All under seat storage compartment access doors shall have a black texture finish.

Comply with Section 2.175 YES_____NO_____

Bidder Response Section 2.175:

2.176 <u>Windshield Wiper System</u>

The cab shall include a dual arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers which shall be affixed to a radial wet arm. The system shall include a single motor which shall initiate the arm in which both the left hand and right hand windshield wipers are attached, initiating a

back and forth motion for each wiper. The wiper motor shall be activated by an intermittent wiper control located within easy reach of the driver's position. All windshield wipers shall turn off when the parking brakes are set.

Comply with Section 2.176 YES_____NO_____

Bidder Response Section 2.176:

2.177 Electronic Windshield Fluid Level Indicator

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

Comply with Section 2.177 YES_____NO_____

Bidder Response Section 2.177:

2.178 Cab Door Hardware

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with chrome plated finish and be in the vertical position. The interior exit door handles shall be flush paddle type with a black finish, which are incorporated into the upper door panel. All cab entry doors shall include locks which are keyed alike. The door locks shall be designed to prevent accidental lockout. The exterior pull handles shall include a scuff plate behind the handle constructed of polished stainless steel to help protect the cab finish.

Comply with Section 2.178 YES_____NO_____

Bidder Response Section 2.178:

2.179 Door Locks

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

Comply with Section 2.179 YES_____NO_____

Bidder Response Section 2.179:

2.180 Grab Handles

The cab shall include one (1) 18.00 inch 3-peice knurled, aluminum LED lit anti-slip assist handle with red reflective stipe at each cab access door. Handle shall be 1.25-inch diameter to enable non-slip assistance with a gloved hand. Light activation will be with the ground light circuit.

Comply with Section 2.180 YES_____NO_____

Bidder Response Section 2.180:

2.181 Auxiliary Grab Handles

There shall be an 18.00 inch 3-peice knurled, aluminum, anti-slip assist handle attached to the front fascia of the cab in the center below the windshield. The handle installation shall include steel reinforcement behind the front cab fascia.

Comply with Section 2.181 YES_____NO_____

Bidder Response Section 2.181:

2.182 Rearview Mirrors

Ramco model 6015-FFHR-750R bus style mirrors shall be provided. The mirror heads shall be polished cast aluminum and shall measure 9.75 inches wide X 13.00 inches high with an additional top mount convex assembly. The mirrors shall be mounted one (1) on each front cab corner radius below the windshield with 15.00-inch-long polished cast aluminum arms. The mirrors shall feature a remote controlled heated full flat glass and a top mounted remote controlled convex glass. The mirror control switches shall be located within easy reach of the driver. The mirrors shall be manufactured using the finest quality non-glare glass and shall feature a rigid mounting thereby reducing vibration. The mirrors shall be corrosion free under all weather conditions.

2.182.1 **Rearview Mirror Heat Switch**

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

Comply with Section 2.182 YES_____NO_____

Bidder Response Section 2.182:

2.183 Exterior Trim Rear Corner

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

Comply with Section 2.183 YES_____NO_____

Bidder Response Section 2.183:

2.184 Trim Roof

The rear of the cab roof shall include 3003-H22 bright aluminum embossed tread plate which is 0.08 inches thick. This plate shall be intended for reinforcement value and shall be 48.00 inches long starting from the rear edge of the roof forward and shall be the full width of the flat portion of the roof centered left to right. The tread plate shall be held in place using stainless steel fasteners and shall be sealed with silver silicone caulk around the perimeter of the tread plate and at each mounting screw.

Comply with Section 2.184 YES_____NO_____

Bidder Response Section 2.184:

2.185 Cab Fender

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. Each two-piece liner shall consist of an inner liner 16.00 inches wide made of vacuum formed ABS composite and an outer fenderette 3.50 inches wide made of 14 gauge 304 polished stainless steel.

Comply with Section 2.185 YES_____NO_____

Bidder Response Section 2.185:

2.186 Ignition

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

switch shall illuminate a green LED indicator light on the dash when the respective switch is placed in the "ON" position. The starter button shall only operate when both the master battery and ignition switches are in the "ON" position.

Comply with Section 2.186 YES_____NO_____

Bidder Response Section 2.186:

2.187 Instrument Panel

2.187.1 The fully hinged metal instrument panel shall be non-glare black. The panel shall be provided with a stainless-steel piano type hinge and quick release attachments for maintenance.

2.187.2 All instruments or gauges requiring pressure or vacuum lines shall have flexible connector hoses with enough slack to allow the panel to be hinged for maintenance.

2.187.3 Ends of flexible hoses leaving instruments shall be fastened to securely mounted connector fittings or bars.

2.187.4 Panel wiring shall be connected to a terminal strip.

2.187.5 Instrument panel, including gauge descriptions, shall be submitted to Riverside County Fire for approval prior to the start of manufacture.

2.187.6 The panel shall contain the following in addition to any instruments and indicators reflected herein:

a. Speedometer (Direct Data Bus)
b. Tachometer (Direct Data Bus)
c. Ammeter with yellow LED discharge indicator light.
d. Voltmeter with yellow LED low voltage indicator light. (Direct Data Bus)
e. Engine temperature gauge with high temperature buzzer and red LED indicator light and low coolant level indicator light. (Direct Data Bus)
f. Oil Pressure gauge with low pressure buzzer and red LED indicator light. (Direct Data Bus)
g. Air cleaner restriction gauge with indicator light.
h. Fuel gauge with yellow LED low fuel indictor light.
i. Fuel filter restriction light (yellow).
j. Transmission temperature gauge (measuring converter outlet temperature) and high temperature buzzer and red LED indicator light. (Direct Data Bus)
k. Primary and secondary air reservoir pressure gauges with low air pressure buzzer and red LED indicator lights. (Direct Data Bus)
l. Air application gauge (each axle).
m. Parking brake "ON" light.
n. Cab not latched indicator light.
o. DPF regeneration indicator light.
p. DEF fluid level gauge.

2.187.7 All instruments shall have SAE J1939 direct data bus interface. The instruments shall have black bezels, multi-color graphics, 270-degree pointer sweep, red LED backlighting, tip to hub illuminated pointers, return to zero feature and integral LED warning lights. Use of apparatus manufacturer's face plate is unacceptable.

2.187.8 All data bus instrument options, i.e., programming warning light colors and activation points, dial graphics and fonts, etc., shall be approved by the County at pre-construction meeting.

2.187.9 The engine and transmission temperature gauge graphics shall display the temperature in 10 degree increments.

2.187.10 The instruments shall have English graphics and displays only. Metric graphics or displays are unacceptable.

2.187.11 All warning lights shall either be integral in the gauge or adjacent to its corresponding gauge.

2.187.12 Provide separate, standard layout diagnostic/warning light bar with seven (7) digit odometer. Odometer to read with battery on, ignition off.

2.187.13 Separate sending units shall be provided for the instrument panel fuel gauge. Float-type sending units with moving parts unacceptable.
2.187.14 Low air buzzer shall sound different than low oil pressure and high temperature buzzers. Custom buzzer options and events to be approved by Riverside County Fire at pre-con.
2.187.15 All panel mounted data bus instruments, warning lights and buzzers shall be activated by a pushbutton test switch mounted convenient to the vehicle operator.
2.187.16 Provide a matching speedometer in the officer position overhead with direct data bus input.
2.187.17 Provide an audible and visual warning system to alert both the driver and tiller operator when the tractor and trailer approaches the maximum allowable "jackknife" angle.

Comply with Section 2.187 YES____ NO____

Bidder Response Section 2.187:

2.188 Audible Alarms

Air Filter Restriction; Cab Tilt Lock; Check Engine; Check Transmission; Open Door/Compartment; High Coolant Temperature; High or Low System Voltage; High Transmission Temperature; Low Air Pressure; Low Coolant Level; Low DEF Level; Low Engine Oil Pressure; Low Fuel; Seatbelt Indicator; Stop Engine; Water in Fuel Extended Left/Right Turn Signal On; ABS System Fault.

Comply with Section 2.188 YES____ NO____

Bidder Response Section 2.188:

2.189 Backlighting Color

The instrumentation gauges and the switch panel legends shall be backlit using red LED backlighting. There shall be a brightness adjustment located in the instrument panel.

Comply with Section 2.189 YES____ NO____

Bidder Response Section 2.189:

2.190 Auxiliary Speedometer

Auxiliary speedometer shall be integrated into the Vista digital display.

Comply with Section 2.190 YES____ NO____

Bidder Response Section 2.190:

2.191 Air Pressure Gauge Auxiliary Air Tank

The dash panel shall include an additional air pressure gauge for the auxiliary air tank.

Comply with Section 2.191 YES____ NO____

Bidder Response Section 2.191:

2.192 Cab Exterior Protection

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

Comply with Section 2.192 YES____ NO____

Bidder Response Section 2.192:

2.193 Fire Extinguisher

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

Comply with Section 2.193 YES____ NO____

Bidder Response Section 2.193:

2.194 Door Keys

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

Comply with Section 2.194 YES____ NO____

Bidder Response Section 2.192:

2.195 Warranty

The chassis manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom-built cab and chassis for a period of twenty-four (24) months, or the first 36,000 miles, whichever occurs first. The warranty period shall commence on the date the vehicle user places it into service.

Comply with Section 2.195 YES____ NO____

Bidder Response Section 2.195:

2.196 Chassis Operation Manual

There shall be one (1) Hard copy and two (2) digital copies of the chassis operation manual provided with the chassis. The digital data shall include a parts list specific to the chassis model. The digital copies shall be provided on thumb drives.

Comply with Section 2.196 YES____ NO____

Bidder Response Section 2.196:

2.197 Engine and Transmission Operation Manuals

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

a. (2) Hard copies of the Engine Operation and Maintenance manual with CD
b. (2) Digital copies of the Transmission Operator's manual (thumb drives)
c. (2) Digital copies of the Engine Owner's manual (thumb drives)

Comply with Section 2.197 YES____ NO____

Bidder Response Section 2.197:

2.198 Engine Service Manuals

There shall be two (2) printed hard copy sets of Cummins ISX 15 engine service reference manuals which shall be provided with the chassis.

Comply with Section 2.198 YES____ NO____

Bidder Response Section 2.198:

2.199 Transmission Service Manuals

There shall be one (1) printed hard copy set of Allison 4000 transmission service manuals included with the chassis.

Comply with Section 2.199 YES_____NO_____

Bidder Response Section 2.199:

2.200 Cab/Chassis As-Built Wiring Diagrams

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

Comply with Section 2.200 YES_____NO_____

Bidder Response Section 2.200:

2.201 Driveline Layout Confirmation

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

Comply with Section 2.201 YES_____NO_____

Bidder Response Section 2.201:

2.202 Overall Height

The overall height of the vehicle shall not exceed 147" (12’ 3”) from the ground. This measurement shall be taken with the tires properly inflated with the apparatus in the unloaded condition. The actual measurement shall be taken that highest point of the apparatus.

Comply with Section 2.202 YES_____NO_____

Bidder Response Section 2.202:

2.203 Overall Length

The overall length of the vehicle shall be approximately 672" (56’).

Comply with Section 2.203 YES_____NO_____

Bidder Response Section 2.203:

2.204 Chassis Wheel Base

The chassis wheel base shall be approximately 143" (11' 11”). The measurement shall be taken from the center of the tractor front axle to the center of the tractor drive axle.

Comply with Section 2.204 YES_____NO_____

Bidder Response Section 2.204:

2.205 Tiller Wheel Base

The tiller wheel base shall be approximately 345" (28' 9"). This measurement shall be taken from the center of the tractor drive axle to the center of the tiller axle.

Comply with Section 2.205 YES_____NO_____

Bidder Response Section 2.205:

2.206 Angle of Approach

The angle of approach shall be approximately 15 degrees.

Comply with Section 2.206 YES_____NO_____

Bidder Response Section 2.206:

2.207 Angle of Departure

The angle of departure shall be approximately 14 degrees.

Comply with Section 2.207 YES_____NO_____

Bidder Response Section 2.207:

2.208 Miscellaneous Equipment Allowance

The GAWR and the GCWR or GVWR of the chassis shall be adequate to carry the weight of the unequipped apparatus, with the tanks full, the specified hose load, unequipped personnel weight, ground ladders, and the miscellaneous equipment allowance of 10,000 pounds.

Comply with Section 2.208 YES_____NO_____

Bidder Response Section 2.208:

2.209 Hose Storage Compartment C1, Tiller Tractor

There shall be a hose storage compartment located behind the chassis cab on the tiller tractor. This compartment shall be designated as C1. The compartment shall have three fixed sides constructed of treadbrite material. In addition, the compartment shall have a lid that covers the top and front of the compartment. The compartment shall be able to hold 130' of 3" hose with 2 ½" couplings.

Comply with Section 2.209 YES_____NO_____

Bidder Response Section 2.209:

2.210 Compartment

2.210.1 **CL-1**

There shall be a compartment located behind the chassis cab on the left side of the tiller tractor. This compartment shall be designated as CL1 within these specifications and any ensuing paperwork or drawings after contract execution. It shall be equipped with a single, horizontally hinged lift up, treadbrite door. Door Opening shall be a minimum of 18" Wide x 24" High. The compartment shall have a minimum usable depth of 26".

2.210.2 **CL-2**

A compartment shall be located behind the chassis cab on the left side of the tiller tractor. This compartment shall be designated as CL2 within these specifications and any ensuing paperwork or drawings after contract execution. It shall be equipped with a single, vertically hinged swing out door. Door Opening - 26" Wide x 30" High. The compartment shall have a usable depth of 24". There shall be

one (1) Streamlight Model Fire Vulcan LED, with 12-volt vehicle charger, mounted inside the compartment. The light shall be orange in color. There shall be one (1) Zico Walkaway SCBA bracket mounted inside the compartment.

2.210.3 **CL-3**

A compartment shall be located behind the chassis cab on the left side of the tiller tractor . This compartment shall be designated as CL3. It shall be equipped with a single, vertically hinged swing out door. Door Opening -19" Wide x 13" High. The compartment shall have a usable depth of 12"

2.210.4 **CR-1**

There shall be a compartment located behind the chassis cab on the right side of the tiller tractor. This compartment shall be designated as CR1. It shall be equipped with a single, horizontally hinged lift up, treadbrite door. Door Opening shall be a minimum of 16" Wide x 23" High. The compartment shall have a minimum usable depth of 26".

2.210.5 **CR-2**

A compartment shall be located behind the chassis cab on the right side of the tiller tractor. This compartment shall be designated as CR2. It shall be equipped with a single, vertically hinged swing out door. Door Opening shall be a minimum of 26" Wide x 30" High. The compartment shall have a minimum usable depth of 24". There shall be one (1) Streamlight Model Fire Vulcan LED, with 12-volt vehicle charger, mounted inside the compartment. The light shall be orange in color. There shall be one (1) Zico Walkaway SCBA bracket mounted inside the compartment.

2.210.6 **CR-3**

A compartment shall be located behind the chassis cab on the right side of the tiller tractor. This compartment shall be designated as CR3. It shall be equipped with a single, vertically hinged swing out door. Door Opening minimum of 19" Wide x 13" High. The compartment shall have a minimum usable depth of 12".

Comply with Section 2.210 YES_____NO_____

Bidder Response Section 2.210:

2.211 <u>Steps, Turntable Access, Tiller, Left</u>

For access to the turntable from the left side of the apparatus, one set of steps shall be furnished behind the tiller tractor cab. The left side tiller tractor compartments shall be an integral part of the turntable access steps. The steps shall be constructed of aluminum grip-strut. The steps shall have a maximum stepping height which shall not exceed 18" with the exception of the ground to the first step which shall not exceed NFPA standard of 24". Steps shall be illuminated for night time operation. The lights shall be activated by the parking brake. To aid in ascending and descending the access steps, handrails shall be provided in appropriate locations.

Comply with Section 2.211 YES_____NO_____

Bidder Response Section 2.211:

2.212 <u>Steps, Turntable Access, Tiller, Right</u>

For access to the turntable from the right side of the apparatus, one set of steps shall be furnished behind the tiller tractor cab. The right-side tiller tractor compartments shall be an integral part of the turntable access steps. The steps shall be constructed of aluminum grip-strut. The steps shall have a maximum stepping height which shall not exceed 18" with the exception of the ground to the first step which shall not exceed NFPA standard of 24". Steps shall be illuminated for night time operation. The lights shall be activated by the parking brake. To aid in ascending and descending the access steps, handrails shall be provided in appropriate locations.

Comply with Section 2.212 YES_____NO_____

Bidder Response Section 2.212:

2.213 Hand Lanterns

There shall be two (2) Streamlight Model Fire Vulcan LED, with 12 volt vehicle chargers, mounted inside the cab. The lights shall be orange in color.

Comply with Section 2.213 YES_____NO_____

Bidder Response Section 2.213:

2.214 Cab Lift Hooks

The cab shall have two (2) removable swiveling hoist rings that allow the cab to be lifted with a mechanical hoist for service operations. These lifting points will be rated sufficiently to lift the weight of the cab and all of the contents and hold in place indefinitely. The swiveling hoist rings shall be easily removable and attached by service personnel. Cab lifting points shall integral to the cabs structure and allow the mounting of an appropriately weight rated commercially available swiveling hoist ring. Hoist ring locations shall be in the upper corner areas of the rear cab walls, both right and left sides. The exterior of the cab wall in the areas of the swiveling hoist rings shall be protected by a stainless-steel plate sized appropriately to provide protection from paint damage while lifting system is in use. The hoist ring bolt hole shall be closed by a stainless steel allen pan bolt that is threaded into a grade 8 nut that is built into the cab structure. These bolts shall be sealed to prevent any water intrusion into the cab. Access to the hoist ring mount in the interior of the cab shall be designed in. Interior access shall be covered, but easily accessible. A minimum of two swiveling hoist rings shall be provided loose with the apparatus.

Comply with Section 2.214 YES_____NO_____

Bidder Response Section 2.214:

2.215 Auxiliary Air Compressor

A Kussmaul Auto Pump 120V air compressor shall be supplied. The air compressor shall be temporarily installed behind the officer's seat with 4.00-foot additional hose length. The air compressor shall be plumbed to the air brake system to maintain air pressure.

Comply with Section 2.215 YES_____NO_____

Bidder Response Section 2.215:

2.216 Mechanics Override Switch

A mechanics override switch shall be located in the tractor cab, below the dash, on the driver's side, in an accessible but inconspicuous location. The switch shall disengage the tiller power steering pump so the apparatus may be driven as a regular tractor trailer.

Comply with Section 2.216 YES_____NO_____

Bidder Response Section 2.216:

2.217 Electric Cord Reels

There shall be two (2) Hannay 120-volt electric rewind cord reels, model ECR1616-17-18 installed on the apparatus with a push button labeled REEL REWIND installed for 12 volt rewinding for each cord reel. The reel shall be equipped with 200’ of yellow STW Seoprene 105 degree Celsius 10/3 wire installed with a cable stop to prevent damage to cable fittings. Rollers shall be supplied to prevent damage to the electrical cable if pulled in any direction.

a. One cord reel shall be in CL1 and one in CR1 on the tiller chassis body.

Comply with Section 2.217 YES_____NO_____

Bidder Response Section 2.217:

2.218 Cord Reel Junction Box

There shall be two (2) Circle D model PF51G-3 electrical junction box, equipped with four (4) electrical receptacles, provided and hard wired to the cord reel. The receptacles shall be enclosed in a UL listed, NEMA Type 3R cast aluminum box with aluminum finish and NFPA required indicator light.

Comply with Section 2.218 YES_____NO_____

Bidder Response Section 2.218:

2.219 Receptacle Junction Box

There shall be eight (8) Circle D, NEMA L5-15R DPLX, duplex twist lock type receptacles installed in the junction box. The receptacle shall be rated at 15 amps and 120 volts. Receptacles shall be installed in the following locations of the junction box: 1, 2, 3, 4.

Comply with Section 2.219 YES_____NO_____

Bidder Response Section 2.219:

2.220 Volt Twist Lock, Single Receptacle

There shall be two (2), single outlet boxes. The box shall contain one (1) NEMA L5-15, 120-volt 15 ampere rating twist lock type receptacles wired to the generator. The receptacles shall have spring loaded weather resistant covers. The receptacles shall be located on the rear of the tiller body one on the left and one on the right.

Comply with Section 2.220 YES_____NO_____

Bidder Response Section 2.220:

2.221 Generator

a. A current year Onan model, hydraulic driven generator shall be installed on the apparatus. The generator shall be rated at a minimum of 10,000 watts at 120/240 volts. Current frequency shall be stable at 60 hertz.
b. The generator shall be a modular unit, housed in stainless steel with acoustic material added for maximum sound dampening. The modular generator shall consist of a hydraulic motor, generator, blower, cooler, and all other necessary components.
c. For ease of maintenance, there shall be accessibility for the oil reservoir and all filters contained within the generator.

Comply with Section 2.221 YES_____NO_____

Bidder Response Section 2.221:

2.222 Manufacturing Labels

A permanent plate shall be mounted in the driver's compartment specifying the quantity and type of the following fluids that may be used in the apparatus for normal maintenance. Where a fluid is not applicable to the unit, the plate shall be marked N/A to inform the service technician who may not be familiar with the apparatus.

a. Engine oil
b. Engine coolant

c. Transmission fluid
d. Pump transmission fluid
e. Pump primer fluid
f. Drive axle fluid
g. Air conditioning refrigerant
h. Power steering fluid
i. Cab tilt mechanism fluid
j. Transfer case fluid
k. Equipment rack fluid
l. Air compressor system lubricant
m. Generator system lubricant
n. Front tires air pressure
o. Rear tires air pressure

2.222.1 A permanent plate shall be affixed in the driver's area that states the maximum number of personnel allowed to ride on the apparatus at any time.

2.222.2 A sign shall be affixed in the chassis cab, in plain sight of the driver that states the overall travel height, overall length, and gross GVWR of the apparatus.

2.222.3 All other appropriate label to ensure safe operation of the apparatus shall be permanently affixed in conspicuous locations.

Comply with Section 2.222 YES_____NO_____

Bidder Response Section 2.222:

End of Section II – Cab & Chassis

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SECTION III – AERIAL BODY & TRAILER

3.1 Trailer Structure and Components

The tiller trailer frame shall be a gooseneck design. The frame of the trailer shall be constructed of a welded "C" channel design incorporating a forward section for the aerial turntable and a rearward section for the body and tiller. The gooseneck area frame shall have a section modulus of a minimum of 452. inches cubed and a RBM of 13,560,000 inch pounds.

3.1.1 There shall be two (2) hard point anchors installed on each side below the turntable.

3.1.2 The front goose neck section of the trailer frame shall incorporate a welded torque box to support the ladder turntable and the rear section of the trailer frame shall support the body and tiller. The front goose neck section shall be constructed with an actual minimum RBM rating of 17,500,000 inch pounds and the rear section shall be constructed with an actual minimum RBM rating of 14,450,000 inch pounds. The square corner method shall not be used for calculating the RBM.

3.1.3 There shall be two (2) Class IV rated receivers mounted on each side of the trailer body, directly beneath the compartments. These are in addition to the anchors below the turntable.

3.1.4 The fifth wheel shall have a minimum 1.25" diameter ball monorace bearing, 3.88" x 34" diameter, with the mounting plate bolted to the tractor. There shall be three grease zerks spaced at 120° intervals provided.

3.1.5 All grease zerks shall be readily accessible for ease of maintenance. The longitudinal pivot point mounting shall utilize two, 2" diameter steel pins. A bronze bushing with full width and circumference grease grove shall be utilized with this installation.

3.1.6 The trailer axle shall be a Meritor model MFS20 with a weight rating of 23,000 lbs. The trailer axle shall have a DSP Ride Tech maintenance free suspension to compensate for vehicle load changes. Deflection shall be limited by a three stage urethane spring. Two double acting shock absorbers, capable of dampening the shock of the load carried, shall be supplied per axle.

3.1.7 The tiller axle shall be equipped with Meritor, 16.5" x 6" S-cam type brakes with automatic slack adjusters. Spring brakes are necessary on both the rear tractor and trailer axles to hold the vehicle on a 32 percent grade. A Meritor Wabco anti-lock braking system shall be installed on the Arvin Meritor axles. A dash mounted warning light shall be provided in the tractor cab to notify the driver of a system malfunction.

3.1.8 The trailer brakes shall be plumbed to a brake release control valve in the tractor cab within easy reach of the driver and officer seat position and shall be labeled as to its function. An "ON" indicator light shall be installed in the tractor cab dash adjacent to the control.

3.1.9 The trailer tiller axle 22.5 x 12.25, hub piloted wheels shall be Alcoa polished. The wheels shall be 120 psi rated. Tires shall be Continental steel belted radials 425/65R22.5 “L” HTR2.

3.1.10 A TRW TAS-85 hydraulic power assist steering gear with a hydraulic power assist cylinder shall be provided.

3.1.11 A lock bar and a tiller power steering pump override switch shall be provided so the apparatus may be driven as a regular truck and trailer.

3.1.12 Provisions shall be provided at the front and rear for easy lubrication, service and repair.

Comply with Section 3.1: YES_____NO_____

Bidder Response Section 3.1:

3.2 Tiller Cab Structure and Components

A fully enclosed tiller cab that may be removed for repair in the event of cab damage shall be provided. The tiller cab shall have a maximum exterior width of 42” and a minimum interior floor to ceiling height of 55”. The lower 4” of the tiller cab shall have a polished stainless steel toe kick around the walk areas.

3.2.1 The tiller cab roof panel assembly shall have extruded hat section supports welded to the roof skin. The roof hat sections shall be joined to the cab roof rail section to complete the upper cab

skeletal structure. The completed roof panel rails shall provide a grid for maximum roof strength. The front wall shall be designed with a double wall construction to reduce the effects of exterior noise.

3.2.2 Instruments and warning lights shall be conveniently located in the operator area of the cab on one of two operator control panels. The panels shall be hinged for easy access to warning light connections. All instruments and warning lights shall be easily visible to the tiller driver.

3.2.3 The interior of the cab shall be gray Line-X. The color of any vinyl upholstery shall match the upholstery of the cab seats.

3.2.4 The tiller operator's seat shall be an USSC Valor G2A - R-Style back, ABTS seat with dual retractor 3-point seat belts. The seat shall include "Ready Reach" seatbelt extension.

3.2.5 The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt, automatic retractor and buckle as an integral part of the seat assembly.

3.2.6 The seat shall have a minimum of 37" from the seat H-point to the headliner. The female seat belt clasp shall extend up from the seat base 14" to be within easy reach of the occupant.

3.2.7 The tiller cab shall meet current NFPA standards for tiller cab roll over protection.

Comply with Section 3.2: YES_____NO_____

Bidder Response Section 3.2:

3.3 Doors

The tiller cab shall be provided with horizontal sliding doors on each side of the cab. The door shall open so as to provide unobstructed access to the tiller cab. The door when closed shall lock in place. An aluminum drip rail shall be installed above the door to prevent water from entering. The door shall be equipped with slide open tinted automotive safety type windows. The window shall provide maximum visibility for the tiller operator. Spray applied tint shall not be acceptable. The inside of the tiller cab doors shall be covered with gray line-X.

Comply with Section 3.3: YES_____NO_____

Bidder Response Section 3.3:

3.4 Rear Window

There shall be a rear window provided in the tiller cab that shall drop down to open. The window shall have automotive type tinted safety glass and shall provide maximum visibility for the tiller operator. Spray applied tint shall not be acceptable.

Comply with Section 3.4: YES_____NO_____

Bidder Response Section 3.4:

3.5 Windshield

3.5.1 The tiller cab shall not have windshield corner posts that inhibit the tiller operator's field of vision. The windshield shall be readily available and non-proprietary.

3.5.2 Provide a self-parking, electric windshield wiper motor. Two speed switches to be mounted in the tiller cab's overhead switch panel. The wiper motor shall have an access panel and be easily serviceable.

3.5.3 A windshield washer system shall be provided. The control switch to be mounted in the tiller cab's overhead switch panel. The windshield wipers shall turn off when the parking brake is set.

3.5.4 The windshield shall be large enough as to provide maximum visibility for the tiller operator.

Comply with Section 3.5: YES_____NO_____

Bidder Response Section 3.5:

3.6 Steering Column

There shall be a steering column with telescoping/tilt feature provided. The steering wheel shall be a minimum of 18 in diameter and shall align with the center of the tiller operators' seat. There shall be a high beam switch lever located on the right side of the steering column that shall activate the forward-facing tiller driving lights, and a blinker lever located on the left side of the steering column that shall activate the left and right turn tiller driving lights. All grease fittings shall be easily accessible.

Comply with Section 3.6: YES_____NO_____

Bidder Response Section 3.6:

3.7 Turn Indicator Lights

Amber turn signal indicator lights shall be mounted in the upper right and upper left corners of the tiller cab, and on the lower tiller cab control panel. The lights shall alert the tiller operator of the tractor driver's intent.

Comply with Section 3.7: YES_____NO_____

Bidder Response Section 3.7:

3.8 Transmission Selector Safety Switch

There shall be a pressure foot switch located on the tiller cab floor to the right of the steering column tied to the tractor transmission selector. The switch shall require a seated operator in the tiller cab to engage a foot switch before the tractor transmission can be shifted into gear. The switch shall need to be reset any time after the parking brake has been engaged. In addition there shall be a light in the tractor cab that when illuminated shall indicate to the driver that the tiller operator is not in position and the safety foot switch has not been depressed.

Comply with Section 3.8: YES_____NO_____

Bidder Response Section 3.8:

3.9 Buzzer Signaling System

There shall be a buzzer signaling system provided between the tractor cab and the tiller cab. The signaling system shall include an activation switch and buzzer located in the tractor cab. The buzzer shall be controlled by a foot switch located on the floor to the left of the tiller drivers steering column or by a switch located in the center of the steering wheel. A switch in the tractor cab located within reach of the driver shall allow the tractor operator to reply to the tiller operator's signal. The buzzer shall not use warning devices provided for low air, ignition, or any other components. Buzzers shall be audible when headsets are worn. The switch shall be labeled 1-Stop, 2-Go, and 3-Back-up.

Comply with Section 3.9: YES_____NO_____

Bidder Response Section 3.9:

3.10 Dimmer Switch

Provide a dimmer switch to control the tiller cabs overhead switch panel illumination. The dimmer switch shall be located in the overhead switch panel.

Comply with Section 3.10: YES_____NO_____

Bidder Response Section 3.10:

3.11 Tiller Cab Heating and Air Conditioning System

3.11.1 The venting for the heating and air conditioning system shall be designed to serve the functions of heating, cooling and defrosting the tiller cab.

3.11.2 The tiller cab shall be equipped with a 110-volt Coleman Mach 8 Roughneck low profile high capacity air conditioning system shall be provided to cool the crew area of the cab. The system shall consist of one (1) 110-volt air conditioning roof mounted unit. The cover of the air conditioning unit shall be painted the trailer body color. The system shall be pre-wired with enough cable for the body builder to connect to a 110-volt power source. The air conditioning system shall be wired to a transfer switch allowing for power supplied via shorepower and/or generator. All components including compressor, condenser and evaporator shall be mounted in a single sound shielded aluminum case. The system shall also include a heat strip. The system controls shall be in the tiller operators upper control panel. The keypad control shall feature a plastic housing, sealed membrane keypad and electronics with anticorrosion coating. The keypad shall have a large easy to read digital display that shall show temperature, set point, and fault code warnings.

Comply with Section 3.11: YES_____NO_____

Bidder Response Section 3.11:

3.12 Tiller Cab Rear Vents

There shall be two (2) manual vents supplied at the rear of the tiller cab to insure adequate ventilation.

Comply with Section 3.12: YES_____NO_____

Bidder Response Section 3.12:

3.13 Defogger Fans

There shall be two (2) defogger fans located in the tiller cab. The fans shall be pointed at the front windshield of the cab.

Comply with Section 3.13: YES_____NO_____

Bidder Response Section 3.13:

3.14 Auxiliary Fans

There shall be two (2) auxiliary fans installed inside the tiller cab.

Comply with Section 3.14: YES_____NO_____

Bidder Response Section 3.14:

3.15 Rear View Mirror, Tiller Cab

3.15.1 There shall be one set of rear view mirrors installed on the tiller cab. The mirrors shall be located on the front outside portion of the tiller cab to provide the tiller operator with a maximum view of the rear of the apparatus.

3.15.2 There shall also be a set of rear view mirrors (round/convex style) mounted on the trailer sides above the trailer axle.

Comply with Section 3.15: YES_____NO_____

Bidder Response Section 3.15:

3.16 Rear Axle Steering Display

Exact model shall be determined at pre-construction meeting.

Comply with Section 3.16: YES_____NO_____

Bidder Response Section 3.16:

3.17 Steps, Tiller Cab Access, Left

For access to the tiller cab, one set of steps shall be furnished at the left rear of the apparatus at the furthest point behind the tiller trailer axle. The steps shall be constructed of aluminum grip-strut. The steps shall have a maximum stepping height which shall not exceed 18" with the exception of the ground to first step which shall not exceed NFPA standard of 24". Steps shall be illuminated for night time operation. The lights shall be activated by the parking brake. To aid in ascending and descending the access steps, handrails shall be provided on each side. The steps and handrails shall have LED lighting incorporated into each.

Comply with Section 3.17: YES_____NO_____

Bidder Response Section 3.17:

3.18 Steps, Tiller Cab Access, Right

For access to the tiller cab, one set of steps shall be furnished at the right rear of the apparatus at the furthest point behind the tiller trailer axle. The steps shall be constructed of aluminum grip-strut. The steps shall have a maximum stepping height which shall not exceed 18" with the exception of the ground to first step which shall not exceed NFPA standard of 24". Steps shall be illuminated for night time operation. The lights shall be activated by the parking brake. To aid in ascending and descending the access steps, handrails shall be provided on each side. The steps and handrails shall have LED lighting incorporated into each.

Comply with Section 3.18: YES_____NO_____

Bidder Response Section 3.18:

3.19 Aluminum

All body compartments shall be fabricated of 1/8", 5052-H32, smooth aluminum plate. The complete body shall be fabricated using break and bend techniques to form strong yet flexible.

Comply with Section 3.19: YES_____NO_____

Bidder Response Section 3.19:

3.20 Body Subframe

The main body sub frame shall be constructed from galvanized steel tubing. The sub frame shall be located at the front and rear of the body and in front and rear of the wheel well opening.

a. The compartment area behind the rear axle shall be supported by a drop frame fabricated 9f steel tube and angles. All drop frame structures shall be welded directly to the torque box to allow the body to be a separate structure from the chassis

Comply with Section 3.20: YES_____NO_____

Bidder Response Section 3.20:

3.21 Vertical Hinges

All vertical hinges shall be designed as to prevent the hinge pin from coming loose and sliding up or down.

Comply with Section 3.21: YES_____NO_____

Bidder Response Section 3.21:

3.22 Compartments Left Side

3.22.1 **Compartment LO**

There shall be a compartment located above the front stabilizer on the left side of the apparatus body. This compartment shall be designated as LO. It shall be equipped with a single, horizontally hinged lift up, treadbrite door. The compartment shall be able to hold One (1) 8' Werner NXT1A08 Type IA fiberglass single sided step ladder. The compartment shall be transverse.

3.22.2 **Compartment L1**

A compartment shall be located above the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L1. It shall be equipped with a single, horizontally hinged lift-up treadbrite door. Door Opening minimum 30" Wide x 15" High. The compartment shall be transverse. The compartment floor shall be lined with a poly type material to allow the stokes basket to slide in and out of the compartment.

3.22.3 **Compartment L2**

3.22.3.1 A compartment shall be located behind the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L2. It shall be equipped with a single, vertically hinged swing out door. Door Opening minimum 20" Wide x 40" High. The compartment upper portion minimum 20" wide x 11" high shall have a usable depth of minimum 23" The compartment lower portion 20" wide x 29" high shall be transverse.

3.22.3.2 The entire 120/240-volt electrical system shall be installed in compliance with NFPA 1901 newest edition. This shall include all testing, labeling, wiring methodology, and dimensional requirements. Certification of compliance shall accompany the apparatus at the time of delivery.

3.22.3.3 There shall be a 120/240-volt load center incorporated into the 120/240-volt wiring system. The load center shall include adequate circuit breakers to protect the loads specified on this apparatus.

3.22.3.4 All 120/240-volt AC wiring shall be done in accordance with NFPA 1901 newest edition as well as nationally accepted electrical codes.

3.22.3.5 The compartment shall have branch circuit overcurrent protection in accordance with NFPA 1901 newest version. The load center shall be equipped with a non-GFI two pole main breaker when the six or more individual branch circuits are present. Over current protection devices shall be marked with labels to identify the function of the circuit they protect.

3.22.3.6 There shall be a FROG D provided with the generator. The FROG D shall automatically sense a generator signal and begin displaying information. The digital meter display shall constantly monitor and display voltage, frequency and current draw on two separate lines. The display shall be capable of displaying total accumulated run time hours when the MODE button is pressed. The information shall be stored in a non-erasable memory. The FROG display shall be located next to the load center in L-2.

3.22.4 **Compartment L3**

A compartment shall be located behind the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L3. It shall be equipped with double vertically hinged swing-out doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 16" high shall be transverse. The compartment intermediate portion minimum 35" wide x 13" high shall have a

usable depth of minimum 23". The compartment lower portion minimum 35" wide x 29" high shall be transverse.

3.22.5 **Compartment L4**

There shall be a full height compartment located behind the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L4. It shall be equipped with double, vertically hinged swingout doors. Door Opening - 35" Wide x 60" High. The compartment upper portion 35" wide x 16" high shall be transverse. The compartment intermediate portion 35" wide x 13" high shall have a usable depth of 23" The compartment lower portion 35" wide x 29" high shall be transverse.

3.22.6 **Compartment L5**

There shall be a full height compartment located behind the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L5. It shall be equipped with double, vertically hinged swingout doors. Door Opening - 35" Wide x 60" High. The compartment upper portion 35" wide x 12" high shall be transverse. The compartment intermediate portion 35" wide x 35" high shall have a usable depth of 13.5" The compartment lower portion 35" wide x 13" high shall be transverse.

3.22.7 **Compartment L6**

There shall be a full height compartment located behind the front stabilizers on the left side of the apparatus body. This compartment shall be designated as L6. It shall be equipped with double, vertically hinged swingout doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 12" high shall be transverse. The compartment intermediate portion minimum 35" wide x 35" high shall have a usable depth of minimum 13.5" The compartment lower portion minimum 35" wide x 13" high shall be transverse.

3.22.8 **Compartment L7**

There shall be a compartment located in front of the rear trailer axle on the left side of the apparatus body. This compartment shall be designated as L7. It shall be equipped with a single, vertically hinged swing-out door. Door Opening minimum 26" Wide x 29" High. The compartment shall have a usable depth of minimum 20".

3.22.9 **Compartment L8**

There shall be a compartment located behind the rear trailer axle on the left side of the apparatus body. This compartment shall be designated as L8. It shall be equipped with a single, vertically hinged swing-out door. Door Opening minimum 32" Wide x 39" High. The compartment upper portion shall have a minimum usable depth of 13.5". The compartment lower portion shall have a minimum usable depth of 24".

3.22.10 **Compartment L9**

There shall be a compartment located in front of the rear trailer axle above compartment L7 on the left side of the apparatus body. This compartment shall be designated as L9. It shall be equipped with a single, horizontally hinged flip-down door. Door Opening minimum 24" Wide x 15" High. The compartment shall be transverse.

Comply with Section 3.22: YES_____NO_____

Bidder Response Section 3.22:

3.23 <u>Compartments Right Side</u>

3.23.1 **Compartment RO**

There shall be a compartment located above the front stabilizer on the right side of the apparatus body. This compartment shall be designated as RO. It shall be equipped with a single, horizontally hinged lift up, treadbrite door. The compartment shall be able to hold One (1) 8' Werner NXT1A08 Type IA fiberglass single sided step ladder. The compartment shall be transverse.

3.23.2 **Compartment R1**

A compartment shall be located above the front stabilizers on the right side of the apparatus body. This compartment shall be designated as L1. It shall be equipped with a single, horizontally hinged lift-up treadbrite door. Door Opening minimum 30" Wide x 15" High. The compartment shall be transverse. The

compartment floor shall be lined with a poly type material to allow the stokes basket to slide in and out of the compartment.

3.23.3 **Compartment R2**

A compartment shall be located behind the front stabilizers on the right side of the apparatus body. This compartment shall be designated as R2. It shall be equipped with a single, vertically hinged swing out door. Door Opening minimum 20" Wide x 40" High. The compartment upper portion minimum 20" wide x 11" high shall have a usable depth of minimum 23". The compartment lower portion minimum 20" wide x 29" high shall be transverse.

3.23.4 **Compartment R3**

A compartment shall be located behind the front stabilizers on the right side of the apparatus body. This compartment shall be designated as R3. It shall be equipped with double vertically hinged swing-out doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 16" high shall be transverse. The compartment intermediate portion minimum 35" wide x 13" high shall have a usable depth of minimum 23". The compartment lower portion minimum 35" wide x 29" high shall be transverse.

3.23.5 **Compartment R4**

There shall be a full height compartment located behind the front stabilizers on the right side of the apparatus body. This compartment shall be designated as R4. It shall be equipped with double, vertically hinged swingout doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 16" high shall be transverse. The compartment intermediate portion minimum 35" wide x 13" high shall have a minimum usable depth of 23" The compartment lower portion minimum 35" wide x 29" high shall be transverse.

3.23.6 **Compartment R5**

There shall be a full height compartment located behind the front stabilizers on the right side of the apparatus body. This compartment shall be designated as R5. It shall be equipped with double, vertically hinged swingout doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 12" high shall be transverse. The compartment intermediate portion minimum 35" wide x 35" high shall have a minimum usable depth of 13.5" The compartment lower portion minimum 35" wide x 13" high shall be transverse.

3.23.7 **Compartment R6**

There shall be a full height compartment located behind the front stabilizers on the right side of the apparatus body. This compartment shall be designated as R6. It shall be equipped with double, vertically hinged swingout doors. Door Opening minimum 35" Wide x 60" High. The compartment upper portion minimum 35" wide x 12" high shall be transverse. The compartment intermediate portion minimum 35" wide x 35" high shall have a usable depth of minimum 13.5" The compartment lower portion minimum 35" wide x 13" high shall be transverse.

3.23.8 **Compartment R7**

There shall be a compartment located in front of the rear trailer axle on the right side of the apparatus body. This compartment shall be designated as R7. It shall be equipped with a single, vertically hinged swing-out door. Door Opening minimum 26" Wide x 29" High. The compartment shall have a usable depth of minimum 20".

3.23.9 **Compartment R8**

There shall be a compartment located behind the rear trailer axle on the right side of the apparatus body. This compartment shall be designated as R8. It shall be equipped with a single, vertically hinged swing-out door. Door Opening minimum 32" Wide x 39" High. The compartment upper portion shall have a minimum usable depth of 13.5" The compartment lower portion shall have a minimum usable depth of 24"

3.23.10 **Compartment R9**

There shall be a compartment located in front of the rear trailer axle above compartment R7 on the right side of the apparatus body. This compartment shall be designated as R9. It shall be equipped with a single, horizontally hinged flip-down door. Door Opening minimum 24" Wide x 15" High. The compartment shall be transverse.

Comply with Section 3.23: YES_____NO_____

Bidder Response Section 3.23:

3.24 Compartment Scuff Platers

Anodized aluminum angle scuff plates shall be installed in the bottom sill area of all major equipment carrying compartments to reduce paint damage from equipment. The scuff plates shall be attached using a permanent bonding double sided tape.

Comply with Section 3.24: YES_____NO_____

Bidder Response Section 3.24:

3.25 Sweep-Out Construction

Compartment floors shall have a "sweep-out" design with the door opening threshold positioned lower than compartment floor, permitting easy cleaning of compartments.

Comply with Section 3.25: YES_____NO_____

Bidder Response Section 3.25:

3.26 Compartment Door Construction

The lap type compartment doors shall be of double panel construction. The outer panel shall be fabricated of .190, 5052-H32 aluminum and the inner panel of .125, 3003-H14 aluminum. There shall be a heavy-duty automotive type extruded rubber molding installed on the overlap area of the doors to insure a weatherproof seal and prevent water from collecting in the door sills. All of the compartment doors shall have a polished stainless steel continuous hinge connected to both the body and the door with stainless steel bolts and nuts. The hinge pin shall be stainless steel with a minimum diameter of 1/4".

Comply with Section 3.26: YES_____NO_____

Bidder Response Section 3.26:

3.27 Compartment Locking Door Handles, Double Pan Doors

Exterior door latches shall incorporate a polished LOCKING D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. There shall be a safety latch with striker plate included with the door handle assembly. No lock shall be installed on compartment where cab lift control is located.

Comply with Section 3.27: YES_____NO_____

Bidder Response Section 3.27:

3.28 Compartment Door Holders Gas Struts

3.28.1 Gas strut with dampeners door holders shall be furnished on all vertically hinged, swing-open compartment doors to hold the door in either the fully open or partially closed position. The door holder shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released.

3.28.2 On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened

Comply with Section 3.28: YES_____NO_____

Bidder Response Section 3.28:

3.29 Compartment Door Holders, Gas Struts

Gas strut with dampeners door holders shall be furnished on all horizontally hinged, lift-up compartment doors to hold the door in either the fully open or partially closed position and assist in raising it. The door holder shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released.

Comply with Section 3.29: YES_____NO_____

Bidder Response Section 3.29:

3.30 Rear Compartment, Tiller

There shall be a compartment located at the rear of the apparatus. The compartment shall have a single horizontally hinged lift up door. The compartment shall extend in depth to the front of the torque box assembly and shall have a framework installed to hold the proper compliment of ladders and tools specified in sections 301.75 and 301.76.

Comply with Section 3.30: YES_____NO_____

Bidder Response Section 3.30:

3.31 Storage Compartment, Rear, Below Torque Box Compartment T4

There shall be a compartment located at the rear of the apparatus below the torque box compartment. This compartment shall be designated as T4. The compartment shall have a horizontally hinged flip down door. Door Opening minimum 30" wide x 9" high. The compartment shall have a usable depth of minimum 72".

Comply with Section 3.31: YES_____NO_____

Bidder Response Section 3.31:

3.32 Aluminum Tray(s) for Pike Pole Storage

There shall be four (4) aluminum tray(s) for storage of pike pole(s) installed in the storage compartment located below the torque box compartment. The following pike poles shall be supplied with the apparatus.

a. Two (2) 6' Aluminum D-Handle Fiberglass Rubbish Hook, Nupla RH-6DA
b. Two (2) 4' Aluminum D-Handle Fiberglass Ceiling & Wall Hook, Nupla CWH-4YDA

Comply with Section 3.32: YES_____NO_____

Bidder Response Section 3.32:

3.33 Storage Compartment, Tiller, Right Side, Rear Compartment T3

There shall be a storage compartment located on the right rear of the tiller body. This compartment shall be designated as T3. The compartment shall have a vertically hinged treadbrite door with a pop latch. Door Opening minimum 9" wide x 18" high. The compartment shall have a minimum usable depth of 15". The compartment shall not have any venting into any other compartment as this compartment is designed for portable fuel storage.

Comply with Section 3.33: YES_____NO_____

Bidder Response Section 3.33:

3.34 Storage Compartment, Tiller, Left Side, Rear Compartment T2

There shall be a storage compartment located on the left rear of the tiller body. This compartment shall be designated as T2. The compartment shall have a vertically hinged treadbrite door with a pop latch. Door Opening minimum 9" wide x 18" high. The compartment shall have a minimum usable depth of 15". There shall be a female air connection located in the compartment to allow for connecting an air hose.

Comply with Section 3.34: YES_____NO_____

Bidder Response Section 3.34:

3.35 Door Handle, Locking Single Pan Lap Type Door

3.35.1 Exterior door latches shall incorporate a polished LOCKING D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand.

3.35.2 Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards.

Comply with Section 3.35: YES_____NO_____

Bidder Response Section 3.35:

3.36 NFPA Step Requirements

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds. Steps shall be provided at any area that personnel may need to climb and shall be adequately lighted.

Comply with Section 3.36: YES_____NO_____

Bidder Response Section 3.36:

3.37 Stokes Basket Storage

Provisions shall be provided on the R1/L1 compartment for storage of one (1) Stokes Basket, and one backboard.

Comply with Section 3.37: YES_____NO_____

Bidder Response Section 3.37:

3.38 Frame Ladder Storage (Inside Compartment)

Storage provisions shall be provided in a transverse compartment for the following ladder (s):

a. One (1) 8' Werner NXT1A08 Type IA fiberglass single sided step ladder shall be provided with the apparatus. The ladder shall be stored in the RO compartment above the stabilizers.

Comply with Section 3.38: YES_____NO_____

Bidder Response Section 3.38:

3.39 Compartment Venting

Each body compartment shall be properly vented in a manner that will reduce the amount of dirt and water that may enter the compartment. Venting shall be directly to the atmosphere rather than into another compartment, which would only spread moisture throughout the body rather than dissipate it. Additionally, each compartment shall be equipped with drain holes to allow standing water to exit.

Comply with Section 3.39: YES_____NO_____

Bidder Response Section 3.39:

3.40 Ultra Stainless Screws

Stainless steel screws shall be provided throughout the body in locations such as overlays and other numerous hardware mounting locations.

Comply with Section 3.40: YES_____NO_____

Bidder Response Section 3.40:

3.41 Stepping, Standing, Walking Surfaces

All exterior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be constructed of Grip Strut or Textured Treadbrite and shall provide a highly slip resistant surface, even when the surface is wet. All interior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be slip resistant when the surface is dry. The degree of slip resistance shall be in compliance with the intent of NFPA 1901 newest version. It is the desire of the fire department to purchase an apparatus that utilizes aluminum treadplate as an overlay of the main apparatus body structure. Aluminum treadplate may also be utilized in the construction of enclosure doors, lids and covers where applicable. Aluminum treadplate is not to be utilized as a main structural member of the apparatus body or pump enclosure.

Comply with Section 3.41: YES_____NO_____

Bidder Response Section 3.41:

3.42 Walkways and Overlays

The running boards and walkways shall be constructed of structural sheet metal that is integral with the body. They shall be overlaid with aluminum tread plate material to provide a slip resistant surface, resulting in a full1/4" thickness for maximum strength. Overlays shall be installed that are totally insulated from the apparatus with nylon shoulder washers that extend into holes in the body. Stainless steel cap nuts shall be employed where bolt ends may damage equipment or cause injury. After the apparatus is painted and the overlays are reinstalled, they shall be additionally sealed at the edges with a caulking compound.

Tread plate overlays shall be provided in the following areas:

a. All walkways and running board
b. The entire rear surface of the body below the tiller cab.
c. Gooseneck portion of the tiller trailer.
d. The top surface of the tiller trailer, bending over the outside edge to form a drip rail.
e. The fifth wheel area of the tiller tractor forming a complete cover over the chassis frame.

Comply with Section 3.42: YES_____NO_____

Bidder Response Section 3.42:

3.43 Mud Flaps

Two (2) mud flaps (black no writing) shall be installed on the apparatus to the rear of the wheel well. The mud flaps shall be a minimum of 3/8" thick to prevent "sailing".

Comply with Section 3.43: YES_____NO_____

Bidder Response Section 3.43:

3.44 Rear Wheel Wells Tiller Trailer

The fenders shall be integral with the body sides and compartments with a seamless appearance. The fenders shall be fitted with bolt-in removable full circular inner liners in the wheel well area for ease of cleaning and maintenance.

Comply with Section 3.44: YES_____NO_____

Bidder Response Section 3.44:

3.45 Rear Fenderettes

Two (2) stainless steel fenderettes shall be installed at the outboard edge of the rear wheel well area, one on each side. The fenderettes shall be bolted to the apparatus body using nylon washers to space them slightly away from the body to reduce build-up of road grime. The fenderettes shall be constructed of stainless steel that has been polished to a high-quality finish.

Comply with Section 3.45: YES_____NO_____

Bidder Response Section 3.45:

3.46 Body Rub Rails

Rub rails shall be installed beneath the compartment doors to protect them from damage should the body be brushed or rubbed against another object. The rub rails shall be 3/16 inch aluminum channel, 2-1/2 inch x 1 inch. The rub rails shall be highly polished and then Bright Dip anodized. It shall be installed on the body utilizing non-corrosive nylon spacers and secured with stainless steel bolts. The outside edge of the rub rails shall be even with the fenderettes and bolt-on steps to prevent snagging.

Comply with Section 3.46: YES_____NO_____

Bidder Response Section 3.46:

3.47 Two Rear Tow Eyes

There shall be two (2) chrome plated tow eyes installed at the rear of the apparatus. The tow eyes shall be bolted to a heavy-duty assembly that is welded to the torque box. The tow eyes shall have a 2-1/2" ID hole.

Comply with Section 3.47: YES_____NO_____

Bidder Response Section 3.47:

3.48 Handrails, Grab Rails and Steps

Handrails shall be stainless steel tubing of not less than 1-1/4" in diameter covered with ribbed rubber grips. All railing shields and brackets shall be chrome plated, and bolted with stainless steel bolts. The lower bracket on all vertical handrails shall have a drain hole drilled in it at the lowest point. Handrails shall be provided in the following areas:

a. Handrail(s) for left and right turntable access steps.
b. Vertical handrail on left and right tiller cab access steps.

Comply with Section 3.48: YES_____NO_____

Bidder Response Section 3.48:

3.49 Dri-Dek Tiles

There shall be Dri-Dek tiles provided with the apparatus. The tiles shall be black in color. When installed in compartments, yellow leading edges shall be provided.

Comply with Section 3.49: YES_____NO_____

Bidder Response Section 3.49:

3.50 Shelving Channels

There shall be twenty (20) Strut channels installed in twenty (20) standard height compartment(s) for future shelves.

Comply with Section 3.50: YES_____NO_____

Bidder Response Section 3.50:

3.51 Adjustable Shelves

There shall be twenty-five (25) adjustable shelves installed on the apparatus. The shelves shall be constructed of 3/16" aluminum sheet with 2" lips. The shelves shall have an abraded finish. The shelves shall be designed in such a manner that will allow liquids to readily drain when spilled. The shelves shall be installed in the EMS compartment supplied with the chassis cab.

Comply with Section 3.51: YES_____NO_____

Bidder Response Section 3.51:

3.52 Roll Out Equipment Tray(s)

There shall be eight (8) rollout tray(s) installed on the apparatus. Each tray shall be provided with a SlideMaster™model SM3-MP roller type assembly. The roller assembly shall have a rated capacity of 6001b distributed load, and shall have 100% extension capabilities. A mechanical lock assembly shall be provided to lock the tray in the extended position and the retracted position. The tray(s) shall be constructed of 3/16" aluminum sheet with 3" lips. The tray(s) shall have an abraded finish. The tray roller assembly shall have a power coated finish for added corrosion protection.

Comply with Section 3.52: YES_____NO_____

Bidder Response Section 3.52:

3.53 Wheel Well Storage

3.53.1 There shall be a compartment on the right and left side in the rear wheel well area on the front side of the trailer axle. The compartment shall be able to accommodate two (2) 60-minute carbon fiber cylinders with valve (Scott Part # 804723-01). The compartment shall have drain holes towards the rear wall. The rear wall of the compartment shall have rubber padding to prevent damage when the bottle comes in contact with the wall. The compartment doors shall be vertically hinged, weather stripped and shall be painted to match the trailer.

3.53.2 There shall also be a compartment on the right and left side in the rear wheel well area on the rear side of the trailer axle. The compartment on the right side shall be able to accommodate two (2) 2.5-gallon pressurized water extinguishers. The compartment on the left side shall be able to accommodate a 20lb Ansul cartridge dry chemical fire extinguisher. The compartment doors shall be vertically hinged, weather stripped and shall be painted to match the trailer.

Comply with Section 3.53: YES_____NO_____

Bidder Response Section 3.53:

3.54 Ground Ladders, Tiller

3.54.1 All ground ladders, unless otherwise specified herein, shall be individually mounted vertically, side by side, on their beams, in a ground ladder storage compartment accessible from the rear of the trailer. The compartment shall be fully enclosed and shielded from underside road debris and moisture. All ladders shall be capable of being removed independently without removing another and shall be mounted according to length.

3.54.2 Each ladder shall be supported in four (4) continuous full length PTFE Teflon or approved equal UV resistant 3"x3" angle ways. The ladder ways shall have forward ladder stops, tapered pockets and hold down rollers and all ladder ends shall be even at the rear of the trailer when stowed.

3.54.3 A hinged locking gate with hold down rollers shall be provided for the vertically mounted ladders. Neoprene covered nylon or approved equal UV resistant rollers or nylon pads shall be provided as necessary in the compartment to protect the ladders from damage.

3.54.4 The access door to the torque box ladder storage compartment shall be constructed of smooth aluminum for overlay of Chevron reflective material. The ladder bay shall be able to hold the following ladder compliment:

a. Three (3) 10' folding attic ladders, Duo Safety 585A
b. Two (2) 16' roof ladders, Duo Safety 875A
c. One (1) 18' roof ladder, Duo Safety 875A
d. One (1) 20' roof ladder, Duo Safety 875A
e. Two (2) 28' two section extension ladders, Duo Safety 1200A
f. Two (2) 35' two section extension ladders, Duo Safety 1200A

Comply with Section 3.54: YES_____NO_____

Bidder Response Section 3.54:

3.55 Pike Poles and Hooks

Pike poles & hooks shall be stored in individual tubes within the torque box, adjacent to the ladders. The following fiberglass handled pike poles shall be supplied with the apparatus at the time of delivery:

a. Two (2) 10' Fiberglass Pike Pole(s), Nupla YPD-10
b. One (1) 12' Fiberglass Pike Pole(s), Nupla YPD-12
c. One (1) 18' Fiberglass Pike Pole(s), Nupla YPD-18
d. Three (3) 6' Rubbish Hook(s), Nupla RH-6DA (Aluminum "D" Handle)
e. One (1) 4' Rubbish Hook(s), Nupla RH-4DA (Aluminum "D" Handle)
f. Two (2) 6' New York Roof Hook, Fire Hooks Unlimited
g. Two (2) 4' New York Roof Hook, Fire Hooks Unlimited

Comply with Section 3.55: YES_____NO_____

Bidder Response Section 3.55:

3.56 Thermoplastic Coating

In the designated areas, a Line X or equivalent system shall be used for maximum protection of the body and equipment. The system shall utilize flexible 100% solids applied with high pressure impingement-mix polyurethane dispensing equipment.

a. The coating shall be a fast cure, textured surface, multi-purpose material designed for commercial and industrial applications. It shall exhibit excellent adhesion to the body and serve as a protective, abrasion resistant liner where applied.

b. The density of the material shall be a minimum of 70 PCF as measured using ASTM test method D-1622. The taber abrasion resistance shall be a minimum of 0.03% per 1000 cycles as measured utilizing ASTM test method D-4060.
c. The minimum tensile strength as measured using ASTM D-2370 shall be 1540 pounds per square inch.

Comply with Section 3.56: YES_____NO_____

Bidder Response Section 3.56:

3.57 Body Compartment Coating

The interior of the body compartments shall be coated with a gray thermo-plastic polyurethane coating. The coating shall be durable enough to withstand everyday abuse of equipment removal and shifting.

Comply with Section 3.57: YES_____NO_____

Bidder Response Section 3.57:

3.58 Body Compartmentation Door Pans Coating

The body compartment door pans shall be constructed of stainless steel.

Comply with Section 3.58: YES_____NO_____

Bidder Response Section 3.58:

3.59 Body Paint Preparation

After the body and components have been fabricated and assembled they shall then be disassembled prior to painting so when the apparatus is completed there shall be finish paint beneath the removable components. The apparatus body and components shall be metal finished as follows to provide a superior substrate for painting:

a. All aluminum sections of the body shall undergo a thorough cleaning process starting with a phosphoric acid solution to begin the etching process followed by a complete rinse. The next step shall consist of a chemical conversion coating applied to seal the metal substrate and become part of the aluminum surface for greater film adhesion.
b. After the cleaning process the body and its components shall be primed with a High Solids primer and the seams shall be caulked.
c. All bright metal fittings, if unavailable in stainless steel or polished aluminum, shall be heavily chrome plated. Iron fittings shall be copper under plated prior to chrome plating.

Comply with Section 3.59: YES_____NO_____

Bidder Response Section 3.59:

3.60 Paint Process

The paint process shall follow the strict standards as set forth by PPG Fleet Finish Guidelines. The body shall go through a three-stage paint process: Primer Coat, Base Coat (Color), and Clear Coat. In the first stage of the paint process the body shall be coated with PPG F3980 Low VOC I High Solids primer to achieve a total thickness of 2-4 mills. In the second stage of the paint process the body shall be painted with PPG FBCH Delfleet™ High Solids Polyurethane Base Coat. A minimum of two to three coats of paint shall be applied to achieve hiding. In the final stage of the paint process the body shall be painted with PPG DCU-2002 Clear Coat. A minimum of two to three coats shall be applied to achieve a total dry film thickness of 2-3 mills. As part of the curing process the painted

body shall go through a Force Dry I Bake Cycle process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.

Comply with Section 3.60: YES_____NO_____

Bidder Response Section 3.60:

3.61 Hand Polished

After the force dry I bake cycle and ample cool down time, the coated surface shall be sanded using 3M 1000, 1200, and or 1500 grit sandpaper to remove surface defects. In the final step, the surface shall be buffed with 3M Superduty compound to add extra shine to coated surface. No more than .5 mil of clear shall be removed in this process.

Comply with Section 3.61: YES_____NO_____

Bidder Response Section 3.61:

3.62 Aerial Component Protection/Paint

All aerial device components above the rotation point that are not chrome plate bright aluminum treadplate or stainless steel shall be painted. All areas to be painted shall be sanded to remove any metal flakes and smooth any rough surfaces. All surfaces to be painted shall be phosphatized to remove metal impurities, aid paint adhesion and inhibit rust. The components shall be prime painted with a Low V.O.C. high solids non-isocyanate primer and finish painted with a Low V.O.C. extremely durable, single stage ultra-high solids high gloss polyurethane paint. The support structure and components below the rotation point shall be painted black.

The extending stabilizer beams, inner jack cylinder protective tubes, and stabilizer pads shall be hot dip galvanized as follows:

a. The extending stabilizer beams, inner jack tubes, and stabilizer pads shall be wheel-a-braided to remove any mill scale, or contamination prior to galvanizing.
b. Following this preparation, the individual components shall be hot dip galvanized. The galvanizing process shall require that the entire assembly be completely submerged. Following the galvanizing process, the surface shall be ground smooth to remove dross. This preparation shall provide maximum protection for these critical components. Following surface preparation, components shall be coated with Black water base self-etching coating. No Exceptions ·
c. To enhance durability and appearance, the high gloss polyurethane paint applied to the aerial ladder sections and other components above the rotation point, shall be cured at an elevated temperature for a period not less than 2 hours. The temperature shall not be less than 180 degrees F. Curing of the paint shall promote a chemical reaction within the substrate that shall harden the paint. The curing shall be performed in a clean, sealed, controlled atmosphere. The atmosphere shall comply with all environmental standards and any air entering the chamber shall be filtered.

Comply with Section 3.62: YES_____NO_____

Bidder Response Section 3.62:

3.63 Aerial Device Paint Color

The aerial device shall be painted with PPG Delfleet polyurethane enamel paint. The color shall be (White) PPG# FOG -2185.

Comply with Section 3.63: YES_____NO_____

Bidder Response Section 3.63:

3.64 Aerial Ladder Egress Paint Color

The aerial ladder egress shall be painted with PPG Delfleet polyurethane enamel paint. The color shall be meet current NFPA recommendations.

Comply with Section 3.64: YES_____NO_____

Bidder Response Section 3.64:

3.65 Aerial Torque Box Paint

The aerial torque box shall be painted with PPG polyurethane enamel paint. The color shall be (Black) PPG# MTK - 9000.

Comply with Section 3.65: YES_____NO_____

Bidder Response Section 3.65:

3.66 Apparatus Body Color

The apparatus shall be painted with PPG polyurethane enamel paint PPG # FBCH-72626-ALT, color red.

Comply with Section 3.66: YES_____NO_____

Bidder Response Section 3.66:

3.67 Touch-up Paint

here shall be three (3) paint sticks supplied per color with each apparatus for touch up.

Comply with Section 3.67: YES_____NO_____

Bidder Response Section 3.67:

3.68 Reflective Lettering

3.68.1 There shall be thirty-eight (38) reflective letters provided and installed on the apparatus. The letters shall be approximately 3" tall with black outline and shadow.
   a. "RIVERSIDE COUNTY"- Arched above door emblem
   b. " FIRE" - Straight below door Emblem

3.68.2 There shall be sixteen (16} reflective letters provided and installed on the apparatus; The letters shall be approximately 6" tall with black outline and shadow. Lettering shall be installed on vehicle lettering mounting plates per County's direction.

3.68.3 There shall be reflective letters provided and installed on the aerial signs, left and right. The letters shall be approximately 12" tall with black outline and shadow.

Comply with Section 3.68: YES_____NO_____

Bidder Response Section 3.68:

3.69 Custom Door Decals

There shall be a pair of custom door decals provided. The decals shall be installed as per the customer specifications at pre-paint inspection.

Comply with Section 3.69: YES_____NO_____

Bidder Response Section 3.69:

3.70 Reflective "S" Ribbon

There shall be one (1} reflective "S" located in the reflective stripe on each side of the apparatus. The "S" portion of the stripe shall be shaded and highlighted to give it a ribbon effect.

Comply with Section 3.70: YES_____NO_____

Bidder Response Section 3.70:

3.71 NFPA Compliant Reflective Striping

Reflective striping shall be applied to the exterior of the apparatus in a manner consistent with the National Fire Protection Association Pamphlet 1901, latest edition. It shall consist of a 6" wide stripe low across the front of the chassis and along the sides up to the first compartment on each side where it shall then angle up and back to a point above the wheel well area where it shall then run level to the back edge of the body. The reflective striping shall be white in color.

Comply with Section 3.71: YES_____NO_____

Bidder Response Section 3.71:

3.72 Chevron Reflective Striping on Rear Torque Box Ladder Access Door

In addition to the custom striping pattern supplied on the apparatus, there shall be additional reflective striping applied to the torque box ladder access door on the rear of the apparatus. The striping shall consist of alternating 4" red and yellow reflective stripes applied in a "Chevron" pattern. Chevron reflective material shall be applied to the entire rear face of the trailer body (not the tiller box).

Comply with Section 3.72: YES_____NO_____

Bidder Response Section 3.72:

3.73 Rub Rail Reflective Striping

There shall be 2" reflective striping installed in the rub rail channel. The reflective striping shall be diamond grade quality material for increased visibility. The reflective shall be silver in color.

Comply with Section 3.73: YES_____NO_____

Bidder Response Section 3.73:

3.74 Paint Aerial Underside

The underside of the aerial shall be painted.

Comply with Section 3.74: YES_____NO_____

Bidder Response Section 3.74:

3.75 Wheel Chocks & Mounting

There shall be two (2) pairs of Zico #SAC-44 wheel chocks provided with the apparatus. The chocks shall be mounted in Zico #SQCH-44-H mounting brackets in locations that are easily accessible under both the right and left sides of the body.

Comply with Section 3.75: YES_____NO_____

Bidder Response Section 3.75:

3.76 Third Party Certifications

3.76.1 All bids shall include copies of the certification of testing of the aerial device. The County desires a device that has been tested by a third party for compliance with the 2 to 1 safety factor specified by NFPA Pamphlet 1901, latest edition. Devices that have not been certified by an engineer that is independent of the manufacturer shall not be acceptable.

3.76.2 Welds shall be tested using two (2) Non-Destructive methods by a third-party inspection firm. Steel and aluminum ladders shall, at a minimum, have all welds tested using two (2) separate NOT methods.

3.76.3 Aerial structures shall have 100 % of all structural welds tested using both magnetic particle method and visual testing method. Aerials that are fabricated of aluminum shall have 100% of all structural welds tested using dye penetrant method and visual method. Manufacturers who rely only on visual inspection (performed in-house or by any third party) as a primary method of testing shall not be considered and their bid shall be rejected.

Comply with Section 3.76: YES_____NO_____

Bidder Response Section 3.76:

3.77 NFPA Aerial Stability Factors & Testing

3.77.1 A one and one half to one (1.5:1) stability factor shall be provided. These capabilities shall be established in an unsupported configuration. Since the device is rated while flowing water, stability testing shall account for the distributed weight of water in a full waterway and water reactionary force as required by NFPA 1901. The following are specific descriptions of what tests are to be performed, and conditions they shall be performed under. The aerial manufacturer shall strictly adhere to these tests and conditions as set forth in these specifications and NFPA 1901, newest revision.

a. For both of the following tests, the only obstructions to a full 360-degree rotation with the aerial at 0 degrees' elevation and full extension; shall be presented by the apparatus itself (if any), and NOT external obstructions at the manufacturer's test location(s). This shall mean that the aerial device manufacturer shall ensure that the testing grounds present no obstruction (trees, buildings, etc..) to the full 360-degree rotation at 0 degrees' elevation and full extension, which may cause the need to raise the aerial to clear the obstruction.

b. Additionally, the apparatus shall be tested for stability only after the entire apparatus is complete. This requirement is specified in NFPA 1901 as the apparatus being in "service ready condition". There shall be No Exception to this requirement since it would be unlikely that actual weight distribution could be accurately simulated for the stability testing. "Counter weighting" shall not be allowed under any circumstance in place of the actual body and equipment.

3.77.2 **Test One (1)**

After the above conditions have been satisfied, the aerial shall be subjected to the following test in the presence of the third-party testing company that is in compliance with these specifications. Specifically, the aerial device shall be placed on level ground with the stabilizers deployed per manufacturer recommendations. The aerial device shall then have 1.5 times the rated capacity placed at the tip of the aerial, with the device at full extension and at 0 degrees' elevation; which is the most stringent configuration. The device shall be rotated 360 degrees, raising and lowering the aerial as needed to clear the cab of the apparatus. The aerial shall prove to be stable during the entire test and no component of the aerial shall permanently deform.

3.77.3 **Test Two (2)**

After the above conditions have been satisfied, the aerial shall be subjected to the following test in the presence of the third-party testing company that is in compliance with these specifications. Specifically, the aerial device shall be placed on a 5-degree downward slope with the stabilizers deployed per manufacturer recommendations. The aerial device shall then have 1.33 times the rated capacity placed at the tip of the aerial, with the device at full extension and at 0 degrees' elevation; which is the most stringent configuration. The device shall be rotated 360 degrees, raising and lowering the aerial as needed to clear

the cab of the apparatus. The aerial shall prove to be stable during the entire test and no component of the aerial shall permanently deform.

Comply with Section 3.77: YES_____NO_____

Bidder Response Section 3.77:

3.78 Inspection Certificate (NFPA 1901 Compliance)

A third-party inspection certificate for the aerial device shall be furnished upon delivery of the aerial device. The purpose of this NFPA 1901compliance inspection shall be to serve as proof to the customer that all applicable standards have been met or exceeded by the responsible aerial manufacturer. The following objectives shall be achieved as a result {this listing shall not be construed as being all inclusive):

a. Ensure that understanding of all parties respective responsibilities have been addressed by the actual referencing of NFPA 1901 and the amendments in these specifications and the purchase contract and documentation.
b. Ensure that only structural materials complying with appropriate standards and codes, are used for construction.
c. Ensure that applicable standards of design and manufacture have been met or exceeded.
d. Ensure that Safety Factors have been met or exceeded where required.
e. Ensure that applicable standards for testing and inspection have been met or exceeded by personnel with the appropriate qualifications, experience, and certifications.
f. Ensure that where applicable; components, equipment, and loose equipment carry the appropriate characteristics, classifications, and I or certifications.
g. Ensure that in general and whole, all applicable requirements set forth in NFPA 1901, newest revision; and those codes, standards, and specifications referenced by said; are met, exceeded, and I or addressed.

Comply with Section 3.78: YES_____NO_____

Bidder Response Section 3.78:

3.79 Illustrated Aerial Operation/Maintenance Manuals

Four (4) thumb drives and two (2) hard copies containing operation and maintenance manuals shall be provided at the time of delivery. These manuals shall be written in a "step by step" format for ease of reference.

a. Information included in the manuals shall include, but no be limited to the following:
b. Manufacturer Defined Terminology; {to help impart full understanding of terminology used in the manuals)
c. Safety Information & Warnings; (to warn of dangerous conditions I personnel injury I equipment damage)
d. Complete Rated Capacities Information; {allowable loads & GPM flows)
e. Complete & Detailed Operating Systems Descriptions; (to impart understanding of operation I capabilities I working principles)
f. Instruction for Manufacturer Recommended Deployment & Operation of All Systems During All Specific Conditions; {to ensure safer- more efficient operation of the aerial device) Current, Actual Illustrations of Aerial Components Throughout the Manual; (to aid in location of specific components, being addressed in the manual)
g. Complete Maintenance Instructions I Methods I Materials /Intervals I And Inspections.

Comply with Section 3.79: YES_____NO_____

Bidder Response Section 3.79:

3.80 Special Tools Package

Special tools required for periodic maintenance of the aerial device shall be provided with the apparatus at the time of delivery. These tools shall be as follows:

a. One (1) 1/2" drive, torque wrench
b. One (1) 1/2" drive, 15/16" socket
c. One (1) combination 1/2" x 9/16" box end wrench

d. One (1) set of allen wrenches (5/64", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4")

The special tools package above shall be provided as standard equipment by the aerial manufacturer.

Comply with Section 3.80: YES_____NO_____

Bidder Response Section 3.80:

3.81 Manual Rotation Drive Tool

As required by NFPA 1901, newest revision, one (1) manual rotation drive tool shall be provided to rotate the turntable in the unlikely event of power loss. This drive tool shall be provided as standard equipment, and shall not be "optional" equipment.

Comply with Section 3.81: YES_____NO_____

Bidder Response Section 3.81:

3.82 Aerial Device Instruction Provided

3.82.1 A factory authorized aerial apparatus engineer shall instruct the fire department personnel in the safe operation and maintenance of the entire apparatus. The instruction shall last for a period of five (5) days. During the instruction period, users shall observe operation of the aerial device as well as themselves operating it. Instruction/demonstration shall take place covering the following items (this list is not intended to be all inclusive).

a. Aerial rated load capacity /load minder.
b. Acceptable aerial operational performance parameters and characteristics.
c. Proper aerial device deployment conditions.
d. Safety during aerial operations.
e. Aerial device care and maintenance.
f. Use of the operation and maintenance manuals.

3.82.2 The instruction period and content shall be so designed to provide department personnel with basic fundamental aerial training as recommended by the aerial manufacturer. This training period may include a "classroom" type of instruction as well as "hands-on" training of the apparatus. Training aids utilized by the instructor, which are to be considered in addition to the operations and maintenance manuals are encouraged. Upon completion of the training course, all attendees will have been provided the proper instructional training, which shall provide the operational knowledge necessary in order to feel comfortable with the aerial operations and continue additional training as set forth by the department training officer.

Comply with Section 3.82: YES_____NO_____

Bidder Response Section 3.82:

3.83 Twenty Year Aerial Warranty

The aerial device shall have a twenty (20) year warranty, parts and labor. The warranty shall be provided with the apparatus at the time the apparatus is placed in service by Riverside County Fire.

Comply with Section 3.83: YES_____NO_____

Bidder Response Section 3.83:

3.84 Aerial Corrosion Protection

3.84.1 The majority of the internal structural members of the aerial structure shall be 100% concealed from oxygen. Totally concealed members are not subject to the possibility of corrosion attacking the metal from the interior. Structural tubing of the aerial structure that contains drilled holes or is exposed to outside air

and elements shall be protected to eliminate the possibility of corrosion occurring from the inside of the tube.

3.84.2 The interior of exposed tubing shall be coated with a compound labeled NWAC 120-4. The application of the coating shall be applied after the welding process of the aerial structure is complete and shall cover 100% of the interior of the structural tube.

3.84.3 NWAC 120-4 is an effective cavity corrosion inhibitor that provides long-term protection for both ferrous and non-ferrous metals. The resulting water-repellant, flexible, air-dried film has a remarkable crevice penetrating, spreading and clinging characteristic. The product dries to a nearly transparent film and provides maximum corrosion protection for all void spaces subject to humidity and condensation.

3.84.4 Use of this process shall constitute a 20-year internal corrosion warranty for the aerial structure.

Comply with Section 3.84: YES_____NO_____

Bidder Response Section 3.84:

3.85 NFPA Safety Factor and Rated Capacities

The methodology, definitions, testing, and criteria used by the aerial manufacturer to determine the preceding and following Safety Factor and Rated Capacity of the aerial device shall be in strict compliance with the definitions of such, as found in NFPA 1901, newest edition and these specifications.

Comply with Section 3.85: YES_____NO_____

Bidder Response Section 3.85:

3.86 Aerial Device Safety Factor & Rated Capacity

The County desires to purchase with these specifications, an aerial device with a minimum 2.0:1 Safety Factor as required and defined by NFPA 1901 newest edition. Therefore, the aerial manufacturer shall hereby certify, by submitting a bid for these specifications; that the aerial device meets or exceeds the following requirements. The design stress or primary stress within all structural load supporting members of the aerial device shall not exceed 50% of the minimum as welded yield strength of the material based on the combination of the dead load of the aerial + the rated capacity of 750 LBS. at the tip of the aerial; at a 90 degree angle to ladder centerline; with the structural load supporting members of the aerial device at either; an ambient temperature of 75 degrees F or an elevated temperature of 350 degrees F- thereby exhibiting a minimum 2.0:1 Safety Factor in all feasible operational conditions. These capabilities shall be valid and true when the apparatus is deployed in the unsupported configuration, based upon 360 degree rotation, up to full extension, and at any degree of elevation (-11 to +72) that the aerial can achieve.

Comply with Section 3.86: YES_____NO_____

Bidder Response Section 3.86:

3.87 Aerial Device Safety Factor Service Life

The County desires to purchase with these specifications, an aerial device with a safety factor that remains NFPA compliant and constant throughout the life of the aerial device. The Safety Factor of every structural load bearing member in the aerial device shall remain above 2.0:1 for a "Safety Factor Service Life" of up to 20 years minimum.

Comply with Section 3.87: YES_____NO_____

Bidder Response Section 3.87:

3.88 Tiller Aerial Construction Standards

3.88.1 The aerial ladder shall be of the mid mount design with the turntable mounted directly behind the cab of the apparatus, and the ladder extending toward the rear of the apparatus when in the bedded position.

3.88.2 The aerial ladder shall be comprised of four sections and shall extend to a nominal height of 100' at 72 degrees, measured in a vertical plane from the top rung of the fly section (not including the egress) to the ground.

Comply with Section 3.88: YES_____NO_____

Bidder Response Section 3.88:

3.89 Operational Envelope/Reach

The aerial ladder shall have an operations range of -5 degrees elevation to +72 degrees elevation. The aerial device shall have a minimum horizontal reach of 100' and shall be measured from the turntable centerline to the outermost rung on the outermost fly section, with the aerial at full extension and at 0 degrees elevation. Reach and height shall be measured in accordance with the requirements set forth in NFPA 1901, latest edition.

Comply with Section 3.89: YES_____NO_____

Bidder Response Section 3.89:

3.90 Structural Material

3.90.1 The primary load support members of the ladder shall be constructed of certified 70,000 PSI yield strength (minimum) steel tubing. Each section shall be trussed diagonally, vertically, and horizontally using welded steel tubing. All critical points shall be reinforced for extra rigidity and to provide a high strength to weight ratio.

3.90.2 All ladder rungs shall constructed of A606 Type 4 certified steel tested per ASTM A370 standards. A606 Type 4 exhibits superior corrosion resistance over regular carbon steel as a result of the development of a protective oxide film on the on the surface. A606 Type 4 shall meet a minimum 6.0 Atmospheric Corrosion Factor. The ladder rungs shall be round and welded to each section utilizing "K" bracing for torsional rigidity.

Comply with Section 3.90: YES_____NO_____

Bidder Response Section 3.90:

3.91 Lifting Eyes

Two (2) lifting eyes will be provided at the end of the ladder fly section. The lifting eyes will give the fire department the capabilities to perform short haul and high point rescuer systems from the ladder fly section. The lifting eyes shall be third party tested and certified with the device for a minimum capacity of 250lbs each. The rating will include a 2:1 safety factor. The lifting eyes shall not be mounted onto the egress section at the tip of the ladder.

Comply with Section 3.91: YES_____NO_____

Bidder Response Section 3.91:

3.92 Primary Dimensions

3.92.1 The inside dimensions of the ladder shall be as follows: (Minimum width)

a. Base Section – 42.25”
b. First Fly Section – 34”
c. Second Fly Section – 27.50”
d. Last Fly Section - 22”

3.92.2 The height of the handrails above the center line of the rungs shall be as follows: (Minimum height)

a. Base Section - 29.25"
b. First Fly Section – 24"
c. Second Fly Section – 20.25"
d. Last Fly Section – 17.25"

Comply with Section 3.92: YES_____NO_____

Bidder Response Section 3.92:

3.93 Rung Coverings

Each rung shall be covered with secure, heavy duty, deep serrated rubber sheathing. Attachment of the sheathing to the rung shall be by mechanical means and an adhesive application. Under no circumstance shall the rung covers turn when a rung is at ambient temperature (75 degrees F) or at an elevated temperature (350 degrees F); there shall be No Exception to this requirement for the safety of persons climbing the ladder sections. The sheathing shall be easily replaceable if the rubber becomes worn, however the rung covers shall be designed, constructed, and installed with lifetime service as the objective.

Comply with Section 3.93: YES_____NO_____

Bidder Response Section 3.93:

3.94 Bolt-on Egress

3.94.1 A bolt on removable egress shall be installed on the tip of the fly section. Only certified structural fasteners shall be utilized to attach the egress to the tip of the fly section. Additionally, the fasteners shall be stainless steel. This design shall allow for easy replacement should the egress become damaged during rescue operations. This shall prevent the department from experiencing serious downtime, as is common with welded on egresses. For this reason, a design that allows the egress to be welded to the fly section shall not be acceptable.

3.94.2 When the ladder is at 0 degrees' elevation, the rung(s) on the egress shall be on a plane of -11 degrees. This shall provide a smoother transition onto the ladder when it is at a high angle elevation.

3.94.3 Additionally, the egress shall have handrails that match the fly section handrails for an unnoticeable transition between the two. The egress handrails shall have a radius design at the tip to eliminate two comer joints, increase strength, and provide a professional appearance.

3.94.4 The rung(s} on the egress shall be held to the same design load criteria as the rungs of the aerial ladder sections. This shall mean that each egress rung shall be able to support a design load of 750 lbs. Minimum, distributed across the rung, as specified in NFPA 1901, newest revision. This shall be more than that required by the afore mentioned standard. No Exceptions shall be allowed to this requirement.

3.94.5 The bolt on egress color shall meet current NFPA requirements.

Comply with Section 3.94: YES_____NO_____

Bidder Response Section 3.94:

3.95 Turntable

The turntable shall be designed in such a manner as to allow a generous working area, regardless of the position of the aerial. The turntable shall allow ample working room, within the perimeter hand-rail with the aerial positioned at maximum elevation. The turntable shall also be designed to allow for the most efficient use of space on the apparatus body as follows:

a. The turntable shall be a minimum of 95" side to side and 95" forward to aft. It shall be covered with Treadbrite decking to allow the walking surface to shed liquids with unparalleled ease and comply with NFPA intent, so as to provide secure footing for the operator in all weather conditions.

b. A downward lip shall "skirt" the turntable decking around the entire circumference to provide protection from hazards.
c. The three handrails shall each be of one piece construction and provide large sweep corners at the edge of the turntable. Each shall be 42" high and be covered with deeply serrated rubber sheathing for maximum grip in all environments. The handrails shall be installed around the rear 180 degree perimeter of the turntable for operator and personnel safety. Each individual handrail shall be secured to the turntable by the use of two (2) minimum 5/8" anchor bolts on the underside of the turntable. Additionally, chrome plated stanchions with rubber gaskets shall be provided on the top surface of the turntable where each railing meets the decking surface.
d. A stainless-steel swing arm which swings inward and upward shall, be installed in the two gaps between the handrails. These swing arms shall be permanently attached at one end.
e. All hoses and electrical lines shall be routed under removable covers so they do not present a tripping hazard. The covers shall also be designed to prevent damage from occurring to these components. Likewise, the center of the turntable shall have a removable step cover to prevent tripping hazards as well as provide for easier transition to the first rung of the aerial ladder.

Comply with Section 3.95: YES_____NO_____

Bidder Response Section 3.95:

3.96 Aerial Pivot Pins

The aerial device pivot pins shall be located on the turntable and shall attach the aerial device base section to the turntable. To maintain a suitable safety factor, the pivot pins shall be composed of certified structural steel, thereby ensuring structural integrity. In the interest of safety, the pivot pins shall be located as low as possible, and shall be at the aerial device base rails. This shall keep the pivot points away from the areas where persons egressing to and from the aerial base section, might place their hand(s). Aerial pivot pins shall be installed with a means provided to keep the pins in place. The design shall not inhibit the pins from being removed by a trained mechanic.

Comply with Section 3.96: YES_____NO_____

Bidder Response Section 3.96:

3.97 Turntable Work Lighting

The turntable shall be lighted for night time operation as follows:
a. Minimum of three (3) LED work lights which shall be automatically activated by the aerial master switch (day or night). The work lights shall be so positioned that the light shall be directed toward the decking.
b. The lights shall have integral chrome hoods to keep light from glaring upward into the operator's eyes.
c. An additional light shall be recess mounted in the front access door of the control stand.
d. The turntable shall have LED strip lighting incorporated into the handrailing. The handrail lighting shall come on with the battery switch in the "ON" position and shall turn off when the parking brake is released.

Comply with Section 3.97: YES_____NO_____

Bidder Response Section 3.97:

3.98 Fly Section Folding Steps

The fly section on the aerial shall have two (2) sets of folding steps incorporating toe stops with a 2" flange and no-skid surface. The steps shall be installed approximately 42" and 70" below the top rung. When deployed, the stepping surfaces shall be perpendicular to the ladder base section. The steps shall be as large as design shall permit but far enough apart to allow clearance for a charged 3" water hose. The steps shall be easily foot actuated by a firefighter wearing turnout boots.

Comply with Section 3.98: YES____NO____

Bidder Response Section 3.98:

3.99 Aerial Tip Floodlights

Two (2) Federal COMLS15K-NH LED floodlights shall be provided, one (1) light to be mounted on the left and right tip of the ladder. Each light shall be provided with a switch and operated independently from the turntable. Provide impact guards whenever lights are susceptible to damage from roof operations.

Comply with Section 3.99: YES____NO____

Bidder Response Section 3.99:

3.100 Heavy Duty Ladder Travel Support

A heavy-duty ladder rest shall be provided for support of the ladder in the travel position. The travel support shall be fabricated from heavy duty steel tubing. The travel support shall be designed to be easily removable to allow for ease of maintenance and repair when necessary. The base section of the ladder shall contain stainless steel scuff plates shall where the ladder comes into contact with the ladder support. An indicator light shall be provided on the turntable to indicate when the ladder is aligned with the travel support and may be lowered into it. The ladder rest shall be attached to the torque box for added stability. The ladder rest shall be illuminated for night time operation. The illumination light shall automatically turn on with the aerial master switch.

Comply with Section 3.100: YES____NO____

Bidder Response Section 3.100:

3.101 Bed Zone Indicators

There shall be fixed bed zone indicators mounted on the deck and the turntable.

Comply with Section 3.101: YES____NO____

Bidder Response Section 3.101:

3.102 Ladder Hold-Down Mechanism

There shall be a hold-down mechanism install on each side of the ladder travel support that shall keep the aerial structure from bouncing and banging due to road hammer. The system shall be designed in such a manner as to automatically unlatch the hold-downs when the aerial hydraulic system is activated. The hold-downs shall automatically lock in the road position when the hydraulic system is shut down.

Comply with Section 3.102: YES____NO____

Bidder Response Section 3.102:

3.103 Elevation System

3.103.1 Two (2) double acting lift cylinders shall be utilized to provide smooth precise elevation from 5 degrees below horizontal to 75+ degrees above horizontal. The lift cylinders shall have a 6" internal diameter (bore) and a 2.5" solid cylinder rod. The lift cylinders shall be equipped with integral holding valves located on the cylinder to prevent the unit from lowering should the charged lines be severed at any point within the hydraulic system.

3.103.2 The lowering of the ladder shall be controlled by a pressure limiting valve so as to limit the downward pull of the ladder when it is bedded. Both raising and lowering functions shall be influenced by flow

compensation which shall maintain ladder tip speed within the design speed regardless of load, angle, or extension. Ladder tip speed shall be decelerated above 65 degrees in order to reduce "tip-lash". Ladder lowering shall be controlled on the down motion to prevent the cylinders from completely retracting, thus allowing a cushion of oil for continuous ladder load readout.

3.103.3 Elevation cylinder upper and lower pivot pins shall be installed with a means provided to keep the pins in place. The design shall not inhibit the pins from being removed by a trained mechanic.

Comply with Section 3.103: YES_____NO_____

Bidder Response Section 3.103:

3.104 Extension/Retraction System

3.104.1 A full hydraulic powered extension and retraction system shall be provided using two sets of siamese hydraulic cylinders and cables. Each set shall be capable of operating the ladder in the event of a failure of the other. The extension cylinders shall each have a 3.5" internal diameter (bore) and a 1.5" diameter solid rod. Extension and retraction of the telescopic sections shall be internally limited within the cylinders, eliminating excess strain on the cables, sheaves, and ladder structure. Each of the cylinder, cable, and sheave assemblies shall be completely independent of the other, so as provide a safety factor wherein a failure of one assembly will not affect the function and operation of the other. The extension cylinders shall be equipped with counter balance holding valves to synchronize the cylinders for smoother operation and prevent the unit from retracting should the charged lines be severed at any point within the hydraulic system.

3.104.2 The reeling of the cable shall be such as to provide synchronized, simultaneous movement of all sections from full extension to full retraction. All pulleys and sheaves shall be enclosed as an added safety feature as well as to prevent personnel on the ladder from becoming entangled in them.

Comply with Section 3.104: YES_____NO_____

Bidder Response Section 3.104:

3.105 Certified Cable Swaged Shackles

All swaged shackles ends shall have a certification test from the manufacturer of the assembly.

Comply with Section 3.105: YES_____NO_____

Bidder Response Section 3.105:

3.106 Wear Pads/Bearing Surfaces

3.106.1 Nylon wear pads impregnated with molybdenum disulfide and high in molecular weight shall be used between the telescoping sections for maximum weight distribution, strength, and smoothness of operation. This impregnation shall provide a lubricating function. Stainless steel adjustment screws shall be provided on the wear pads to permit proper side tension.

3.106.2 Stainless steel adjustment screws shall be provided on the wear pads to permit proper side tension. Plates shall be installed on the side(s) of the slide pads where adjustment screws come into contact with them. No Exceptions shall be allowed to this requirement to keep the adjustment screws from embedding themselves into the pads which may cause the pad to crack and fail. The manufacturer shall provide one (1) set of replacement wear pads.

Comply with Section 3.106: YES_____NO_____

Bidder Response Section 3.106:

3.107 Retraction Safety System

An integral part of the extension/retraction system shall be a safety system to prevent injury to personnel on the end of the fly section while the ladder is being retracted. This system shall be designed in such a manner as to prevent retraction of the aerial device any time the folding steps at the end of the fly section are in overlap with the rungs of another section. When the steps are in an overlap condition, retraction shall only be accomplished by an operator at the primary control station depressing and holding a momentary switch while the retraction control is operated.

Comply with Section 3.107: YES_____NO_____

Bidder Response Section 3.107:

3.108 Rotation Bearing

3.108.1 A 44-inch diameter external tooth, swing circle bearing shall be used for the rotation system. The bearing shall provide 360-degree continuous rotation. The bearing shall be designed specifically for the aerial device in lieu of the aerial device being designed to accommodate a particular bearing.

3.108.2 The turntable shall be bolted to the bearing using forty (40), SAE grade 8, .625" diameter bolts. The bearing shall be bolted to the base support structure with sixty (60}, Grade 8, .625" diameter bolts. Welding on the bearing in any manner shall not be acceptable.

3.108.3 The turntable base and the torque box bearing plate surfaces that contact the bearing shall be machined to prevent loading the bearing when the attaching bolts are brought to full torque. Machining of the surfaces shall be done after all welding to assure no further distortion of the material.

3.108.4 Shims shall not be acceptable as they shall reduce the surface contact area significantly thereby causing a concentration of forces at the shims.

Comply with Section 3.108: YES_____NO_____

Bidder Response Section 3.108:

3.109 Bolt Torquing From Tope Side

All rotation bearing bolts shall be able to be torqued from the top side of the turntable without the bolt or nut being held under the turntable by a person. This shall require a design that shall stop all chance of the bolt "spinning" while torque is being applied to the fastener. Application of Loctite or a similar compound alone, without any other means provided to hold the fastener; shall not be acceptable. Additionally, this design feature shall not incorporate drilling, bending, welding on, or in any way; modifying the structural fastener, nut, or washers.

Comply with Section 3.109: YES_____NO_____

Bidder Response Section 3.109:

3.110 Rotation Gear Reduction Box

3.110.1 A hydraulically driven planetary gear box with a drive speed reducer shall be used to provide infinite and minute rotation control throughout the entire rotational travel. The Rotation gear reduction box shall be installed on the top side of the turntable so that it is easily accessible, yet it shall be installed so that it does not provide an obstruction or tripping hazard to persons on the turntable. Specifically, it shall be installed toward the front of the turntable, under the aerial ladder base section. Under no circumstance shall the gear box present any interference with the aerial device, even at low elevations.

3.110.2 A spring applied, hydraulically released disc type swing brake shall be furnished to provide positive braking of the turntable assembly.

3.110.3 Provisions shall be made for manual operation of the rotation system should complete loss of hydraulic power occur. These provisions shall include a hand crank supplied with the unit.

3.110.4 The hydraulic system shall be equipped with pressure relief valves which shall limit the rotational torque to a nondestructive power. All moving parts of the rotation gear reduction box shall be enclosed or under the turntable decking so that no safety hazards are present.

Comply with Section 3.110: YES_____NO_____

Bidder Response Section 3.110:

3.111 Rotation Interlocking System

3.111.1 The aerial device shall be equipped with a rotation interlock system to prevent the ladder from being rotated to any side where the stabilizers are not sufficiently extended to provide for the full tip load rating.

3.111.2 The system shall monitor the stabilizers for extension. When a stabilizer is not sufficiently extended (short jacked) to provide full tip load rating, the system shall prevent the aerial from being rotated more than 12 degrees past the front or rear centerline into the short-jacked side of the apparatus.

3.111.3 Once activated, the system shall prevent the aerial from being rotated past the front or rear corner of the apparatus where a stabilizer is not properly deployed.

3.111.4 A slowdown feature shall be built into the rotation interlock system. When the aerial is operating in a short-jacked mode, the rotational speed shall be automatically reduced, by approximately 50%, when the aerial is rotated to within approximately 10 degrees of the front or rear centerline of the apparatus. The rotational speed shall remain reduced throughout an arc of approximately 20-degrees over the front or rear of the apparatus, regardless of the direction of the rotation movement.

3.111.5 The rotation function shall automatically stop when the aerial approaches the front or rear corner area of the short-jacked side of the apparatus.

3.111.6 The rotation interlock system shall allow for normal operation on the side of the apparatus where the stabilizers are sufficiently extended for full tip load rating.

3.111.7 Whenever the manual override is activated and aerial is rotated into the short-jack side of the apparatus, the rotation speed shall be automatically reduced by approximately 50%. All secondary controls, other than those on the main pedestal, shall be locked out and become inoperative when the rotation interlock override is activated.

Comply with Section 3.111: YES_____NO_____

Bidder Response Section 3.111:

3.112 Apparatus Body Damage Control Interlock System

3.112.1 A safety feature shall be included in the aerial operational system that minimizes the possibility of damage to the apparatus body at all angles for all standard (non-override) operational modes.

3.112.2 The system shall automatically stop the downward movement of the aerial at a preset angle of elevation unless the aerial has been rotated left or right, from the center of the ladder support. Once this rotation point is reached, full range downward movement (to minus 8 degrees) shall be allowed.

3.112.3 The aerial manufacturer shall determine and set the angle of elevation where downward aerial movement is stopped. The highest point of an apparatus, in relation to the distance from the turntable, shall be used to determine the preset elevation angle stopping point.

3.112.4 The system shall also minimize the possibility of accidental damage to the apparatus body from aerial rotation whenever the aerial elevation is below the preset elevation angle stopping point.

3.112.5 Rotational speed shall be reduced by approximately 50% when the aerial is rotated to within a minimum of 10 degrees of a body avoidance stopping point. Aerial rotation shall automatically stop before the aerial contacts the body of the apparatus.

3.112.6 The body damage interlock system shall have no effect on aerial operation when the aerial is raised above the preset downward movement stopping point.

Comply with Section 3.112: YES_____NO_____

Bidder Response Section 3.112:

3.113 Aerial Stow Operation Interlock System

A safety feature shall be included in the aerial operational system that limits the possibility of damage to the apparatus when stowing the aerial. The stow-zone shall be approximately 2-degrees of rotation to the left and right side of the center of the aerial bed support. Once this stow-zone envelope is attained and aerial is fully retracted, downward movement of the aerial shall be allowed for proper positioning into the bed-support. An indicator light shall be located at the turntable control station to inform the aerial operator when the stow-zone envelope is attained.

Comply with Section 3.113: YES_____NO_____

Bidder Response Section 3.113:

3.114 Torque Box

A "torsion box" sub-frame shall be installed on the tiller trailer frame rails, integral with the stabilizers. The torque box shall be constructed of .375" steel plate with the exception of the turntable area which shall be .50" steel plate. The standard dimensions of the torque box shall be 43" wide x 26" high x 248" long, these dimensions may vary. The torque box sub-frame assembly shall be capable of withstanding all torsional and horizontal loads when the unit is on the stabilizers. The torque box shall be bolted in place to the chassis frame rails using twenty-four (24) .62" SAE grade 8 bolts with nuts. The torque box shall have a section modulus of 516.9 ln3 and a resistance to bending moment of 18,611,273 inch pounds.

Comply with Section 3.114: YES_____NO_____

Bidder Response Section 3.114:

3.115 Front Stabilizers, Tiller

3.115.1 One (1) set of stabilizers shall be installed for stability. The set of stabilizers shall have a minimum of 16' spread and shall be of an Extending Box Beam "H" Style.

3.115.2 The stabilizers shall be located in the forward section of the tiller trailer. The stabilizers shall be an integral part of the torque box. A heavy-duty undersling assembly shall attach the stabilizers to the front portion of the torque box. The undersling assembly shall be constructed of 6" x 10" x 1/2" square tubing, 1/4" & 3/8" steel gussets and 1/2" mounting plates. The overlap of the undersling and the torque box shall be a minimum of 24". The bottom side of the tubes shall contain a truss assembly that shall maximize the torsional strength of the undersling assembly.

3.115.3 The stabilizers and torque box shall be attached to the trailer frame in six (6) separate locations, three (3) each side of the apparatus, utilizing 1/2" steel plate. The mounting plates shall be located directly under the front stabilizers utilizing eight (8) grade 8 .625" size bolts per side and under the front torque box area utilizing six (6) grade 8 .625" bolts per side.

3.115.4 The stabilizers shall be of the double box tube design with jack cylinders that have a 5" internal diameter (bore) and a 2.5" diameter solid cylinder rod. The jack cylinders shall be equipped with integral holding valves which shall hold the cylinders either in the stowed or the working position should a charged line be severed at any point within the hydraulic system.

3.115.5 Vertical jack cylinder rods shall be fully enclosed by a telescoping inner box to protect the cylinder rods, seal glands and pistons against damage from nicks, abrasion, and chrome damage. All vertical stabilizer cylinders shall be removable through the top of the box tube. Vertical stabilizers that require cylinders to be removed from the bottom shall not be acceptable. The inner double box system shall be further designed to stabilize the column load imparted upon the cylinder rod, thereby also protecting against damage which may occur from lateral loading which may be caused by side slopes, shifting or sliding of

the apparatus on icy or unstable surfaces, sudden sinking of one or more jack pads, or on scene collision while the aerial device is deployed.

3.115.6 The stabilizers shall be connected to the hazard light circuit to warn the driver if they are not stowed when the parking brake is released.

Comply with Section 3.115: YES_____NO_____

Bidder Response Section 3.115:

3.116 Stabilizer Stroke

The stroke of the stabilizers shall be a minimum of 25". The stabilizer pad shall be maintained at a stored height of approximately 12" to 15" (dependent on required ground clearance and angle of departure) resulting in a minimum ground penetration of 10" or greater.

Comply with Section 3.116: YES_____NO_____

Bidder Response Section 3.116:

3.117 Hot Dip Galvanizing

The extending front stabilizer beams, inner jack tubes, and stabilizer pads shall be wheel-a-braided to remove any mill scale, or contamination prior to galvanizing. Following this preparation, the individual components shall be hot dip galvanized. The galvanizing process shall require that the entire assembly be completely submerged. Following the galvanizing process, the surface shall be ground smooth to remove dross. This preparation shall provide maximum protection for these critical components. No exceptions shall be allowed to this requirement due to stabilizers being exposed to salt spray and road debris.

Comply with Section 3.117: YES_____NO_____

Bidder Response Section 3.117:

3.118 Stabilizer Extension System

Extension of the stabilizer horizontal beams shall be activated by dual extension cylinders which shall each have a 2" internal diameter (bore) and a 1.25" diameter cylinder rod. The extension cylinders shall be totally enclosed within the extension beams to prevent damage to the rod and hoses. The extension beams shall be 6.00" x 8.00" x .375" wall steel tubing with a .62" steel plate welded to the top and bottom of each beam.

Comply with Section 3.118: YES_____NO_____

Bidder Response Section 3.118:

3.119 Wear Pads/Bearing Surfaces

3.119.1 Nylon wear pads impregnated with molybdenum disulfide and high in molecular weight shall be used between the stabilizer housing assembly and the extension tube for maximum smoothness of operation.

3.119.2 Two (2) Nylatron wear pads shall be installed in each stabilizer extension system. There shall be one wear pad located on the top back portion of the extension tube assembly that shall glide on the inner wall of the top housing tube wall. There shall be an additional pad located on the inner wall of the bottom housing tube wall that shall separate the bottom side of the extension tube and the bottom wall of the housing tube. The pads shall be installed in such a manner as to reduce friction for ease of operation and to reduce the amount of metal to metal contact.

3.119.3 Each stabilizer down-jack housing tube shall contain four wear pads, one (1) on each side of the tubes.

Comply with Section 3.119: YES_____NO_____

Bidder Response Section 3.119:

3.120 Mechanical Stabilizer Locks

3.120.1 Each vertical jack cylinder shall be equipped with a mechanical pin lock to hold it in the working position. The pin shall be zinc plated and shall have a yellow dipped vinyl handle for increased visibility. The locking system shall be incorporated with the protective tubing used to prevent damage to the jack cylinder rod. The inner and outer jack tubes shall be double thickness in the pinning area for additional strength.

3.120.2 Safety is of the utmost concern. It is the intent of the fire department to purchase an apparatus that utilizes mechanical stabilizer locks in addition to the hydraulic holding valves integral to the stabilizer jacks. Should a mechanical failure occur with the stabilizer system or hydraulic seepage cause a stabilizer to drift, the mechanical locks shall keep the desired "stabilizer set-up" intact without compromising aerial capabilities or safety. There shall be no exception allowed to this requirement.

Comply with Section 3.120: YES_____NO_____

Bidder Response Section 3.120:

3.121 Stabilizer Lights

3.121.1 **Stabilizer Work Lights**
Federal Signal Commander 750-SQ LED flood lights shall be provided at each stabilizer location to illuminate the surrounding area. The lights shall be activated by the aerial master switch.

3.121.2 **Stabilizer Arm Warning Lights**
Two (2) Federal Signal Micropulse LED red flashing lights shall be mounted below each stabilizer beam, facing front and rear. These warning lights shall be activated by the aerial master switch.

3.121.3 **Stabilizer Cover Warning Lights**
There shall be one (1) Federal Signal Quadraflare 4x6” LED flashing light installed on each extending stabilizer cover panel. These lights shall be red in color and activated by the aerial master switch.

Comply with Section 3.121: YES_____NO_____

Bidder Response Section 3.121:

3.122 Manual Angle Level System, Tiller

The fire truck leveling system shall consist of two manual angle level gauges located at each stabilizer control station. One of the gauges shall measure the side to side angle of the apparatus and the other shall measure the fore to aft angle of the apparatus. The gauges shall have a sight bubble that shall measure the angle in two degree increments.

Comply with Section 3.122: YES_____NO_____

Bidder Response Section 3.122:

3.123 Auxiliary Stabilizer Pads

An auxiliary pad for additional load distribution on soft surfaces shall be supplied for each stabilizer. The stabilizer pads shall have an aluminum "U" shaped slot installed on the pad to allow pad to be placed on the stabilizer prior to ground engagement to aid in positioning the stabilizer pad.

Comply with Section 3.123: YES_____NO_____

Bidder Response Section 3.123:

3.124 Cradle Interlock System

A cradle interlock system shall be provided to prevent the lifting of the ladder from the nested position until the operator has positioned all of the stabilizers in a load supporting configuration. A switch shall be installed at the cradle to prevent operation of the stabilizers once the aerial has been elevated from the nested position. There shall be a manual override switch that allows the ladder to be lifted from the cradle when the aerial is set up in the "Short-Jacked" configuration.

Comply with Section 3.124: YES_____NO_____

Bidder Response Section 3.124:

3.125 Ground Control Station

3.125.1 A control station shall be located in close proximity to the stabilizer controls, on each side of the tiller body, in an easily accessible area. The control panel shall be illuminated for night time operation. The following items shall be furnished at the control console, clearly identified and located for ease of operation and viewing:

a. Individual stabilizer down indicator lights
b. Aerial PTO engaged indicator light
c. High idle switch with indicator light
d. Emergency hydraulic pump control with indicator light
e. Fifth wheel interlock light

A weather proof compartment shall be furnished behind the control panel and shall contain the aerial circuit breakers, interlock components and control circuit distribution terminals.

3.125.2 **Hydraulic Stabilizer Controls**

a. The controls shall be designed to allow the stabilizers to be operated independently so that the vehicle may be set up in a restricted area or uneven terrain. No Exceptions.
b. An automatic diverter valve shall be provided in conjunction with the stabilizer controls as a safety device. The diverter valve shall allow the hydraulic fluid to flow either to the stabilizer circuit or the turntable and ladder circuit, but not both simultaneously.
c. A stabilizer deployment warning alarm shall be provided at each stabilizer to warn personnel. The warning alarm shall deactivate only when all stabilizers are in the load supporting configuration.
d. There shall be a manual override switch that allows the ladder to be lifted from the cradle when the aerial is set up in the "Short-Jacked" configuration.

Comply with Section 3.125: YES_____NO_____

Bidder Response Section 3.125:

3.126 Diverter Valve

There shall be an automatic electric over hydraulic three (3) position diverter valve located at the left side of the apparatus. This diverter valve will divert hydraulic fluid to either the aerial ladder controls or the outrigger controls.

a. To prevent accidental operation of the ladder prior to the outrigger being set properly, the diverter valve will only allow hydraulic fluid to the outrigger controls until the outriggers are set properly.
b. To prevent accidental operation of the outrigger system during the aerial ladder operation, the diverter valve will only allow hydraulic fluid to the ladder controls when the aerial device is raised from the aerial travel support. In the event of electrical failure, the operator will be able to move the diverter valve to the ladder or outrigger position for continuous uninterrupted operation.

Comply with Section 3.126: YES_____NO_____

Bidder Response Section 3.126:

3.127 Turntable Control Console

3.127.1 The turntable control console shall be located on the left-hand side of the turntable (driver's side of the apparatus). The console shall be illuminated for night time operation and shall have a hinged cover that hinges to the right side. Pressurized gas filled cylinder shall be furnished on cover to hold it in the open position. The gas filled cylinder shall assist in closing the cover automatically when it is positioned over center.

3.127.2 The console surface shall be angled toward the operator so controls may be viewed and operated ergonomically. Rubber bumpers shall be provided so that when the control console lid is closed, the lid and the control panel will be protected from each other (no metal to metal contact).

3.127.3 Three (3} handles for the ladder hydraulic functions (elevation, rotation, and extension} shall be installed at the control console. The controls shall be manual for safety and durability reasons. A cast alloy plate with openings cast into it for the ladder hydraulic function levers to extend through, shall be provided to encircle the aerial ladder hydraulic function levers. The function of each control lever shall be cast into the plate under the appropriate lever.

3.127.4 The controls shall be capable of being operated independently or simultaneously with a gloved hand. The speed of movement caused by moving any control shall be minimally affected when multiple controls are moved.

3.127.5 A systems engagement control shall be installed at the control pedestal. The control shall energize the hydraulic system for ladder function and provide flow of hydraulic fluid to the master valve bank.

3.127.6 A dead man foot pedal control at the pedestal control shall be connected to the Hobs hour meter when depressed.

3.127.7 Each item provided on the console not labeled from the manufacturer, shall be provided with a permanent cast alloy label. The information on the label shall be stamped or professionally engraved for lasting durability.

3.127.8 A hinged door shall be provided on the front of the control console. This door shall be provided with a lift and tum latch. Opening of this door shall allow access to the inner components for inspection purposes. A recessed work light shall be provided in the access door.

3.127.9 There shall be a hinged access door provided on the outboard side of the control panel. The door shall be provided with a spring loaded, slotted head latch. The opening shall allow access to the electrical components for service purposes.

3.127.10 The following items shall be furnished at the console, clearly identified and located for ease of operation and viewing:

a. Elevation, Extension and Rotation Controls
b. Lighted Push/Pull Button to Deactivate Hydraulic & Electrical System
c. Fast Idle Button
d. Panel Light Mounted in Cover (LED)
e. Rung Alignment light (LED)
f. Ladder light Switches (LED)
g. Ladder Overload Warning Horn
h. System Pressure Gauge (LED)
i. LoadMinder
j. Emergency Pump Unit Switch and Light (LED)
k. Sigtronics jack with push to talk button and weather proof speaker for Kenwood radio.
l. Intercom with Controls
m. Operators Load Chart
n. Warning Signs
o. Auto Ignition Control / Remote Start

Comply with Section 3.127: YES_____NO_____

Bidder Response Section 3.127:

3.128 Hour Meter

There shall be an hour meter installed at the turntable control station, connected to the system engagement control for the aerial. The meter shall register the total hours of aerial use for scheduling periodic maintenance. Hour meter shall only run when dead man pedal is depressed. The hour meter shall be installed through the side of the turntable control console so it can be read without opening the console door.

Comply with Section 3.128: YES_____NO_____

Bidder Response Section 3.128:

3.129 Power Take-Off

The apparatus shall be equipped with a power takeoff (PTO) driven by the chassis transmission and actuated by an electric shift, located inside the cab. The PTO which drives the hydraulic pump shall meet all the requirements for the aerial unit operations. An amber light shall be installed on the cab instrument panel to notify the operator that the PTO is engaged.

Comply with Section 3.129: YES_____NO_____

Bidder Response Section 3.129:

3.130 "Thru-Drive" Hydraulic Pump

3.130.1 The hydraulic system shall be supplied by a pressure compensated, load sensing, variable gallonage type pump. The pump shall provide adequate fluid volume to allow all ladder functions to operate simultaneously, without noticeable loss of speed. The pump shall supply oil only when the ladder is in motion, thereby preventing overheating of the hydraulic oil.

3.130.2 The pump shall be a "Thru-Drive" design. This design shall be provided for applications that require a power source for additional hydraulically operated accessories or tools.

3.130.3 An interlock shall be provided that shall allow operation of the aerial device PTO shift only after the chassis spring brake has been set and the chassis transmission has either been placed in the neutral position or the drive position if the driveline has been disengaged from the rear axle.

Comply with Section 3.130: YES_____NO_____

Bidder Response Section 3.130:

3.131 Hot Shift PTO Generator

The PTO shall be capable of being operated while in "Drive". All generator powered lighting shall turn off when the transmission is put into Drive. The auxiliary A/C units shall continue to work off the generator while in drive.

Comply with Section 3.131: YES_____NO_____

Bidder Response Section 3.131:

3.132 Hydraulic System

3.132.1 The tubing and hoses used in the hydraulic system shall have a high-pressure rating, with the tubing having a minimum burst pressure of 9,600 to 17,400 PSI and the hoses being a minimum of 8,000 to 13,000 PSI.

3.132.2 The hydraulic oil tank shall have:

a. 50-gallon capacity (approximate) and a dipstick to check the oil level.
b. The oil fill shall be furnished with a cap that shall act as a ventilator provide clean fresh air into the oil tank and a 40 micron filter to provide positive protection from contaminates.
c. A magnetic drain plug shall be provided in a low point of the oil tank.
d. An easily accessible 10 micron replaceable oil filter shall be installed on the hydraulic oil tank.
e. The hydraulic oil tank shall be furnished with two pick-up tubes, one tube being used for normal operation and the other for emergency operation.
f. The emergency pick-up tube shall extend further down into the oil tank to provide for some reserve oil in case a hydraulic line is broken.
g. A sight tube shall also be located adjacent to the hydraulic tank to indicate the fluid level.
h. An electronic hydraulic fluid level indicator shall be mounted near the pedestal controls.

3.132.3 The hydraulic system shall be protected from possible hydraulic pump malfunctions by a relief valve which shall route the excess oil into the oil tank when the pressure in the hydraulic system exceeds 3,500 PSI. The hydraulic control valves shall also be protected by being plumbed to a pressure relief valve to protect them from high pressure.

Comply with Section 3.132: YES_____NO_____

Bidder Response Section 3.132:

3.133 Hydraulic Oil Level Gauge (Electronic)

There shall be an electronic hydraulic oil level gauge supplied and installed on the hydraulic oil system of the aerial. The Gauge shall consist of a sending unit located in the hydraulic oil tank and a four-light gauge display. the gauge shall read:

a. Level 4 "Acceptable"
b. Level 3 "Full"
c. Level 2 "ADD"
d. Level 1 "Stop Operation"

Comply with Section 3.133: YES_____NO_____

Bidder Response Section 3.133:

3.134 Hydraulic Pressure Gauge

There shall be a pressure gauge at the ground level control station to monitor the hydraulic system pressure. The gauge shall be liquid filled to prevent gauge shock when the hydraulic system is energized. The liquid shall not be vulnerable to freezing in subzero temperatures. Shall be located in L-2.

Comply with Section 3.134: YES_____NO_____

Bidder Response Section 3.134:

3.135 Reservoir Isolation Kit

There shall be 1/4 turn ball valves installed on the hydraulic reservoir to isolate it from the hydraulic system. This shall minimize hydraulic fluid loss when changing filter elements during routine maintenance.

Comply with Section 3.135: YES_____NO_____

Bidder Response Section 3.135:

3.136 Aerial LoadMinder System

3.136.1 There shall be a LoadMinder at the operator's pedestal that indicates the load(s} on the aerial device. The display shall be in the form of an LED illuminated bar graph. The instrument shall be readable in day and night conditions. The display shall be a "real time" display, thereby giving immediate readings to the operator. Additionally, a color-coded bar shall be above and below the actual LED bar graph, to surround the actual reading given to the operator; thereby making the display easier and faster to read. The color-coded bars shall progress from Green to Yellow, and finally to Red. When the LED bar graph illuminates, representing a load on the aerial ladder, the operator need only glace at the display to determine the load applied to the aerial device - in relation to 100% rated aerial device capacity.

3.136.2 The readout given by the display shall be continuous, shall be relative to the NFPA compliant aerial device rated capacity as stated in these specifications, and shall including (but not be limited to} the following items:

a. Accumulated equipment on any and all ladder sections, or at the tip including manufacturer installed items or customer installed items.
b. Accumulated personnel on any and all ladder sections or at the tip.
c. Accumulated ice buildup on any and all ladder sections or at the tip.
d. The total load suspended from any load lifting I rappelling eye installed by the manufacturer.
e. Any load reaction from dynamic loads placed on or realized by the aerial structure.
f. Any water weight or reactionary force realized by the aerial structure.
g. Any combination of the above items.

3.136.3 The LoadMinder as described shall be designed in such a manner that the operator will not have to refer to an angle indicator, extension tape, or load chart; or be required to guess at, or try to calculate the loads or forces applied to, or interacting with the aerial device at any given time, and in any situation. This shall be in compliance with NFPA 1901 newest revision. Systems that require the use of a load chart, angle indicator or extension tape shall not be acceptable for safety reasons.

3.136.4 The LoadMinder shall be connected to a 100-dba alarm at the operator's control station that shall sound when the ladder load is above the rated capacity. This alarm system shall also be connected to two (2) strobe lights on the end of the base section, one on each side, to provide further notice to the operator of an unsafe condition.

Comply with Section 3.136: YES_____NO_____

Bidder Response Section 3.136:

3.137 Aerial Ladder Load Chart

There shall be a load chart installed at the turntable control console of the aerial ladder. The load chart shall cover the full operating range of the ladder.

Comply with Section 3.137: YES_____NO_____

Bidder Response Section 3.137:

3.138 Emergency Pump

3.138.1 The apparatus shall be equipped with one (1) emergency hydraulic pump electrically driven from the chassis battery system. The emergency pump shall be capable of providing adequate ladder functions to stow the unit in case of main hydraulic pump failure.

3.138.2 Two (2) control switches for this emergency pump shall be provided. One switch shall be installed at each one of the following two (2) control stations; The Turntable Control Console and the Stabilizer Control Station.

3.138.3 Each control shall be a spring loaded momentary switch. A red indicator light shall be mounted adjacent to each switch to indicate activation of the emergency pump.

Comply with Section 3.138: YES_____NO_____

Bidder Response Section 3.138:

3.139 Hydraulic Swivel

The aerial device shall be equipped with a hydraulic swivel which shall connect the hydraulic lines from the hydraulic pump and reservoir to the aerial control bank at the turntable, above the point of rotation. The hydraulic swivel shall allow for 360 degrees of continuous rotation of the aerial device with no loss of speed or capacity in functions.

Comply with Section 3.139: YES_____NO_____

Bidder Response Section 3.139:

3.140 Electrical Swivel

The ladder shall be equipped with an electrical swivel to allow for 360 degrees of continuous rotation of the aerial while connecting all electrical circuits through the rotation point A minimum of thirty-two (32) collector rings shall be provided.

Comply with Section 3.140: YES_____NO_____

Bidder Response Section 3.140:

3.141 Two Station Aerial Communication System

3.141.1 There shall be a two (2) station FRC Always Clear Talking (ACT) or equal digital Intercom Annunciator system installed. The system shall have two (2) remote control panels, an automatically triggered annunciator and two (2) 115 db speakers. The annunciator/speakers shall be mounted in a protected environment. The main control station, located in the operators pedestal control console, shall normally monitor the aerial ladder tip and shall be provided with push to talk capabilities. The station at the ladder tip shall only have provisions for hands free operation.

3.141.2 Provide a separate double shielded aerial ladder communications cable for the Intercom/Annunciator system to minimize noise. The communication and lighting cables shall be routed through the ladder section to the fly tip or secured along the main and fly ladder sections, suspended between the ladder trusses between the top of the main section and bottom of the fly section. The cables shall be provided with a take-up feature to eliminate cable slack. The cables shall be provided with adequate number and size conductors to operate all communications and lighting equipment, etc.

Comply with Section 3.141: YES_____NO_____

Bidder Response Section 3.141:

3.142 Monitor Safety Interlock

The monitor safety interlock shall prevent the monitor or nozzle from coming into contact with the tiller operator's cab windshield, roof, etc. The safety interlock shall automatically stop the operator from lowering the aerial into the cradle until the monitor has been completely removed, to prevent damage. In addition, the blue bed zone indicator shall not illuminate until the ladder is aligned with the cradle and the monitor has been completely removed.

Comply with Section 3.142: YES_____NO_____

Bidder Response Section 3.142:

3.143 Akron 1494 Ladder Pipe

There shall be one (1) 1000gpm Akron Model 1494 ladder pipe and ladder pipe storage bracket provided and mounted with the apparatus. Exact mounting location shall be determined at pre-construction.

Comply with Section 3.143: YES_____NO_____

Bidder Response Section 3.143:

3.144 Angle Indicator (Lighted)

There shall be a liquid filled angle indicator mounted on the base section of the aerial ladder. The indicator shall give accurate elevation in degrees from -20 to +80 degrees in relation to level. The liquid shall be of proper viscosity and composition to stay in liquid form even when exposed to below zero temperatures. Reading of the indicator shall be accomplished by observing the position of a suspended ball in relation to the degrees of elevation as marked on the indicator housing. The indicator shall be lighted for nighttime operations.

Comply with Section 3.144: YES_____NO_____

Bidder Response Section 3.144:

3.145 Extension Indicator

3.145.1 There shall be numerals affixed to the inside of the handrail of the base section, opposite the turntable control console. The numerals shall be at appropriate intervals, indicating total aerial extension in 5 foot increments. A band on the first fly section shall align with these marks at the appropriate extension distance.

3.145.2 The extension indicator color shall be black reflective. This shall make the length of aerial extension easily readable by the operator by merely glancing at the indicators. Numerals indicating length of extension shall be placed adjacent to indicating bands.

Comply with Section 3.145: YES_____NO_____

Bidder Response Section 3.145:

3.146 Aerial Mounted Folding Attic Ladder Bracket

There shall be one (1) mounting bracket on the fly section for a 10' folding attic ladder.

Comply with Section 3.146: YES_____NO_____

Bidder Response Section 3.146:

3.147 Roof Ladder Mounting Brackets Base Section, Behind Ladder Sign

Roof ladder brackets shall be provided on the outside of the base section for a roof ladder. The brackets shall be installed between the aerial base section and the ladder signs. The brackets shall be formed using break and bend techniques for added strength and an outstanding appearance. To enhance durability, the brackets shall be coated with Line-X or equal.

a. Where the ladder rack is bolted to the aerial section or ladder sign, stainless steel fasteners shall be employed.
b. When installed in the brackets, the roof ladder shall be retained so that it will not come out of the brackets unexpectedly.
c. There shall be a total of two roof ladder brackets, one on the right side and one on the left side of the aerial.
d. Two (2) 14' roof ladder, Duo Safety 775DR (Special Width) shall be provided.

Comply with Section 3.147: YES_____NO_____

Bidder Response Section 3.147:

3.148 Aerial Special Labels

Legible, permanent signs shall be installed in positions readily visible to the operator to provide operational directions, warnings, and cautions. The signs shall describe the function of each control and provide operating instructions. Warning and caution signs shall indicate hazards inherent in the operation of the aerial device. These hazards shall include, but shall not be limited to:

a. Electrical hazards involved where the aerial device does not provide protection to the personnel from contact with, or near proximity to, an electrically charged conductor.
b. Electrical hazards involved where the aerial device does not provide protection to ground personnel who might contact the vehicle when in contact with energized electrically charged conductors.
c. Hazards from stabilizer motion.
d. Hazards that can result from failure to follow the manufacturer's operating instructions.

Comply with Section 3.148: YES_____NO_____

Bidder Response Section 3.148:

3.149 Aerial Device Specification Placard

A permanent label shall disclose the following information relative to the aerial device:

a. Make
b. Model
c. Insulated or non-insulated
d. Serial number
e. Date of manufacture
f. Rated capacity (s)
g. Rated vertical height
h. Rated horizontal reach
i. Maximum hydraulic system pressure
j. Hydraulic oil type and capacity

All other appropriate labels to ensure safe operation of the aerial device shall be permanently affixed in conspicuous locations.

Comply with Section 3.149: YES_____NO_____

Bidder Response Section 3.149:

3.150 Aerial Ladder Signs

There shall be two (2) signs measuring 16" tall x 133" long installed on the base section of the aerial ladder, one on each side. The signs shall be fabricated of 1/8" aluminum plate and shall be painted to match the aerial. The signs shall be large enough to accept a maximum lettering size of 12" high.

Comply with Section 3.150: YES_____NO_____

Bidder Response Section 3.150:

End of Section III – Aerial Body & Trailer

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4.54 Scene Lights, Rear Facing, Tiller Cab
4.55 Scene Lights Forward Facing, Tiller Cab
4.56 AMDOR Compartment Lighting, Freedom Package
4.57 Tail Lights
4.58 12 Volt Accessory Outlet in the Cab
4.59 Streamlight Rechargeable Lights
4.60 Tiller Driving Lights
4.61 Tiller Turning Lights
4.62 Go-Light Remote Control Search Light
4.63 Pedestal Mount LED Light
4.64 Visual Warning
4.65 Federal "LED" Traffic Advisor
4.66 Aerial Spotlight
4.67 Ladder Tip LED Lights
4.68 Aerial Mounted 120 Volt Receptacle
4.69 Blue LED Rung Illumination Lighting
4.70 Onan Hydraulic Generator Set
4.71 Generator Warranty Period
4.72 Frog Display
4.73 GFI Load Center
4.74 Branch Circuit Overcurrent Protection
4.75 Electric Cord Reels
4.76 Cord Reel Junction Box
4.77 Receptacle Junction Box, Duplex NEMA L5-15R
4.78 Volt Twist Lock, Single Receptacle
4.79 Kenwood Radio System
4.80 Intercom, Sigtronics, US-12S (Up To 12 Positions)
4.81 Intercom Headset
4.82 PSEC Radio System
4.83 Radio Equipment Mounting
4.84 Mobile Data Computer (MDC)

SECTION IV – ELECTRICAL

4.1 Battery

The single start electrical system shall include six (6) Harris BCI 31 925 CCA batteries with a 210-minute reserve capacity and 4/0 welding type dual path starter cables per SAE J541.

Comply with Section 4.1: YES_____NO_____

Bidder Response Section 4.1:

4.2 Battery Tray

The batteries shall be installed within two (2) steel battery housings with integrated slide-out trays located on the left side and right side of the chassis, securely bolted to the frame rails. The battery trays shall be coated with the same material as the frame. The battery trays shall include drain holes in the bottom for sufficient drainage of water. A durable, non-conducting, interlocking mat made by Dri-Dek shall be installed in the bottom of the trays to allow for air flow and help prevent moisture build up. The batteries shall be held in place by non-conducting phenolic resin hold down boards. The design for the slide-out feature shall include remote terminal studs for the battery cables to improve ease of maintenance.

Comply with Section 4.2: YES_____NO_____

Bidder Response Section 4.2:

4.3 Battery Box Cover

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

Comply with Section 4.3: YES_____NO_____

Bidder Response Section 4.3:

4.4 Battery Cable

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

Comply with Section 4.4: YES_____NO_____

Bidder Response Section 4.4:

4.5 Battery Jumper Stud

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

Comply with Section 4.5: YES_____NO_____

Bidder Response Section 4.5:

4.6 Alternator

The charging system shall include a 320 amp Delco Remy 40SI 12-volt alternator. The alternator shall include a self-exciting integral regulator.

Comply with Section 4.6: YES_____NO_____

Bidder Response Section 4.6:

4.7 Battery Conditioner

A Kussmaul 35/10 battery conditioner shall be supplied. The battery conditioner shall provide a 35-amp output for the chassis batteries and a 10-amp battery saver output. The battery conditioner shall be mounted in the cab in the LH rear facing outer seating position.

Comply with Section 4.7: YES_____NO_____

Bidder Response Section 4.7:

4.8 Battery Conditioner

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

Comply with Section 4.8: YES_____NO_____

Bidder Response Section 4.8:

4.9 Electrical Inlet

4.9.1 A Kussmaul 20-amp super auto-eject electrical receptacle shall be supplied. It shall automatically eject the plug when the starter button is depressed. A single item or an addition of multiple items must not exceed the rating of the electric inlet that it's connected to.

4.9.2 **Amp Draw Reference List:**

a. Kussmaul 1000 Charger - 3.5 Amps
b. Kussmaul 1200 Charger - 10 Amps
c. Kussmaul 35/10 Charger - 10 Amps
d. 1000W Engine Heater - 8.33 Amps
e. 1500W Engine Heater - 12.5 Amps
f. 120V Air Compressor - 4.2 Amps

4.9.3 **Electrical Inlet Connection**

The electrical inlet shall be connected to the battery conditioner.

4.9.4 **Electrical Inlet Color**

The electrical inlet connection shall include a red cover.

Comply with Section 4.9: YES_____NO_____

Bidder Response Section 4.9:

4.10 Auxiliary Electrical Inlet

4.10.1 An auxiliary Kussmaul 20-amp super auto-eject electrical receptacle shall be supplied. It shall automatically eject the plug when the starter button is depressed. A single item or an addition of multiple items must not exceed the rating of the electric inlet that it's connected to.

4.10.2 **Amp Draw Reference List:**

a. Kussmaul 1000 Charger - 3.5 Amps
b. Kussmaul 1200 Charger - 10 Amps
c. Kussmaul 35/10 Charger - 10 Amps
d. 1000W Engine Heater - 8.33 Amps
e. 1500W Engine Heater - 12.5 Amps
f. 120V Air Compressor - 4.2 Amps

4.10.3 **Auxiliary Electrical Inlet Location**
An auxiliary electrical inlet shall be installed on the left-hand side of the cab ahead of the front door.

4.10.4 **Auxiliary Electrical Inlet Connection**
The auxiliary electrical inlet shall be connected to the 110V A/C unit.

4.10.5 **Auxiliary Electrical Inlet Color**
The auxiliary electrical inlet connection shall include a blue cover

Comply with Section 4.10: YES_____NO_____

Bidder Response Section 4.10:

4.11 Siren Control Head

A Federal PA300, 200-watt siren control head shall be provided and installed in the dash panel. The siren shall feature 200-watt output, wail, yelp, air horn, PA and radio broadcast. The siren shall include a noise cancelling microphone.

Comply with Section 4.11: YES_____NO_____

Bidder Response Section 4.11:

4.12 Mechanical Siren

A Federal Signal Q2B mechanical siren shall be installed on the front bumper. The siren shall be controlled by a foot pedal on the left-hand side for the driver. The siren shall also be controlled by a push button on the right-hand side for the officer. The siren brake shall have a push button located next to the officer side siren control.

Comply with Section 4.12: YES_____NO_____

Bidder Response Section 4.12:

4.13 Horn Button Selector Switch

A rocker switch shall be installed in the switch panel between the driver and officer to allow control of either the electric horn or the electronic siren from the steering wheel horn button. The electric horn shall sound by default when the selector switch is in either position to meet FMCSA requirements.

Comply with Section 4.13: YES_____NO_____

Bidder Response Section 4.13:

4.14 Air Horn Activation

The air horn activation shall be accomplished by one (1) Linemaster model SP491-S81 foot switches located on the left-hand side for the driver. On the right-hand side for the officer will be a push button. An air horn activation circuit shall be provided to the chassis harness pump panel harness connector.

Comply with Section 4.14: YES_____NO_____

Bidder Response Section 4.14:

4.15 Electronic Siren Auxiliary Activation

The electronic siren shall include activation by the steering wheel horn button.

Comply with Section 4.15: YES_____NO_____

Bidder Response Section 4.15:

4.16 Back-up Alarm

An ECCO model 575 backup alarm shall be installed at the rear of the chassis with an output level of 107 db. The alarm shall automatically activate when the transmission is placed in reverse. A virtual button shall be provided on the Vista display and control screen to disable the backup alarm.

Comply with Section 4.16: YES_____NO_____

Bidder Response Section 4.16:

4.17 Wiring Harnesses

4.17.1 Wiring harnesses shall be the automotive type, engineered specifically for the builder's apparatus, and shall meet the following criteria. Under no circumstances shall diodes, resistors, or fusible links be located within the wiring harness. All such components shall be located in an easy to access wiring junction box or the main circuit breaker area. All wire shall meet white book, baseline advanced design transit coach specification and Society of Automotive Engineers recommended practices. It shall be stranded copper wire core with cross linked polyethylene insulation complying with SAE specification J 1128. Each wire shall be hot stamp function coded every three inches starting one inch from the end and continuing throughout the entire harness. In addition to function coding, each wire shall be number and color coded.

4.17.2 All terminals on the ends of the wiring harness shall be soldered unless a crimping tool or machine is used that gives an even and precise pressure for the terminal being used. All terminals shall be pull tested to insure their integrity.

Comply with Section 4.17: YES_____NO_____

Bidder Response Section 4.17:

4.18 V-Mux Electrical Management System

4.18.1 The apparatus shall be equipped with a V-MUX Multiplex System, no substitutes accepted. The Manufacture of the Multiplex system shall provide at a minimum three cities of reference that have at least 10 trucks operational for over a one year period. The Multiplex system hardware that is being put into the apparatus of this bid shall be field proven for a minimum of two years. Any multiplex system that has less than 200 systems in vehicles with less than two years' field time on the identical hardware that shall be put into the apparatus shall be excluded from this bid process. Any Multiplex system with a warranty higher than 1% over the past 2 years shall be excluded. There are several key benefits to multiplexing, one is to reduce the number of connections in a vehicles electrical system, because of this it is important to limit the number of modules that control certain functions of the vehicle, therefore wherever it is stated that an "add-on" module will not be acceptable, there shall be No Exceptions.

4.18.2 Outputs: The outputs shall perform all the following items without added modules to perform any of the tasks.

4.18.2.1 **Load Shedding:** The System shall have the capability to Load Shed with 8 levels any output. This means you can specify which outputs (barring NFPA restrictions) you would like Load Shed. Level 1 12.9v, Level 2 12.5V, Level 3- 12.1V, Level 4- 11.7V, Level 5 11.3V, Level 6 10.9V, Level 7 10.5, Level 8 10.1. Unlike conventional load shedding devices, you can assign a level to any or all outputs. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.2 **Load Sequencing**: The System shall be able to sequence from 0 8 levels any output. With 0 being no delay and 1 being a 1 second delay, 2 being a 2 second delay and so on. Sequencing

reduces the amount of voltage spikes and drops on your vehicle, and can help limit damage to your charging system. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.3 **Output Device:** The System shall have solid-state output devices. Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor- Field Effect Transistors); MOS-FETs are solid-state devices with no moving parts to wear out. A typical relay when loaded to spec has a life of 100,000 cycles. The life of a FET is more than 100 times that of a relay. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.4 **Flashing Outputs:** The System shall be able to flash any output in either A or B phase, and logic is used to shut down needed outputs in park, or any one of several combined interlocks. The flash rate can be selected at either 80, or 160 FPM. This means any light can be specified with a multiplex truck with no need to add flashers. Flashing outputs can also be used to warn of problems or other unique idea you may come up with. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.5 **PWM:** The modules shall have the ability to PWM at some outputs so that a Headlight PWM module is not needed. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.6 **Diagnostics:** An output shall be able to detect either a short or open circuit. The System shall be able report in "real time" a text based message that points the maintenance person to a specific output.

Inputs:

a. The inputs shall have the ability to switch by a ground or battery signal.
b. The inputs shall be filtered for noise suppression via hardware and software so that RF or dirty power will not trick an input into changing its status.

4.18.2.7 **Auto-Throttle:** The Multiplex system shall be able to perform automatic high idle via a network gateway or by using an existing output on a module to provide the proper signals to an OEM Engine ECU. This task shall be handled with existing inputs and outputs. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4.18.2.8 **Displays:** There shall be a total of two Vista screen displays, one on the driver side dash, facing the driver and one on the officer side dash, facing the officer. Displays shall provide real time information regarding Load Shedding and System Status, such as network traffic/errors or shorts and open circuits.

4.18.2.9 **System Network:** The Multiplex system shall contain a Peer-to-Peer network. A Master Slave Type network is not suitable for the Fire/Rescue industry. A Peer-to-Peer network means that all the modules are equal on the network; a Master is not needed to tell other nodes when to talk.

4.18.2.10 **System Reliability:** The Multiplex system shall be able to perform in extreme temperature conditions, from 40° to +85° C (-40° to +185° F.) The system shall be sealed against the environment, moisture, humidity, salt or fluids such as diesel fuel, motor oil or brake fluid. The enclosures shall be rugged to withstand being mounted in various locations or compartments around the vehicle. The modules shall be protected from over voltage and reverse polarity.

4.18.2.11 **Warranty Information:** The Multiplex (V-Mux) system of Weldon, when installed correctly is warranted against mechanical, electrical and physical defects for the period defined in the table below per module. The period is defined as the date of manufacture from Weldon: each V-Mux carries its own date of manufacture.

Part Numbers	Parts Period	Weldon Repair Parts Labor Period
6000-0000-02 or -03 Hercules	4 years	4 years
6010-0000-00 Mini 4x12	4 years	4 years
6020-0000-00 Mini 16	4 years	4 years

6201-XXXX-XX Vista I Display Nodes		
Internal Displays	1year	1 year
Internal Electronics	4 years	4 years
6231-XXXX-XX Vista Ill Display	1year	1 year
Nodes	1 year	1 year
6300-XXXX-XX Switch Panels		
6400-0000-00 Gateway Node	4 years	4 years
ORB0-0614-00 Shunt interface	1year	1 year
Module	1 year	1 year
OU10-0715-00 VFD 2 Line Display		
OR13-0614-00 Temp sensor	30 days	30 days
611X-OOOO-OO Transceiver Serial	1year	1 year
or USB		
613X-OOOO-OO Diag Kit, Serial or	1 year	1year
USB	30 days	30 days
Cables or other accessories		

Nodes need to be installed in the ceiling of the body compartments for improved access for maintenance, or in a location that would be easy to access. Engineering to determine best location.

Comply with Section 4.18: YES_____NO_____

Bidder Response Section 4.18:

4.19 Weatherproof Door Switches

4.19.1 Due the harsh environment and susceptibility to moisture on the fire ground, the fire apparatus compartment doors shall utilize weatherproof switches. Two different types of switches shall be used. Weatherproof proximity switches shall be utilized where space permits. In tight locations, mechanical weatherproof switches shall be used. No Exceptions.

4.19.2 The switches shall be used for activation of the compartment lights and shall provide a signal to the door open circuit in the cab.

Comply with Section 4.19: YES_____NO_____

Bidder Response Section 4.19:

4.20 Volt System Schematic

A complete electrical schematic for the apparatus shall be provided. This schematic shall be specifically prepared for this individual unit rather than a generic schematic designed to accommodate all apparatus.

Comply with Section 4.20: YES_____NO_____

Bidder Response Section 4.20:

4.21 Volt System Test

After completion of the unit, the 12-volt electrical system shall undergo a battery of tests as listed in the latest addition of NFPA Pamphlet 1901. These tests shall include, but not be limited to: a reserve capacity test, alternator performance test at idle, alternator performance test at full load, and a low voltage alarm test Certification of the results shall be supplied with the apparatus at the time of delivery.

Comply with Section 4.21: YES_____NO_____

Bidder Response Section 4.21:

4.22 Headlights

The headlights shall be clear LED, rectangular style, mounted on the face of the cab, in dual-headlight housings. The headlights shall be mounted in a chrome bezel.

Comply with Section 4.22: YES_____NO_____

Bidder Response Section 4.22:

4.23 Front Turn Signals

There shall be Federal Model QL64Z-ARROW amber LED, and arrow-pattern turn-signals mounted above the headlights in a separate chrome bezel, outboard of the front warning lights; one on each side.

Comply with Section 4.23: YES_____NO_____

Bidder Response Section 4.23:

4.24 Headlight Location

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

Comply with Section 4.24: YES_____NO_____

Bidder Response Section 4.24:

4.25 Side Turn/Marker Lights

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

Comply with Section 4.25: YES_____NO_____

Bidder Response Section 4.25:

4.26 Marker and ICC Lights

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

Comply with Section 4.26: YES_____NO_____

Bidder Response Section 4.26:

4.27 Headlight and Marker Light Activation

The headlights and marker lights shall be controlled through the Vista screens. The headlamps shall be equipped with the "Daytime Running" light feature, which shall illuminate the headlights to 80% brilliance when the battery master switch is in the "On" position and the parking brake is released. The Vista screen control shall feature “On”, “Marker Lights” and “Off”.

Comply with Section 4.27: YES_____NO_____

Bidder Response Section 4.27:

4.28 Auxiliary Marker/Turn Lights

The cab shall include two (2) Truck-Lite model 10075Y round LED lamps which shall include an amber cover. The lights shall operate as a side clearance marker and turn signal. The lights shall be mounted one (1) on each side of the cab just above the wheel well.

Comply with Section 4.28: YES_____NO_____

Bidder Response Section 4.28:

4.29 Ground Lights

Each door shall include a Federal Model 607141-05 LED ground light mounted to the underside of the cab step below each door. The lights shall include a polycarbonate lens, a housing which is vibration welded and LEDs which shall be shock mounted for extended life. The ground lighting shall be activated by the respective door as well as in the Vista screen.

Comply with Section 4.29: YES_____NO_____

Bidder Response Section 4.29:

4.30 Lower Cab Step Lights

The middle step located at each door shall include a recess mounted Federal Model 607141-05 LED light which shall activate with the opening of the respective door.

Comply with Section 4.30: YES_____NO_____

Bidder Response Section 4.30:

4.31 Intermediate Step Lights

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

Comply with Section 4.31: YES_____NO_____

Bidder Response Section 4.31:

4.32 Engine Compartment Lights

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

Comply with Section 4.32: YES_____NO_____

Bidder Response Section 4.32:

4.33 Tiller Cab Interior Lights

There shall be a Weldon style 8080, item 8080-8000-13, interior/dome series LED light provided. The lens shall be clear on one side and red on the other. The interior clear light shall be activated by the door opening or by a push

button on/off switch located on the light. The red dome light shall be activated by a push button on/off switch located on the light. The light shall be located on the tiller cab ceiling above the tiller operator.

Comply with Section 4.33: YES_____NO_____

Bidder Response Section 4.33:

4.34 Tiller Guide Lights

There shall be a Perko model 0455002CHR round navigation light mounted to the roof of the cab. The light shall be 12.00-inch vertical height allowing all around visibility for use as a center guide by the tiller operator.

Comply with Section 4.34: YES_____NO_____

Bidder Response Section 4.34:

4.35 Emergency Lighting Activation

All emergency warning lights shall be controlled by the E-Master button on the Vista display.

Comply with Section 4.35: YES_____NO_____

Bidder Response Section 4.35:

4.36 Side Scene Lights

There shall be two (2) each Federal Model QL97LEDSCENE cab scene lights installed; one on each side between the cab doors. The lights shall activate when the cab doors are opened from the same type of switchgear as the side-body scene lights and shall also be controlled by the Vista screen.

Comply with Section 4.36: YES_____NO_____

Bidder Response Section 4.36:

4.37 Brow Lights

There shall be a total of two (2) Federal Signal Contour Mount COMLS15K800-03-11 scene lights brow area lights mounted to the front of the apparatus. One (1) shall be mounted directly above the windshield on the driver side, centered. One (1) shall be mounted directly above the windshield on the passenger side, centered. The lights shall be installed in a contour brow mount.

Comply with Section 4.37: YES_____NO_____

Bidder Response Section 4.37:

4.38 Side Scene Light Location

The scene lighting shall be located on the left and right sides of the cab

Comply with Section 4.38: YES_____NO_____

Bidder Response Section 4.38:

4.39 Side Scene Light Activation

The scene lights shall be activated by the Vista screen.

Comply with Section 4.39: YES_____NO_____

Bidder Response Section 4.39:

4.40 Interior Overhead Lights

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

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

Comply with Section 4.40: YES_____NO_____

Bidder Response Section 4.40:

4.41 Master Warning Switch

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

Comply with Section 4.41: YES_____NO_____

Bidder Response Section 4.41:

4.42 Map Lights

Two (2) Sunnex swivel map lights with red lens and control switch on the base mounted on the overhead HVAC cover, one (1) on each side ILO one (1) Federal Signal 18.00-inch gooseneck style map light with clear lens, sliding red filter, and rheostat control switch located on the right-hand side of the dash as originally specified.

Comply with Section 4.42: YES_____NO_____

Bidder Response Section 4.42:

4.43 Do Not Move Apparatus Lights

The front headliner of the cab shall include a flashing red Whelen Ion LED light clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible alarm shall be included which shall sound while the light is activated. The flashing red light shall be located centered left to right for greatest visibility. The light and alarm shall be interlocked for activation when either a cab door is not firmly closed or an apparatus compartment door is not closed. The light and alarm shall be disabled when the parking brake is set.

Comply with Section 4.43: YES_____NO_____

Bidder Response Section 4.43:

4.44 Inboard Front Warning Lights

The cab front fascia shall include two (2) Federal Signal Quadra Flare LED front warning lights in the left and right inboard positions. The lights shall be mounted to the front fascia of the cab within a chrome bezel. The lights shall flash alternating red/red when. The lights shall activate through the E-Master switch.

4.44.1 **Inboard Front Warning Lights Color:** The warning lights mounted on the cab front fascia in the inboard positions shall be red.

Comply with Section 4.44: YES_____NO_____

Bidder Response Section 4.44:

4.45 Intersection Warning Lights

The chassis shall include two (2) Federal Signal Quadra Flare 6x4 LED intersection warning lights, one (1) each side. The lights shall flash red until the parking brake is released, in which the lights will flash alternating red/clear.

4.45.1 **Intersection Warning Light Location:** The intersection lights shall be mounted on the side of the bumper in the rearward position.

Comply with Section 4.45: YES_____NO_____

Bidder Response Section 4.45:

4.46 Side Warning Lights

The cab sides shall include two (2) Federal Signal Quadra Flare LED warning lights, one (1) on each side. The lights shall feature advanced Solaris technology and include a built-in flasher capable of multiple flash patterns. The lights shall be mounted to the sides of the cab within a chrome bezel. The lights shall flash red until the parking brake is released, in which the lights will flash alternating red/clear.

4.46.1 **Side Warning Light Location:** The warning lights on the side of the cab shall be mounted over the front wheel well directly over the center of the front axle.

Comply with Section 4.46: YES_____NO_____

Bidder Response Section 4.46:

4.47 Interior Door Open Warning Lights

The interior of each door shall include one (1) red 4.00-inch diameter Truck-Lite LED warning light located on the door panel. Each light shall activate with a flashing pattern when the door is in the open position to serve as a warning to oncoming traffic.

Comply with Section 4.47: YES_____NO_____

Bidder Response Section 4.47:

4.48 Rear Work Light Switch

A switch shall be installed above the tail light bezel on the left side. The switch shall be wired to the backup lights to provide additional work lighting. The rear work light circuit shall be deactivated when the park brake is disengaged. In addition to the lights being activated by the above switch, the lights shall also come on when the transmission is placed in reverse.

Comply with Section 4.48: YES_____NO_____

Bidder Response Section 4.48:

4.49 Midship Turn Signal (LED)

There shall be Two (2) Truck-Lite model 21LED midship auxiliary / turn signal lights installed in the rub rail, on each side of the body.

Comply with Section 4.49: YES_____NO_____

Bidder Response Section 4.49:

4.50 Midship Turn Signal, Tiller

There shall be one (1) Whelen model 700 LED turn signal lights, part number 70AOOTAR with chrome flange, installed above the rear wheel well area, on each side of the tiller trailer.

Comply with Section 4.50: YES_____NO_____

Bidder Response Section 4.50:

4.51 LED Clearance Lights

Truck-Lite model 30 LED clearance lights shall be installed on the rear of the body as necessary to be in full compliance with applicable ICC and DOT codes and regulations.

4.51.1 **Additional LED Clearance Lights**

Six (6) Truck-Lite model 30 LED amber clearance lights shall be installed on the body in addition to applicable ICC and DOT codes and regulations. Three (3) on the left side of the body and three (3) on the right side of the body.

4.51.2 **LED Clearance Lights (Side Marker)**

There shall be four (4) truck-Lite model 35075R LED clearance lights with aluminum bracket installed on the apparatus. Four (4) side marker lights, two (2) on each rear corner shall be a Truck-Lite model 35075R Red LED with mounting bracket.

Comply with Section 4.51: YES_____NO_____

Bidder Response Section 4.51:

4.52 Ground Lighting – LED

4.52.1 Federal Model 607141-05 LED lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off the apparatus. The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. These areas shall include, but not be limited to, cab doors, side running boards, and the rear step area.

4.52.2 **Additional Ground Lighting – LED**

Additional Federal Model 607141-05 LED lights shall be installed beneath the apparatus. The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. in the following areas:

a. Two {2) below the body compartments left - One (1) below L5/ L7, One {1) below L2/ L3
b. Two (2) below the body compartments right - One (1) below R5/ R7, One (1) below R2/ R3

Comply with Section 4.52: YES_____NO_____

Bidder Response Section 4.52:

4.53 Walkaway Lights

Lights shall be mounted in a manner that illuminates all walkways and steps for safe operation of the apparatus. These lights shall become illuminated when the parking brake is engaged. Walkway lights to be Federal Signal Micro Pulse Wide Angle LED. The color shall be clear.

Comply with Section 4.53: YES_____NO_____

Bidder Response Section 4.53:

4.54 Scene Lights, Rear Facing, Tiller Cab

There shall be two rear facing Federal Signal Quadraflare 7”x3” 12-volt scene lights installed in a bezel and located at the top rear corner of the tiller cab.

4.54.1 **Rear Facing Tiller Scene Light Switch in Cab**
The rear facing scene lights shall be controlled by a switch located in the tiller cab within reach of the driver. The switch shall have an indicator which shall illuminate when the switch is in the "ON" position. The switch shall be labeled " REAR SCENE."

4.54.2 **Rear Scene Light Switch Location**
The rear scene lights shall be controlled by a switch located in the chassis within reach of the driver. The switch shall have an indicator which shall illuminate when the switch is in the "ON" position. One switch shall control all rear scene lights if multiple scene lights are selected. The switch shall be labeled "REAR SCENE." In addition to the switch located in the cab, the rear scene lights shall be activated by the rear work light switch, and when the apparatus is placed in reverse.

Comply with Section 4.54: YES_____NO_____

Bidder Response Section 4.54:

4.55 Scene Lights Forward Facing, Tiller Cab

There shall be two forward facing Federal Quadraflare 7"x3" 12-volt scene lights installed in a bezel and located at the top front corner of the tiller cab. The color shall be CLEAR.

4.55.1 **Forward Facing Tiller Scene Light Switch in Cab**
The forward-facing scene lights shall be controlled by a switch located in the tiller cab within reach of the driver. The switch shall have an indicator which shall illuminate when the switch is in the "ON" position. The switch shall be labeled "FRONT SCENE".

Comply with Section 4.55: YES_____NO_____

Bidder Response Section 4.55:

4.56 AMDOR Compartment Lighting, Freedom Package

4.56.1 All side compartments of the apparatus shall be equipped with AMDOR Luma Bar, LED compartment lighting. The Luma Bar shall have wide angle 120° surface mount LED installed on a printed circuit board for shock and vibration resistance. The lighting shall be enclosed in a high impact poly carbonate enclosure. Current draw shall not exceed 130mA per foot or 20mA per LED.

4.56.2 Lighting shall be installed in the left and right side compartments of the tiller tractor and the tiller trailer. The configuration of some small compartments may not allow for LED lighting, in those cases an appropriate substitute shall be used.

4.56.3 An automatic door switch shall activate the compartment lights. In the case of transverse compartments lights on both sides shall be activated by opening either door.

4.56.4 The compartment lights shall be located as follows:

a. LO and RO shall have one horizontal light bar installed at the top of the compartment.
b. L1 and R1 shall have one horizontal light bar installed at the top of the compartment.
c. L2 and R2 shall have one vertical light bar installed along the side of the door.
d. L3 and R3 shall have one vertical light bar installed on each side of the door.
e. L4 and R4 shall have one vertical light bar installed on each side of the door.
f. L5 and R5 shall have one vertical light bar installed on each side of the door.
g. L6 and R6 shall have one vertical light bar installed on each side of the door.
h. L7 and R7 shall have one vertical light bar installed along the side of the door.
i. L8 and R8 shall have one vertical light bar installed along the side of the door.
j. L9 and R9 shall have one horizontal light bar installed at the top of the compartment.
k. C1 shall have one horizontal light bar installed at the top, back of the compartment.
l. CL1 and CR1 shall have one horizontal light bar installed at the top of the compartment.
m. CL2 and CR2 shall have one vertical light bar installed along the side of the door.

n. CL3 and CR3 shall have one vertical light bar installed along the side of the door.

Comply with Section 4.56: YES_____NO_____

Bidder Response Section 4.56:

4.57 Tail Lights

The tail lights shall have one (1) Federal Model QL64Z4V-LED-LEFT and one (1) QL64Z4V-LED-RIGHT, LED tail light assemblies. This assembly shall include one (1) red LED stop/tail light, one (1) amber LED turn light, one (1) clear LED back-up lights and one (1) red LED flashing light. The brake lights shall be activated by the brake pedal application and upon the secondary (Jake) brake application.

Comply with Section 4.57: YES_____NO_____

Bidder Response Section 4.57:

4.58 12 Volt Accessory Outlet in the Cab

There shall be four (4) 12-volt accessory outlets with USB provided in the cab. One (1) mounted on the driver side engine tunnel; One (1) mounted on the officer side engine tunnel; Two (2) mounted in the rear cab area. The exact mounting location shall be determined at pre-con.

Comply with Section 4.58: YES_____NO_____

Bidder Response Section 4.58:

4.59 Streamlight Rechargeable Lights

Five (5) Streamlight Fire Vulcan LED flash lights, orange in color with 12volt vehicle charger mounts. The lights shall be wired direct to the chassis batteries.

Comply with Section 4.59: YES_____NO_____

Bidder Response Section 4.59:

4.60 Tiller Driving Lights

There shall be a Zico model ZQL-SS-H7614 tiller driving light installed f01ward of the tiller trailer fender wells, one on each side of the apparatus. The lights shall be controlled by the dimmer switch located on the tiller operators steering wheel. The light shall be angled toward the front of the apparatus.

Comply with Section 4.60: YES_____NO_____

Bidder Response Section 4.60:

4.61 Tiller Turning Lights

There shall be a Zico model ZQL-SS-H7614 tiller turning light installed behind the tiller trailer fender wells, one on each side of the apparatus. The lights shall be controlled by the tum indicator switch located on the tiller operators steering wheel. The light shall be directed outward from the sides of the apparatus.

Comply with Section 4.61: YES_____NO_____

Bidder Response Section 4.61:

4.62 Go-Light Remote Control Search Light

There shall be two (2) LED GOLIGHT Model GL-30204 remote control searchlights mounted to the top of the cab towards the front corners rear of the lightbar. Go-lights shall be mounted on an angled pedestal to allow for clearance above the roof mounted lightbar. Each light shall be equipped with two (2) hard wired remote controls located in the chassis cab.

Comply with Section 4.62: YES_____NO_____

Bidder Response Section 4.62:

4.63 Pedestal Mount LED Light

There shall be four (4) Federal Signal COM120 scene top mount fixed pedestal light(s) installed on the apparatus. The pedestal shall allow the lamp head to rotate 450 degrees and have a self-adjusting friction brake to prevent arbitrary rotation. The pedestal shall have a round mounting base. Wiring shall extend from the pedestal bottom. Lamp head and brackets shall be powder coated white. The non-telescopic lights shall be installed:

a. One (1) Above L3
b. One (1) Above L6
c. One (1) Above R3
d. One (1) Above R6

The above 120-volt light shall be controlled with the circuit breaker.

Comply with Section 4.63: YES_____NO_____

Bidder Response Section 4.63:

4.64 Visual Warning

4.64.1 **Upper Zone A Visual Warning:** A Federal Signal 87" Navigator light bar system, Part #: 1532275834 shall be supplied and permanently mounted on the cab roof, as far forward as possible.

a. The light bar shall be equipped with two (5) forward facing linear "Red" LED's, one to be STEADY RED, two (2) RED rotating lights on each end, and two (2) mid mounted RED/CLEAR rotating lights.
b. The light bars shall be equipped with clear lenses. All clear LED's in the light bar shall be deactivated in the Blocking Right of Way mode.
c. Opticom Emitter, 3M Installed: There shall be an infrared Opticom Emitter installed in the Federal Navigator Series Light bar.

4.64.2 **Upper Zone C Visual Warning:** Two (2) Federal SLR LED rotating beacons installed high at the rear of the apparatus. One rotator shall have an amber lens and one rotator shall have a red lens.

4.64.3 **Lower Zone B Visual Warning:** Three (3) Federal 4x6 Quadraflare QL64XFC-RC LED lights with QL64MC chrome bezel shall be surface mounted in the lower warning zone. The lights shall have clear lenses. The clear flashing LED light shall be disabled when the parking brake is set.

4.64.4 **Lower Zone C Visual Warning:** Two (2) Federal 4x6 Quadraflare QL64XFC-RR LED lights with QL64MC chrome bezel shall be surface mounted in the lower warning zone. The lights shall have a red lens.

4.64.5 **Lower Zone D Visual Warning:** Three (3) Federal 4x6 Quadraflare QL64XFC-RC LED lights with QL64MC chrome bezel shall be surface mounted in the lower warning zone. The lights shall have clear lenses. The clear flashing LED light shall be disabled when the parking brake is set.

Comply with Section 4.64: YES_____NO_____

Bidder Response Section 4.64:

4.65 Federal "LED" Traffic Advisor

There shall be a Federal Model 320810-42 42" signal master mounted on the rear of the apparatus. There shall be a third brake light built into this traffic advisor. The traffic advisor shall be recess mounted on the rear of the body above the rear compartment. The traffic advisor shall be controlled through the Vista screen.

Comply with Section 4.65: YES_____NO_____

Bidder Response Section 4.65:

4.66 Aerial Spotlight

4.66.1 Two {2) Federal Signal Commander 1220-SQ shall be installed. The "tracking" lights shall be mounted under the base section of the ladder. The lights shall be switched by a switch on each light head, and from the operator control station at the base of the ladder.

4.66.2 Two {2) Federal Signal Commander 1220-SQ shall be installed. The "tip" lights shall be mounted on the fly section of the ladder. The lights shall be mounted below the handrails so as not to increase the overall height of the unit. The lights shall be switched by a switch on each light head, and from the operator's control station at the base of the ladder.

Comply with Section 4.66: YES_____NO_____

Bidder Response Section 4.66:

4.67 Ladder Tip LED Lights

There shall be two (2) Federal Signal COMLS15K-NH LED scene lights mounted at the tip of the fly section. The lights shall be connected to the 12-volt system on the apparatus. The lights shall have weather proof on/off switches located at each light head and at the pedestal controls.

Comply with Section 4.67: YES_____NO_____

Bidder Response Section 4.67:

4.68 Aerial Mounted 120 Volt Receptacle

There shall be one (1) 120 Volt receptacle mounted on the end of the fly section. The receptacle shall be wired through the electrical swivel, and shall be controlled from the breaker box located in the body. The receptacle shall be a Twist Lock Type NEMA L5-15, 120 Volt 15 Ampere with a spring-loaded weather resistant cover.

Comply with Section 4.68: YES_____NO_____

Bidder Response Section 4.68:

4.69 Blue LED Rung Illumination Lighting

4.69.1 The aerial ladder sections shall be equipped with permanently installed blue LED rung illumination lights. The lights shall be mounted on the inside of the ladder sections, facing inward; on each aerial section in a "staggered" configuration. The blue colored lens shall serve to illuminate climbing rungs without inducing any glare, which would hinder safety.

4.69.2 The lights shall be energized by a switch on the Turntable Control Station. Each light shall be equipped with an integral guard to protect it from damage. The light itself shall be positioned such that all light shall be directed inward toward the rungs of the aerial sections, maximizing safety for all climbers during night operations. The lights shall also aid the operator in locating aerial ladder section in conditions of reduced visibility.

4.69.3 Tape type products will not be acceptable for blue rung lighting. NO EXCEPTION.

Comply with Section 4.69: YES_____NO_____

Bidder Response Section 4.69:

4.70 Onan Hydraulic Generator Set

4.70.1 An Onan model CMHG 10000, hydraulic driven generator set shall be installed on the apparatus. The generator shall be rated at 10,000 watts at 120/240 volts. Current frequency shall be stable at 60 hertz.

4.70.2 The power generating unit shall be modular unit, housed in stainless steel with an acoustical material added for maximum sound dampening. The module shall consist of the hydraulic motor, generator, blower, cooler, and all other necessary components.

4.70.3 The generator shall be located in the open storage area above the body. The generator activation switch shall be located in the chassis cab.

4.70.4 For ease of maintenance, the only part of the system that shall require accessibility shall be the oil reservoir which shall be located to facilitate periodic checks and the adding of hydraulic fluids.

Comply with Section 4.70: YES_____NO_____

Bidder Response Section 4.70:

4.71 Generator Warranty Period

Generator shall be free from defects in material and workmanship for a period of five (5) years or one thousand (1,000) hours, whichever comes first, from the date of delivery to the County. Generator warranty shall include all parts and labor, including diagnostic labor, to repair the generator. Repair or replacement parts shall be warranted for ninety (90) days from date of purchase. Any part repaired or replaced during the warranty period assumes the remainder of the warranty or ninety (90) days, whichever is greater.

Comply with Section 4.71: YES_____NO_____

Bidder Response Section 4.71:

4.72 Frog Display

There shall be a FROG D provided with the generator. The FROG D shall automatically sense a generator signal and begin displaying information. The digital meter display shall constantly monitor and display Voltage, Frequency (accurate to within 1 decimal point), and Current Draw on two separate lines. The display shall be capable of displaying total accumulated run time hours when the MODE button is pressed. This information shall be stored in a non-erasable memory. The frog display shall be located next to the load center.

Comply with Section 4.72: YES_____NO_____

Bidder Response Section 4.72:

4.73 GFI Load Center

4.73.1 The entire 120/240-volt electrical system shall be installed in strict compliance with NFPA Pamphlet 1901, newest edition. This shall include all testing, labeling, wiring methodology, and dimensional requirements. Certification of compliance shall accompany the apparatus at the time of delivery.

4.73.2 There shall be a 120/240-volt load center incorporated into the 120/240-volt wiring system. The load center shall include adequate circuit breakers to protect the loads specified on this apparatus.

4.73.3 All 120/240 volt A.C. Wiring shall be done in accordance with NFPA Pamphlet 1901 as well as nationally accepted electrical codes.

4.73.4 The GFI load center shall be located all in one compartment, L-3.

Comply with Section 4.73: YES_____NO_____

Bidder Response Section 4.73:

4.74 Branch Circuit Overcurrent Protection

Over current protection devices shall be provided for circuits in accordance with NFPA 1901 newest version. The load center shall be equipped with a non-GFI two pole main breaker when the six or more individual branch circuits are present. Over current protection devices shall be marked with labels to identify the function of the circuit they protect. The load center shall be located forward bulkhead of L2.

Comply with Section 4.74: YES_____NO_____

Bidder Response Section 4.74:

4.75 Electric Cord Reels

There shall be two (2) Hannay 120-volt electric rewind cord reel(s) model ECR1616-17-18 installed on the apparatus with a push button labeled REEL REWIND installed for 12-volt rewinding of each cord reel. The reel shall be equipped with 200' of yellow STW Seoprene 105 degree Celsius 10/3 wire installed with a cable stop to prevent damage to cable fittings. Rollers shall be supplied to prevent damage to the electrical cable if pulled in any direction. The cord reel shall be located One (1) CL1, One (1) CR1 on the tiller chassis body.

Comply with Section 4.75: YES_____NO_____

Bidder Response Section 4.75:

4.76 Cord Reel Junction Box

There shall be two (2) Circle-D model PF51G-3 electrical junction box, equipped with four (4) electrical receptacles, provided and hard wired to the cord reel. The receptacles shall be enclosed in a UL listed, NEMA Type 3R cast aluminum box with aluminum finish and NFPA required indicator light.

Comply with Section 4.76: YES_____NO_____

Bidder Response Section 4.76:

4.77 Receptacle Junction Box, Duplex NEMA L5-15R

There shall be eight (8) Circle-D, NEMA L5-15R DPLX, duplex twist lock type receptacle(s) installed in the junction box. The receptacle shall be rated at 15 amps and 120 volts. Receptacles shall be installed in the following locations of the junction box: 1,2,3,4.

Comply with Section 4.77: YES_____NO_____

Bidder Response Section 4.77:

4.78 Volt Twist Lock, Single Receptacle

There shall be two (2), single outlet box(es). The box shall contain one (1) NEMA L5-15, 120 Volt 15 ampere rating Twist Lock type receptacle wired to the generator. The receptacle(s) shall have spring loaded weather resistant covers. The receptacle(s) shall be located on the rear of the tiller body one left one right.

Comply with Section 4.78: YES_____NO_____

Bidder Response Section 4.78:

4.79 Kenwood Radio System

4.79.1 A Kenwood TK-5710, VER 3 (1024 channels) with firmware version 6E0E, 50W remote mount VHF (136-174 MHz) mobile radio with full feature control head shall be contractor supplied, installed, and tested for proper operation with FCC compliance.

4.79.2 The radio transceiver shall be mounted within the rear radio compartment and connected to battery switched power as provided in the radio compartment and fused with a 15A ATC fuse.

4.79.3 The Kenwood radio shall have a Kenwood Part # KLF-2 DC line filter installed.

4.79.4 The Kenwood full feature control head shall be mounted on the dash board with location finalized at pre-construction.

4.79.5 The Kenwood radio shall include one KMC-28 DTMF microphone.

4.79.6 Two Kenwood KES-5 mobile radio speakers shall be contractor supplied and installed with the location finalized at pre-construction.

4.79.7 A PCTEL part# MWB-1320 antenna tuned to 157 MHz shall be contractor supplied and roof mounted with a Larsen NMOKHFUDMPL antenna cable kit labeled "VHF" on the cable end and terminated to the Kenwood transceiver in the radio compartment.

4.79.8 A Comtronix Communications BKRA-1RVC radio intercom adaptor shall be contractor supplied and interfaced between the Kenwood radio and Sigtronics headset system.

4.79.9 A water proof amplified radio speaker with volume control shall be contractor supplied and installed at the pedestal control box. The speaker shall be connected to the BKRA-1RVC "siren radio rebroadcast" output for fixed audio to the pedestal speaker.

Comply with Section 4.79: YES_____NO_____

Bidder Response Section 4.79:

4.80 Intercom, Sigtronics, US-12S (Up To 12 Positions)

There shall be a Sigtronics model US-12S intercom system supplied and installed on the apparatus. The intercom system shall interface with the apparatus mobile radio to allow for radio transmit from designated PTT (push to talk) locations. The System shall have the following capabilities:

a. Driver: lntercom/PTT
b. Officer: lntercom/PTT
c. Tiller Cab Intercom/PTT
d. Tiller Cab (Training Seat) Intercom Only
e. Turn Table lntercom/PTT
f. Four (4) Rear Crew Intercom Only

Comply with Section 4.80: YES_____NO_____

Bidder Response Section 4.80:

4.81 Intercom Headset

There shall be five (5) Sigtronics model SE-8 intercom headsets included with the intercom system. The headsets shall have a soft head strap designed to be worn under a helmet, a flex microphone boom that rotates 180 degrees for use on either side, and an easy grab volume adjustment knob. The microphone shall be noise canceling with a wind screen and shall be voice activated.

4.81.1 **Headset Jack, Interior Mount -** There shall be a Sigtronics headset plug-in jack, part number 800120, provided. The headset jack shall be designed for interior mounting and shall be compatible with Sigtronics headsets

4.81.2 **Headset Jack with Splash Cover -** There shall be a Sigtronics headset plug-in jack, part number 800121, with a spring-loaded cover provided. The headset jack shall allow for exterior mounting and shall be compatible with Sigtronics headsets

4.81.3 **Intercom Push to Talk Switch -** There shall be a Sigtronics push to talk switch, part number 800122, provided. The switch shall allow for mobile radio transmission through the Sigtronics intercom system with the use of a Sigtronics headset.

Comply with Section 4.81: YES_____NO_____

Bidder Response Section 4.81:

4.82 PSEC Radio System

4.82.1 Two Larsen NMOKHFUDMPL antenna cable kits shall be installed in the roof and routed to the Radio Compartment with "N" type RF connectors terminated. The first cable shall be labeled "700 MHz" on the cable end and a Larsen part# NMOQW700 antenna installed on the roof. The second cable shall be labeled PSEC on the cable end. Antenna locations shall be finalized at pre-construction.

4.82.2 A lighted rocker switch shall be installed in the cab console and labeled "PSEC". The switch shall be powered by the cab console battery "hot all the time" circuit and fused with a 3A ATC fuse. The output of the switch shall be routed to the radio compartment unterminated with a 2' pigtail. 16-gauge orange stranded wire shall be used and the cable end labeled "PSEC".

Comply with Section 4.82 YES_____NO_____

Bidder Response Section 4.82:

4.83 Radio Equipment Mounting

4.83.1 An aluminum base mounting plate with minimum mounting dimensions of 20" W X 32"H for communications equipment mounting shall be installed in the cab.

4.83.2 Two 12 VDC circuits shall be provided for communications use and terminated on the mounting plate. One circuit shall be battery "*hot all the time*" and one circuit shall be switched on with the master battery switch. Each circuit shall be 6-gauge red stranded wire, terminated with ¼-20 stud type junction blocks, and each circuit protected with 40 Amp circuit breakers. In addition, one 6-gauge black chassis ground shall be supplied and terminated with a ¼-20 stud type junction block.

Comply with Section 4.83: YES_____NO_____

Bidder Response Section 4.83:

4.84 Mobile Data Computer (MDC)

4.84.1 A Gamber Johnson MDC mount and docking station shall be contractor supplied, assembled and installed to the cab console as follows:

a. 1 each. Part# DS- UPPER-M Gamber Johnson - Standard-Adjustable Upper Pole
b. 1 each. Part# 7160-0049 Gamber Johnson - Screen Support Vehicle mounting kit
c. 1 each. Part# 7160-0750 Gamber Johnson - VESA 75mm Clevis
d. 1each. Part# 7160-0264-02 Gamber Johnson – Docking Station
e. 1each. Part# BR305-USB2 US Global Sat – USB Cable Set
f. 1each. Part# WXR-1850-TN Laird – 2.4 GHz Antenna

4.84.2 A US Global Sat GPS antenna Part# MR-350P shall be contractor supplied and roof mounted. The antenna location shall be determined at pre-construction. The GPS antenna cable shall be connected to the Gamber Johnson MDC docking station.

4.84.3 Two (2) 12 VDC circuits shall be provided for MDC and communications use and terminated in the cab console. One circuit shall be battery "*hot all the time*" and one circuit shall be switched on with the master battery switch. Each circuit shall be 8-gauge red stranded wire, terminated with ¼-20 stud type junction blocks, and each circuit protected with 25 Amp circuit breakers. In addition, one 8-gauge black chassis ground shall be supplied and terminated with a ¼-20 stud type junction block.

4.84.4 Lind Electronics Part# PA1555-968 shall be installed with Lind Electronics Part# ASMTL-00332 power supply mounting rail within the cab console.

4.84.5 The power supply input shall be connected to the above mentioned 12VDC battery "hot all the time" circuit and fused with a 10A ATC fuse.

4.84.6 A lighted rocker switch shall be in line with the power supply input circuit and be mounted in the cab console and labeled "MDC". The output of the power supply shall be connected to the Gamber Johnson docking station.

Comply with Section 4.84: YES_____NO_____

Bidder Response Section 4.84:

End of Section IV – Electrical

TAB E – EXHIBIT 5

TABLE OF CONTENT

Section V – Equipment

5.1 Equipment

SECTION V – EQUIPMENT

5.1 Equipment

5.1.1 The following equipment will be provided by the builder and shipped with the apparatus upon delivery. The equipment listed is also mentioned in the previous sections.

5.1.2 **Ladders:**

a. One (1) 8' Werner NXT1A08 Type IA fiberglass single sided step ladder
b. Two (2) 14' roof ladder, Duo Safety 775DR (Special Width)
c. Three (3) 10' folding attic ladders, Duo Safety 585A
d. Two (2) 16' roof ladders, Duo Safety 875A
e. One (1) 18' roof ladder, Duo Safety 875A
f. One (1) 20' roof ladder, Duo Safety 875A
g. Two (2) 28' two section extension ladders, Duo Safety 1200A
h. Two (2) 35' two section extension ladders, Duo Safety 1200A

5.1.3 **Fire Equipment:**

a. Three (3) 6' Aluminum D-Handle Fiberglass Rubbish Hook, Nupla RH-6DA
b. Two (2) 4' Aluminum D-Handle Fiberglass Ceiling & Wall Hook, Nupla CWH-4YDA
c. One (1) 4’ 6' Aluminum D-Handle Fiberglass Rubbish Hook, Nupla RH-4DA
d. Two (2) 10' Fiberglass Pike Pole(s), Nupla YPD-10
e. One (1) 12' Fiberglass Pike Pole(s), Nupla YPD-12
f. One (1) 18' Fiberglass Pike Pole(s), Nupla YPD-18
g. Two (2) 6’ New York Roof Hook, Fire Hooks Unlimited
h. Two (2) 4’ New York Roof Hook, Fire Hooks Unlimited
i. One (1) An Akron Brass Style 1494 all-electric ladder pipe rated for 1000gpm, constructed of lightweight Pyrolite and a weight not to exceed 35lbs shall be provided. The monitor shall be 36” in length and have a vertical rotation of 135° with three adjustable stops. The monitor shall have a fully enclosed motor and gears with manual over-ride for the vertical rotation. The control box shall be totally encapsulated to prevent moisture intrusion and use locking IP 67 rated electrical connectors for all motor control outputs and control inputs. The control system shall have one environmentally sealed USB port to facilitate control system updates. The control system shall have a built in wireless transceiver (900 MHz) to facilitate operation from wireless remote control devices. The ladder pipe shall have mounting clamps that are adjustable to fit up to 16” rung spacing. Configuration shall be:
    1. Inlet: 2.5” NH
    2. Outlet: 2.5” NH
    3. Voltage: 12 Volt
j. Five (5) Streamlight Fire Vulcan LED flash lights, orange in color with 12-volt vehicle charger mounts.
k. Two (2) 130’ Section Continuous 3” Angus Hose with 2 ½” couplings
l. One (1) 4 inch female to 4 inch male Task Force Tips Jumbo Gate Valve - PN: AG5NP-NP-01

Comply with Section 5.1: YES_____NO_____

Bidder Response Section 5.1:

End of Section V – Equipment