REQUEST FOR TENDER

Solicitation # 2023- EPS-001

TENDER: [**Provision of One (1) New Fire Rescue Unit**]

DATE: [March 3, 2023]

INITIATOR: [Derian Rosario, Fire Chief]

DATE TENDER REQUIRED:

YEAR: [**2023**] MONTH: [**April**] DAY: [**4**] TIME: **2:00 PM Local Time**

Submit Tender via email to: purchasing@drumheller.ca with the subject line:

"RFT - Provision of One (1) New Fire Rescue Unit #2023-EPS-001"

Submissions must be in PDF format and no larger than 100MB in total. Zip files will not be accepted.

This Request for Tender document is comprised of:

- RFT General Instructions
- Schedule A – Evaluation Criteria
- Schedule B – Price Sheet
- Schedule C – Technical Specifications

If you do not have all of these components the RFT package is incomplete - please contact the Initiator.

Your firm is invited to submit a Tender, pursuant to the general conditions for the scope of work as described. This Tender shall not be considered authorization to proceed with work herein described. All Procurement processes must comply with Town of Drumheller Purchasing Policy C-09-20.

SECTION #1 - SCOPE OF WORK:

The Town of Drumheller (the Town) invites Tenders for the development of a specification for the purchase of one (1) new Rescue Unit that when in operation will located be in Drumheller, Alberta. The bidder is requested to use the specified items in the document. The specified items are required to retain continuity in the Town of Drumheller's fleet of firefighting apparatus. The bidder is welcome to use their depth of experience to develop a product of the highest quality, utilizing technology and superior engineering.

The proposed vehicle is a Medium Rescue mounted on a four-wheel drive International chassis. The vehicle must have the ability to operate in temperature extremes of minus 40 degrees centigrade to plus 40 degrees centigrade, working in difficult terrain, partly operated off highway, in conditions of mud, snow, dust and ice. Please refer to Schedule C – Technical Specifications for full specification details.

1. Tender Conditions

Bidders shall carefully read the Request for Tender documentation and submit Tenders subject to all conditions contained in the Tender documents. Bidders shall make all investigations necessary for estimating as to the conditions under which the work must be carried out and its nature and location. The submission of a Tender by a Bidder shall be construed by The Town to mean that the Bidder agrees to abide by and carry out all conditions set forth in the Tender documents.

2. Tender Clarification

All inquiries must be sent via email to purchasing@drumheller.ca and note the full RFT name in the subject line. Should the Bidder find, during examination of the Tender documents, any discrepancies, omissions, ambiguities, or conflicts on or between the Tender documents or be in doubt as to their meaning, the Bidder shall bring the question to the attention of the Town via email only by the deadline for inquiries identified in the project timetable. The questions will be reviewed, and where information sought is not clearly indicated, The Town will issue addenda, which will become part of the Tender documents. Should the Bidder fail to bring the discrepancy, omission, ambiguity or conflict to the attention of the Town as to the resolution of such discrepancy, omission, ambiguity or conflict, it will be deemed that the Bidder has included the costliest alternative in its Tender.

3. Error in Tender

No Tender shall be altered, amended, or withdrawn after the time specified for opening Tenders. Negligence on the part of the Bidder in preparing the Tender documents confers no right for the withdrawal of Tender after it has been opened.

4. Freedom of Information and Protection of Privacy Act

The information provided in this Request for Tender is being collected for the purpose of creating an expenditure under the authority of the Municipal Government Act. The information you provide may become Public Information.

5. Amendments

The Town reserves the right to amend or revise the Tender documents by addenda up to one business day prior to the tender closing time. Amendments may include an extension to the closing date. Verbal instructions given in person are null and void and shall not be accepted by the Bidder. Receipt of all addenda by Bidders shall be acknowledged. It is the Bidder's responsibility to ascertain and verify, prior to the RFT closing time, that it has received all addenda issued in relation to the Tender package.

6. Contract

The signing of a formal written agreement shall constitute the making of a contract between the Town and the successful Bidder. No Bidder shall acquire any legal or equitable rights in relation to the Town until the signing of a written agreement by the Town. The contract shall include all portions of the RFT not expressly overridden in negotiations.

7. New Technology

In the event that new technology is introduced during the term of any contract relating to the materials, supplies, and services provided under the contract, and; if in the opinion of the Town that new technology is deemed a requirement of the Town, the Vendor will be given ninety (90) day's notification to supply comparable technology at a competitive price. If, in the judgment of the Town's professional staff, the Vendor's technology is not comparable or the price is not competitive, the Town reserves the right, on notice, to cancel the contract without liability to the Vendor for the unexpired portion of the contract. The Town also reserves the right to purchase this new technology during the ninety (90) days.

8. Acceptance of Tenders

If the Bidder fails to state the time within which a Tender must be accepted, it is understood and agreed that the Town shall have Thirty (30) business days to accept.

9. Compliance with Laws

The Bidder shall be responsible for complying with all Federal, Provincial (Alberta) and Municipal laws, rules, regulations, and guidelines that apply.

10. Owner Approvals

The Town must provide approval of:

- Overall Design
- Console Layout
- Pump Panel Layout

11. Warranty

The Town requires all warranty repairs be at apparatus base of operations. Travel costs for all warranty repairs except for chassis items will be at the expense of the Bidder.

The Bidder must have a minimum of a one Emergency Vehicle Technician (EVT) on staff or under contact within 500 Km of the Town of Drumheller. The Emergency Vehicle Technician must be at minimum be an interprovincially licensed as an Automotive Technician holding EVT certifications F1 and F4 with F6 and FA4 preferred.

12. Vendor Performance/Default

Vendors aware of potential or pending supply difficulties must notify the Town immediately of such difficulties. Vendor shall propose alternatives for Town selection.

In the event of non-performance, the Town reserves the right to acquire the items from alternative sources and the Vendor shall be responsible for any excess cost occasioned thereby and will pay the amount thereof to the Town on demand. If the Vendor defaults or fails to perform in accordance with the Terms and Conditions of the offering or otherwise does not comply with this agreement as it affects the Vendor's obligations, the Town may, at its sole discretion, terminate any remaining portion of this contract with the Vendor upon five (5) calendar days written notice delivered to the Vendor, free of any claim of the Vendor of every nature and kind.

13. Apparatus Timetable

Bidders must indicate the anticipated schedule for the delivery of the apparatus.

The delivery time required following receipt of order must be specified, and the apparatus shall be delivered complete and ready for operation free of deficiencies. The apparatus, to ensure proper break-in of all components, shall be delivered by the successful Bidder under its own power. Rail or truck freight is not acceptable.

Project Timetable	
RFT Posting	March 3, 2023
Deadline for Inquiries	March 28, 2023 at 4:30 pm
RFT Close	April 4, 2023 at 2:00 pm
Evaluation Period	April 4 - 17, 2023
Award Date	May 1, 2023
To Be Completed by Bidder	
Pre-Construction Meeting	
Anticipated Pre-Delivery Inspection	
Anticipated Delivery Date	

14.Payment Schedule

10 % of Total Cost	At Award of Project
Chassis Cost	At Chassis Delivery
Total Cost Less 10% of Total Value	At Delivery
Hold Back Released	30 Business Day after in Service

15. Final Invoicing on Delivery

In the event it is determined that the completed apparatus does not meet the specifications outlined in the contract, the Town may, at any time of delivery, hold back sufficient funds to ensure completion. The amount of the holdback, if any, and the provision for the release of funds shall be subject to discussion between the Town and the Bidder. The conclusion, if any discrepancies exist, must occur within a reasonable time period. The expectation of the Town is to hold back **ten percent (10%)** of the value of the vehicle for **thirty (30) business days** of the vehicle being placed into service to discover deficiencies, if any, and have the deficiencies repaired by the Bidder. The Town will provide the bidder written notice when the vehicle is placed into service.

SECTION #2 - TENDER AMOUNT:

All Bids must be provided in Canadian Funds and exclude GST. All Bidders must complete Schedule B – Price Sheet.

Total Cost $_____

Tender submission price shall be in effect for duration of the contract from date of acceptance by the Town of Drumheller.

Delivery Timeline: _____ calendar days following preconstruction meeting.

SECTION #3 - SUBMISSION REQUIREMENTS:

The supplier is required to complete all necessary sections of this Request for Tender.

The Town of Drumheller requires that all submissions shall include the following:

1. All pages of this Request for Tender.
2. All issued Addenda.
3. Proof of Commercial Liability and Automobile Liability Insurance coverage as specified in Section 5.

SECTION #4 - INELIGIBILITY:

The Town of Drumheller shall deem a submission to be ineligible under the following situations:

a) Submissions that are unsigned, incomplete, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations or irregularities of any kind shall be considered ineligible.
b) Submissions that do not include the items listed in Section #3 Submission Requirements, and;
c) Submissions that are not received prior to the closing date and time, as determined by the time keeping of the Town of Drumheller computer system.
d) Submissions failing to supply references.
e) Submissions failing to supply financial stability statements.

SECTION #5 - INSURANCE AND BONDING:

Insurance

The Town of Drumheller requires that all Tenders include proof of:

a) Commercial Liability Insurance coverage of $ 5,000,000.00.
b) Automobile Liability coverage of $ 2,000,000.00 per accident for bodily injury and/or property damage.

Bid Bond

a) Each submission must include a *Consent of Surety* and *Bid Bond* in the amount of 10% in a form containing equivalent obligations on the part of the surety company and the submitter, executed under seal by a surety company satisfactory to the Town and authorized by the laws of Alberta to issue bonds in Alberta. In lieu of a *Consent of Surety* or *Bid Bond*, the Town may, in its sole discretion, accept from a financial institution acceptable to the Town, one of the following, along with any additional documentation the Town may require:
    i. a bank draft,
    ii. certified cheque,
    iii. irrevocable letter of credit, or guarantee.
b) Failure to include in the submission the required documentation will result in the Town, in its sole discretion, electing to discontinue consideration of the submission.

Performance Security

a) No later than five (5) *business Days* following execution of the *Agreement*, the *Contractor* must deliver to the Town *Performance Security* as specified in the *Agreement*. The *Performance Security* must be in the form required by the Town or in a form that is acceptable to the Town, and must be enforceable in the Province of Alberta.

b) If the *Agreement* is amended or a *Change Order* is issued that increases the *Project Price*, the *Contractor* must also increase the *Performance Security* provided under the *Agreement* to an amount not less than 50% of the increased

Project Price by obtaining and providing additional *Performance Security*, or a satisfactory rider or extension to the existing *Performance Security*, from the surety company. If the surety company declines consent or coverage for any amendment to the *Agreement* or for a *Change Order*, the *Contractor* must obtain and provide the Town with valid *Performance Security*, satisfactory to the Town, covering the *Work* specified in the amendment to the *Agreement* or in the *Change Order*. The *Contractor* will be compensated for the additional cost of such *Performance Security*.

SECTION #6 - EVALUATION CRITERIA:

The Town of Drumheller reserves the right to accept/reject any or all Tenders in whole or in part. Proponents may be required to provide supplementary information after the closing date to support their Tender, when requested by the Town. The highest scoring or any Tender will not necessarily be awarded. The lowest cost or any Tender will not necessarily be awarded.

No proponent shall have any claim for any compensation of any kind whatsoever (including, without limitation, the cost of preparing and submitting the Tender, and any anticipated profits and contributions to overhead) against the Town as a result of participating in this process, and by submitting a Tender each Proponent shall be deemed to have agreed that it has no claim. For greater certainty, the Proponent hereby waives any claim for damages or costs of any nature against the Town (including, without limitation, the cost of preparing and submitting the Tender, and any anticipated profits and contributions to overhead) arising out of the Town's use of its discretion under the Tender documents, and the Project Manager's advice to the Town.

Without limiting the generality of the foregoing, the Town may consider any other factor besides price and capability to perform the work that it deems in its sole discretion to be relevant to its decision, including but not limited to the following:

- Any past experience with the Bidder, or lack thereof.
- The results of any reference check done by the Town, not including the Town of Drumheller.
- Information relating to the financial state of the Bidder, however obtained.
- Manufacturing Schedule

The Town's evaluators shall score each submission on the basis stated in Schedule A - Evaluation Criteria. The Town of Drumheller will have the sole and unfettered discretion to award up to the maximum number of points for each criterion listed in Schedule A - Evaluation Criteria. By submitting a Tender, you acknowledge that you have reviewed the Ineligibility Criteria contained herein and you confirm that your Tender meets all requirements of the Town.

SECTION #7 – REFERENCES:

Please supply references for similar work, with similar organizations. The Town of Drumheller cannot be used as a reference.

Reference #1

Company Name: _____

Contact Name: _____

Contact Title: _____

Contact Phone Number: _____

Contact Email: _____

Reference #2

Company Name: _____

Contact Name: _____

Contact Title: _____

Contact Phone Number: _____

Contact Email: _____

Reference #3

Company Name: _____

Contact Name: _____

Contact Title: _____

Contact Phone Number: _____

Contact Email: _____

SECTION #8 - INTENT:

The undersigned Contractor hereby provides a Tender to supply the goods as described herein in its entirety for the cost as described in Section 2 and specified in Schedule B – Price Sheet.

COMPANY: _____

Address: _____

Print name of authorized personnel: _____

Signature: _____Corporate Seal:_____

Email Address: _____

Telephone number: _____

TOWN OF DRUMHELLER:

Print name of authorized personnel: [_____]

Signature: [_____]_____

DATE: YEAR [2023] MONTH [ ] DAY

Upon completion of signatures above, this document will represent a contract agreement between the Contractor and the Town of Drumheller.

SCHEDULE A – EVALUATION CRITERIA

Scoring Template

Tenders will be evaluated in two (2) parts. The Cost Submission of the Tender will be weighted the highest, followed by the proposed schedule weighted the lowest.

Details are as follows:

Item	Weighting
Cost Submission	60
Technical Evaluation (specifications, schedule, warranty, references, financial stability)	40

Technical Evaluation

The criteria that will be evaluated within the technical section will be as follows:

Technical Evaluation Criteria	
Specifications	15
Delivery Schedule	15
Warranty, References and Financial Stability	10
Technical Evaluation Total	40

Cost Evaluation

The cost submissions will be evaluated as follows:

Cost Evaluation		
Cost Calculated Score	Score = (Lowest Cost Submission/RFP Cost of Services) x 60	60

SCHEDULE B – PRICE SHEET

All Bids must be provided in Canadian Funds and exclude GST. All Bidders must complete this Schedule B – Price Sheet.

Item	Price
Chassis	$
Completed Apparatus	$
Loose Equipment	$
Total Price	$

Tender submission price shall be in effect for the duration of the contract from date of acceptance by the Town of Drumheller.

SCHEDULE C – TECHNICAL SPECIFICATIONS

TERMS AND CONDITIONS

1. Notwithstanding any other requirements, the unit shall meet the requirements contained in the Canadian Motor Vehicle Safety Standards, and the applicable Alberta Provincial requirements. It is understood that this truck shall be ULC rated and tested by ULC. The ULC acceptance certificate shall be furnished with the apparatus on delivery.

2. Therefore, this truck shall meet the CAN/ULC-S515-13 standard and this standard shall be considered part of the specifications regardless of whether it is written in the specifications or not as this unit is “Automobile Fire Fighting Apparatus”. Some items requested may not meet the intent of the NFPA but will meet the intent of ULC.

3. The unit when delivered shall have been tested and labeled in the spirit of ULC testing procedure and findings.

4. Apparatus lights and reflectors shall conform to the Alberta Traffic Safety Act and CAN/ULC-S515-13. If there is a conflict, the Alberta Traffic Safety Act will take priority.

5. The bidder shall furnish satisfactory evidence of his ability to construct the apparatus as specified and shall state the location of the factory where the apparatus is to be built.

6. There shall be a list of not less than three (3) of the manufacturer’s apparatus of the type specified in this document, currently in service in Alberta and/or British Columbia. Please provide contact names and phone numbers.

7. The manufacturer shall state the closest location to the purchaser, where they maintain full parts and service facilities for the complete fire apparatus, including body repairs. A description of the service facilities and personnel shall be supplied with the bid. The Bidder shall also provide details of what mobile service is available to deal with service over the life of the unit.

8. The manufacturer shall supply a complete list of warranties that would apply to this apparatus. The manufacturer shall state all warranty arrangements and conditions, such as who is responsible for delivery of the apparatus for warranty work.

9. All financial arrangements for the purchase of the apparatus shall be stated, such as down payment, progress payment, etc.

10. The manufacturer shall supply at the time of delivery, complete operation and maintenance manuals and a digital copy of the completed apparatus "as-built" delivered including but not limited to the chassis, wiring, electrical and communications equipment. In addition, a pre-delivery inspection report and digital "as-built" drawings of the body shall also be submitted at this time.

    The contractor shall supply, at the time of delivery, **at least two (2) copies,** one (1) digital copy and one (1) hard copy of the following documents:

    1. The manufacturer's record of apparatus construction details, including the following information:

        I. Owner's name and address
        II. Apparatus manufacturer, model, and serial number
        III. Chassis make, model, and serial number
        IV. GAWR of front and rear axles
        V. Front tire size and total rated capacity in pounds (kg)
        VI. Rear tire size and total rated capacity in pounds (kg)
        VII. Chassis weight distribution in pounds with water and manufacturer mounted equipment (front and rear)
        VIII. Engine make, model, serial number, rated horsepower and related speed, and governed speed
        IX. Type of fuel and fuel tank capacity
        X. Electrical system voltage and alternator output in amps
        XI. The cab and chassis shall include one (1) compete set of wiring schematics and option wiring diagrams
        XII. Battery make, model, and capacity in cold cranking amps (CCA)
        XIII. Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
        XIV. Pump make, model, UL listed/rated capacity in gallons per minute (liters per minute where applicable), and serial number
        XV. Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number water tank certified capacity in gallons or liters

XVI. Paint manufacturer and paint number(s)

XVII. Company name and signature of responsible company representative

XVIII. Certification of slip resistance of all stepping, standing, and walking surfaces

XIX. A copy of the following shall be provided: pump manufacturers certification of suction capability, apparatus manufacturers approval for stationary pumping applications, engine manufacturers certified brake horsepower curve showing the maximum governed speed, pump manufacturers certification of the hydrostatic test, and the certification of inspection and test for the fire pump.

XX. If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source

XXI. If the apparatus is equipped with an air system, test results of the air quality, the SCBA fill station, and the air system installation

XXII. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)

XXIII. Written load analysis and results of the electrical system performance tests

XXIV. Certification of water tank capacity

XXV. ULC Required Documentation

11. A complete schematic of the electrical system added by the manufacturer shall be supplied. This schematic shall be an as built, specific to the apparatus and not a general drawing. Two (2) copies are required, one (1) digital and one (1) hard copy of blueprint size and laminated.

12. Training will be provided by the bidder at time of delivery for a minimum period of one day(s). All accommodation for the trainer(s) will be provided by the bidder. The trainer(s) must be skilled in all aspects of the apparatus, including but limited to:
    i. Maintenance and inspection
    ii. Pump and associated systems operation
    iii. Electrical systems
    iv. Computer based systems and diagnostics
    v. Supplied equipment
    vi. Normal operation
    vii. Emergency operations

13. The bidder shall stipulate the time required to complete and deliver the unit. The units shall be completely assembled, and adjusted, and all equipment including standard and supplemental equipment shall be installed and the unit made ready for continuous operation upon delivery to the Town of Drumheller.

14. The bidder shall respond to the specifications on this form. Any bidder that responds on any other type of form will be considered non-responsive. This form allows comparison of what is being offered by each bidder against the specification.

15. The bidder shall type in "YES" to the right of each item if the bidder complies with the whole item.

    If the bidder is meeting only a portion of the item or is offering an alternative, the bidder shall type in "EXCEPTION" to the right of each item and explain the exception. EXCEPTIONS ARE ANTICIPATED. If the explanation requires more space, please provide an extra sheet noting page numbers.

    If the bidder is not meeting the specifications or not providing the item, type in "NO" to the right of each item.

    Please note that taking an exception will not eliminate the bidder from being successful as long as there is an exception noted that can be evaluated. All exceptions must be equal to or greater than the standard listed.

16. The Apparatus shall be free of paint bubbling or peeling as a result of a defect in the method of manufacture or the paint manufacture for a period of five (5) years starting (30) calendar days from the final invoice date. Meeting the Can ULC S 515 Standard.

17. Unit must meet Standard 10 of the National Safety Code, titled Cargo Securement. Adopted by the Alberta Cargo Securement Regulation, (AR1/2005).

18. The bidder shall be prepared to make a personal presentation, explaining their bid if requested.

19. The supplied bid packages and the contents within will become the property of the Town of Drumheller. It is understood that any copyrighted documents within the bid shall remain the copyright owner's property.

20. The bidder shall supply drawings of the proposed apparatus being bid; the drawings shall show all five (5) sides of the apparatus.

    Bid drawings will be stamped PRELIMINARY DRAFT and will be printed on white paper in black ink.

    A total of six (6) "C" size drawings and one (1) 11" x 17" drawing will be supplied. All drawings will be drawn and printed in a 3/8 to 1 scale. Compartment door opening dimensions will be shown on table on the drawing which will refer to each compartment number, such as L1, R1, T1.

Drawings will include five (5) views. (Left, Right, Front, Rear, Top). Rear plumbing, such as 2-1/2" discharges, rear steamers, and direct tank fills, will be shown. Ladders will be labeled with a letter designation referring to the table for an explanation of the ladder type.

i. OAL (Overall Length) in Feet & Inches; estimated length will be rounded up to the nearest inch
ii. OAH (Overall height) in Feet & Inches; estimated height will be rounded up to the nearest inch
iii. Body dimensions shown - Pump House width & front of the body to centerline of the rear axle
iv. Wheelbase in inches
v. Front and rear overhang in inches
vi. No Pump Panel or Instrument Panel Controls, discharges or inlets. To be blank and labeled "Pump Panel"
vii. Water tank outline
viii. Foam tank(s) fill towers
ix. Exterior mounted hard suction hose
x. Warning lights
xi. D.O.T. lights
xii. Generator outline
xiii. Front bumper layout
xiv. Roll up doors will be shown in open position, Lap doors will be shown in the closed position
xv. Compartment depth break over measurement; the measurement where the compartment switches from full depth to shallow depth
xvi. Angles of approach and departure
xvii. Drawing of cab dash including instrument and control placement
xviii. Schematic diagram of all compartments; showing locations of portable equipment, ladder carrying system, and hard suction hose c/w sizes, showing locations and number of compartments

21. Allowance for two (2) site visits by two (2) people each visit shall be incorporated into the bid. One site visit for a preconstruction conference and one visit for pre delivery inspection.

22. The bidder must have on staff or under contract a mobile service licensed Emergency Vehicle Technician who will come to the Town of Drumheller fire department for any service in Drumheller, Alberta within twenty-four hours of a call for service. The bidder must be able to provide proof of EVT staffing or contract upon request.

	YES	NO	EXCEPTION
DELIVERY The bidder will provide a proposed delivery date for the apparatus. When the apparatus complete and ready for operation in calendar days from the date of preconstruction meeting, providing there are no delays with the chassis delivery. The apparatus, to ensure proper break-in of all components, shall be delivered under its own power - rail or truck freight is not acceptable. **ANGLE OF APPROACH** The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901. **ANGLE OF DEPARTURE** The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901. **ELECTRONIC STABILITY CONTROL** Electronic stability control shall be supplied on the chassis. **PRE-CONSTRUCTION CONFERENCE** A pre-construction conference for two (2) representatives of the fire department shall be conducted at the apparatus manufacturer's factory at which time all final designs and equipment mounting locations will be approved, prior to any sheet metal being cut. A factory employed design engineer shall be present during the pre-construction conference to answer any design, and/or engineering questions relating to the layout of the apparatus. Air travel (for distances over 400 Km), meals, and lodging expenses shall be included. **MANUFACTURING UPDATES** During construction digital photographs and video will be provided specified milestones during the build. At each milestone a minimum of 10 digital photographs and a digital video of no less than one minute shall be provided. Milestones shall include; - Delivered Chassis - Pump Mounted - Tank Installation - Body Installation - Pump Panel Installation - Console Installation **FINAL INSPECTION** A final inspection conference for two (2) representatives of the fire department shall be conducted at the apparatus manufacturer's factory at which time all final designs and equipment mounting locations will be inspected. Air travel (for distances over 400 Km), meals, and lodging expenses shall be included.			

DEMONSTRATION Fire Department personnel shall be properly instructed as to the proper use of the entire apparatus including, but not limited to, chassis, fire pump system, the apparatus and all equipment. The demonstration shall be made by a factory trained Specialist who shall be responsible for complete instruction as to operation and maintenance of the chassis, and the completed vehicle. The demonstration specialist shall remain at the Fire Department for a sufficient amount of time to provide thorough instructions to all personnel, or as instructed by Chief of the Department. All meals, motel and travel costs shall be the responsibility of the successful bidder. **LOCAL SALES AND SERVICE VEHICLE SUPPORT** The manufacturer and local sales/service facility shall provide information pertaining to authorized local sales representative of the apparatus. The representative is capable of repairing the apparatus and has a service center located within 500 kilometers of the purchaser. This facility provides complete repair, maintenance and service of the apparatus. This dealer shall have in their employ, qualified full-time employee(s) who are capable and certified of repairing the apparatus. The local service dealer shall make available their service center for inspection tour at the convenience of the fire officials and/or their designates. 1. Service Center Name: 2. Location: 3. Telephone: 4. Fax: 5. Square Footage of Service Center: 6. Is the Service Center Enclosed and Heated? 7. Number of Service Technicians: 8. Service Shop and Sources to Handle the Following: A) Body Repairs Including Welding B) Minor Paint Work C) Chassis Repairs and Service D) Major Component Repairs & Service E) Electric Repairs and Service			

BUMPER TO BUMPER WARRANTY The manufacturer shall warrant each new motorized fire apparatus for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein. All Warranty repairs FOB apparatus base of operations. **ALUMINUM BODY WARRANTY - FIVE YEAR** The manufacturer shall warrant to the original purchaser only, that the all-aluminum body, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) years. **PAINT WARRANTY FIVE YEAR** The paint guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser. The full apparatus body, manufactured and painted by the manufacturer, shall be covered for the following paint failures as outlined on the guarantee certificate: Peeling or delaminating of the topcoat and/or other layers of paint. Cracking or checking. Loss of gloss caused by cracking, checking, or hazing. Any paint failure caused by defective PPG Fleet Finishes, which are covered by this guarantee. All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser. **STAINLESS STEEL PLUMBING WARRANTY** The manufacturer shall warrant to the original purchaser only that stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of the delivery and shall terminate upon the transfer of possession or ownership by original purchaser. **OPERATION AND FAMILIARIZATION MANUAL** The apparatus manufacturer shall supply, at delivery, customized Operation & Familiarization Manual, complete with full-color photos of the actual, completed apparatus with each feature and control identified and its function explained. Safety, Operation, Maintenance and Troubleshooting sections will include information about each major component of the apparatus (chassis, pump, foam system, generator, electrical devices, etc.). The manual shall be specific to the apparatus (or group of apparatus) being delivered.			

All safety and warning labels shall be represented in the manual for subsequent safety inspections to ensure their continued presence on the apparatus. "Similar" or "Representative" manuals will not be accepted. NO EXCEPTIONS ***Parts Listings within Manuals*** The manuals will include cross-reference part numbers from the manufacturer part number to the vendor parts. These shall be "As Built" and tenders with "typical" or "generic" manuals will be rejected. ***Illustrative Schematics within Manuals*** The manufacturer shall include installation diagrams and drawings of all major sub-assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturing document. Bidder shall submit a sample schematic with their response. ***Digital Images within Manuals*** In addition to two and three-dimensional installation drawings, the manufacturer shall make accessible, via an internet based link, the actual photos of the installed components listed within the line sheet. This will include, but not limited to wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. Bidder shall submit a sample of these with their bid response. **ELECTRICAL SCHEMATICS** To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. As Built. The electrical information shall be provided as follows: ***Wiring Systems 12 and 120 Volt:*** Graphic symbols for electrical diagrams. Wire labeling, imprinting codes and index. Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle. The manufacturer shall submit, a sample set of diagrams with their bid response. **PAINT** ***DESIGN*** Truck Cab One Colour Paint Body One Colour			

Certification / Compliance **LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS** The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards. All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction. The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels. The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system. There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards. The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.			

The electrical system shall include the following: Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body. The electrical wiring shall be harnessed or be placed in a protective loom. Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof. Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it. A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function. A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake. **NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM** The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer: ***1. Reserve capacity test:*** The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test. ***2. Alternator performance test at idle:***			

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure. ***3. Alternator performance test at full load:*** The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed. ***4. Low voltage alarm test:*** Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure. **NFPA REQUIRED DOCUMENTATION** The following documentation shall be provided on delivery of the apparatus: a. Documentation of the electrical system performance tests required above. b. A written load analysis, including: 1. The nameplate rating of the alternator. 2. The alternator rating under the conditions. 3. Each specified component load. 4. Individual intermittent loads. **WEATHER RESISTANT ELECTRICAL JUNCTION BOX** The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. **VEHICLE DATA RECORDER/SEAT BELT MONITOR** The apparatus shall include Class1 vehicle data recorder and seat belt monitoring equipment. The following equipment shall be supplied:			

one (1) 119914 vehicle data recorder one (1) 120308 seatbelt warning module one (1) 118620 small rocker style seatbelt warning display one (1) 120158 harness seatbelt module with pigtail one (1) 120159 harness VDR module pigtail The equipment shall be set to monitor all commercial chassis cab seats, with sensors supplied with the chassis seats. **BODY MANUAL - ELECTRONIC** One (1) digitized manual(s) shall be provided on operation of the complete apparatus. The manual(s) shall include a troubleshooting guide complete with recommended daily, weekly and annual maintenance procedures. The apparatus manufacturer shall supply a complete wiring diagram for the color coded wiring harness. **WEIGHT AND BALANCE CALCULATION** The apparatus, prior to acceptance will be required to meet the vehicle stability of the applicable NFPA or ULC automotive fire apparatus standard. A calculated center of gravity shall be performed to ensure the apparatus meets these requirements. The calculated center of gravity shall be no higher than 80 percent of the rear track axle width. **TESTING AND CERTIFICATION** The completed vehicle shall be tested by the manufacturer. The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system. There shall be no conditional, temporary, or partial certification of test results. Appropriate forms of data sheets shall be provided and used during testing. **TESTING AND CERTIFICATION** The completed vehicle shall be tested and labeled to CAN/ULC-S515-13 Second Edition by an independent third party certification organization. The third party organization shall be accredited for testing systems on fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65. The certification organization shall not be owned or controlled by manufacturers or vendors of the apparatus being tested. The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability. The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system. There shall be no conditional, temporary, or partial certification of test results. Appropriate forms of data sheets shall be provided and used during testing. Manufacturer's certification **is not** acceptable. **(Mandatory Requirement)** **CARRYING CAPACITY PLATE** A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab. Another warning label shall be provided in the cab within sight of the driver that the occupants must be seated and belted.			

VEHICLE DIMENSION PLATE A warning label shall be provided in the cab within sight of the driver stating the following apparatus dimensions: Height and length in standard and metric measurements. Gross vehicle weight rating in pounds and kilograms. **DIELECTRIC VOLTAGE TESTING** The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made. **FLUID CAPACITY AND TYPE LABEL** A permanent label shall be provided and shall state the type and quantity of the following fluids used in the vehicle: Engine Oil Engine Coolant Chassis Transmission Fluid Drive Axle Fluid Pump Engine Oil Pump Gear Case Primer Lubricant (If Applicable) **CHASSIS SPECIFICATIONS** An International four door chassis shall be supplied as per the attached specifications. **Vehicle Configuration** Four Wheel Drive 5 Passenger Crew Cab 199.00 Wheelbase Engine 6.6 Liter 350 BHP Transmission Allision 2700 Front Axle 7,500 lb Rear Axle 15,500 CV51500 Base Chassis, Model CV515 SFA with 219.00 Wheelbase, 103.80 CA, and 75.00 Axle to Frame. 1570 TOW HOOK, FRONT (2) Frame Mounted 1AMM SKID PLATE Steel, Frame Mounted, Protects the Transfer Case from the Ground 1ANB AXLE CONFIGURATION {Navistar} 4x4 1CGH FRAME RAILS High Strength Low Alloy Steel (50,000 PSI Yield), Straight Top Flange with Contoured Bottom, Height Transitions from 7.375" (187.325mm) to 9.125" (231.775mm) to 7.625" (193.675mm); Width: 3.079" (78.21mm); Thickness: 0.3125" (7.94mm); 383.3" (9735.8mm) Max OAL			

1LEG LICENSE PLATE HOLDER Includes Upper & Lower Mounting Plate Hardware, Mounted in Existing Holes in Front Bumper 1LNZ BUMPER, FRONT Contoured, Steel, Chrome Plated, for CV and RE Bus 1WEC WHEELBASE RANGE 185" (470cm) Through and Including 236" (600cm) 1WND AF RANGE 50" (128cm) Through and Including 75" (190cm) 2EWA AXLE, FRONT DRIVING {Dana Spicer 60-256} Single Reduction, 7,500-lb Capacity, with Hub Piloted Wheel Mounting 2WLC AXLE, FRONT DRIVING, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints 3AJN SUSPENSION, FRONT, SPRING Parabolic Taper Leaf, Shackle Type, 7,500-lb Capacity, with Shock Absorbers 3WAP STABILIZER BAR, FRONT 4240 BRAKE SYSTEM, HYDRAULIC {Bosch} Split System, with Four Channel ABS, Traction Control, Electronic Stability Control, Hydromax Brake Booster with High Speed Master Cylinder and Trailer Sway Control 4EVD DUST SHIELDS, FRONT BRAKE for Hydraulic Brakes 4EVE DUST SHIELDS, REAR BRAKE for Hydraulic Brakes 4GBJ BRAKE, PARKING {Bosch} DSSA Type, 12" x 3"; for Hydraulic Brake Chassis; Foot Operated in Cab; Differential Mounted 4XCU BRAKES, FRONT {Meritor Quadraulic} Hydraulic Disc Type, with Four 64mm Diameter Pistons, 8,000-lb Capacity 4XCV BRAKES, REAR {Meritor Quadraulic} Hydraulic Disc Type, with Four 64mm Diameter Pistons, 15,500-lb Capacity per Axle 5708 STEERING COLUMN Tilting 5CBG STEERING WHEEL 4-Spoke; 15" Dia., Black 5PSS STEERING GEAR {Bosch S2 8014 Plus} Power			

7BLL EXHAUST SYSTEM Horizontal, Frame Mounted Right Side, Under Rail, for Single Exhaust 7SDS ENGINE EXHAUST BRAKE for International 6.6 Engine 7WDU TAIL PIPE (1) Horizontal, Exits Right Side Ahead of Rear Wheel 7XAA MANUAL REGEN Capability 8002 ELECTRICAL SYSTEM 12-Volt for CV Model 8GJB ALTERNATOR {Denso SC6} Brush Type, 12 Volt, 220 Amp Capacity 8HBW TRAILER BRAKE CONTROL Integrated Code Description 8HXU BODY BUILDER WIRING Rear of Frame; Includes One Sealed Connector for Separate Ground/Backup/ Left and Right Hand Turn, Left and Right Hand Tail/Stop/ Accessory Power and Combined for Left and Right Hand Stop/Turn 8MWA BATTERY SYSTEM {VARTA} Maintenance-Free, (2) 12-Volt 1300CCA Total, Top Threaded Stud 8RNU SPEAKERS (6) 8RNV RADIO AM/FM/Clock/Bluetooth, Seek/Scan, with 7" Color Touch Panel Display, Satellite Radio Compatible 8RNY CAMERA SYSTEM, REAR VIEW Includes Camera, Mounting, Wiring and Interface to the Monitor, for the Back-up Camera System 8THB BACK-UP ALARM Electric, 102 dBA 8TRA TRAILER CONNECTION SOCKET Mounted at Rear of Frame, Wired for Turn Signals Combined with Stop, Compatible with Trailers with Combined Stop, Tail, Turn Lamps 8TUL STOP, TURN, TAIL & B/U LIGHTS Multi-Function, Sealed, Incandescent Stop, Turn and Taillights, Backup Lights with Rear Reflex Reflector, Includes License Plate Light 8VAY HORN, ELECTRIC Disc Style 8VVB BATTERY BOX Steel, with Plastic Cover, 2 Battery Capacity, Parallel to Rail, 28" Wide, Mounted Left Side Under Cab 8WBW JUMP START STUD Remote Mounted 8WTT SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer			

Furnished End of Frame Light 8XJG FOG LIGHTS (2) Clear Lens, Halogen, Rectangular, with White Light Source 8XJM HEADLIGHTS Halogen, Composite Aero Design, Chrome Trim Bezel, with Daytime Running Lights 8XJP SWITCH, AUXILIARY 1 to 4 Latching Switches with 30-Amp Fuses 8XJV CLEARANCE/MARKER LIGHTS (5) Amber LED Lights, Flush Mounted on Cab 8XJW STARTING MOTOR 12 Volt 8XKS SWITCH, TOGGLE, ROOF WORKLIGHT Lighted; in Overhead Console and Wiring Effects for Customer Furnished Roof Mounted Light 8XLS TOGGLE SWITCH, AUXILIARY (6) with 20-Amp Fuses, Maximum of 200 Amp. Load, Accessory Controlled, with Switches in Headliner 9AAB LOGOS EXTERIOR Model Badges 9HCG GRILLE Chrome, with Chrome Headlight Bezels 9HCU RADIATOR STONE GUARD Mounted to Front Bumper 9WAC BUG SCREEN Mounted Behind Grille 9WAY FRONT END Tilting, Fiberglass, with Three Piece Construction 9WBN FENDER EXTENSIONS Painted 10060 PAINT SCHEMATIC, PT-1 Single Color, Design 100 10761 PAINT TYPE Base Coat/Clear Coat, 1-2 Tone 10769 PAINT CLASS Premium Color 10WBS KEYS - ALL ALIKE, ADDITIONAL 2 Keys 10WUE MUD FLAPS, FRONT WHEELS (2) Rubber, Mounted on Fender Extension 10XAX GVWR WEIGHT CLASSIFICATION Class 6 (19,501-26,000 lbs) 12GAG ENGINE, DIESEL {International 6.6} EPA 2021, 350 HP @ 2700 RPM, 700 lb.-ft Torque @ 1600 RPM, 2900 RPM Governed Speed, 350 Peak HP (Max) 12TTM FAN DRIVE Viscous Type, Screw On, Rear Tether, Electronically Controlled			

12VGC AIR CLEANER Single Element, with Water Separator 12VJP EMISSION, CALENDAR YEAR {International 6.6} EPA, OBD and GHG Certified for Calendar Year 2023 12WGG THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic Controlled, On/Off Switch Mounted on Dash, with Steering Wheel Button Control 12WUU GOVERNOR Electronic Road Speed Type; with 75 MPH Default 12XBL BLOCK HEATER, ENGINE 120V/800W 12XZD RADIATOR Aluminum, 3-Row, Down Flow, Front to Back System, 730 SqIn Louvered, with 578 SqIn Charge Air Cooler, Includes In-Tank Oil Cooler 13BCJ TRANSMISSION, AUTOMATIC {Allison 2750 EVS} 6th Generation Controls, Close Ratio, 6-Speed with Double Overdrive, with PTO Provision, Less Retarder, Includes Park Pawl, with 23,500-lb GVW and 37,500-lb GCW Max, On/Off Highway 13TLP TRANSFER CASE {Meritor MTC-3203} 2-Speed, Gear Drive, 3,000 lb.-ft Torque Rating, Less PTO Provision, Electric Shift Control 13TLS PTO ACCOMMODATION PKG Includes Flex Section on Transmission Oil Cooler Lines to Enable PTO Lube Plumbing 13WVV NEUTRAL AT STOP Allison Transmission Shifts to Neutral When Service Brake is Depressed and Vehicle is at Stop; Remains in Neutral Until Service Brake is Released 13WYY SHIFT CONTROL PARAMETERS {Allison} 1000 or 2000 Series Transmissions, Performance Programming 13XAM PTO LOCATION Dual, Customer Intends to Install PTO at Left and/or Right Side of Transmission 14897 DIFFERENTIAL, LOCKING {Dana Spicer Trac-Lok} Torque Proportioning Limited Slip 14AJE AXLE, REAR, SINGLE {Dana Spicer S16-130} Single Reduction, 15,500-lb Capacity, 190 Wheel Ends . Gear Ratio: 4.30 14SAE SUSPENSION, REAR, SINGLE 15,500-lb Capacity, Vari-Rate Springs 14WAP SHOCK ABSORBERS, REAR (2) 14WMN AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints 15SZN FUEL TANK Top Draw, Plastic, Rectangular, 17" Tank Depth, 40 US Gal (151L), Includes Auxiliary Draw Port			

and Fuel Filler Assembly, Mounted Between Frame Rails and Behind Rear Axle 15WDZ DEF TANK 6.75 US Gal (26L) Capacity, Frame Mounted Outside Right Rail, Under Cab 16196 CAB Conventional 6-Man Crew Cab 16ACA MIRROR, INSIDE REAR VIEW Omit 16BBB GLASS, ALL WINDOWS Deep Tinted, Rear Glass Only on Day Cab, Rear Doors and Rear Glass on Crew Cab 16CEM COLOR, INTERIOR Dark Ash 16HCU GAUGE CLUSTER Metric Speedometer, Includes Metric Odometer; Includes 3.5" Monochromatic Display with Personalization, Warning Messages and Vehicle Information 16KVU SEAT, DRIVER High Back with Integral Headrest, 10-Way Power Adjustable, Cloth, Power Lumbar 16KZB SEAT, REAR BENCH, Cloth 16LVV SEAT, PASSENGER High Back with Integral Headrest, Cloth, with Recline, without Center Section. Center Area of Floor Between Seats will be Untrimmed 16SPT MIRRORS (2) Manual Folding and Extending, Power Adjust, Heated, Turn Signal Indicator Located in Mirror, Bright Heads and Arms, for 96" Load Width 16VCA SEAT BELT All Red; 4 to 6 16VKD CAB INTERIOR TRIM Classic, for Crew Cab 16WHJ HOSE CLAMPS, HEATER HOSE {Breeze} Belleville Washer Type 16XCP AIR BAG, FRONT, DRIVER SIDE 16XCR AIR BAG, FRONT, PASSENGER SIDE 16XCT WINDOW, POWER (4) in Left and Right Doors, Front and Rear 16XDE AIR BAG, SIDE, DRIVER Seat Mounted, Outboard Side-Impact Airbag 16XDG AIR BAG, SIDE, PASSENGER Seat Mounted, Outboard Side-Impact Airbag 16XDH AIR BAG, SIDE CURTAIN Roof Mounted, for Front and Rear Outboard Seating Positions for Driver and Passenger Sides 16XUD ACCESS, CAB Bright Aluminum, Driver & Passenger Sides, One Step per Door, for use with Crew Cab			

16XZA AIR CONDITIONER with Heater, Single Zone 27DVT WHEELS, FRONT {Alcoa 76543} DISC; 19.5x6.75 Rims, Mirror Polish Aluminum, 8-Stud, 275mm BC, Hub Piloted, Flanged Nut, with Steel Hubs 28DVT WHEELS, REAR {Alcoa 76543} DUAL DISC; 19.5" Mirror Polish Aluminum Outer Wheel and Steel Inner Wheel, 8-Stud (275MM BC) Hub Piloted, Flanged Nut, Metric Mount, 6.75 Rims; with Steel Hubs 29ACD TIRE VALVE CAP Flo-Thru Design 29PBY COATING IDENTITY, REAR WHEELS {Alcoa Dura-Bright XBR/EVO} Disc Rear Wheels, Aluminum, with Vendor Applied Treatment, Not for Super Single/Wide Base 29PBZ COATING IDENTITY, FRONT WHEELS {Alcoa Dura-Bright XBR/EVO} Disc Front Wheels, Aluminum, with Vendor Applied Treatment, Not for Wide Base 7789445449 (2) TIRE, FRONT 225/70R19.5 Load Range H HSR+ (CONTINENTAL), 645 rev/mile, 87 MPH, All-Position 7789445450 (4) TIRE, REAR 225/70R19.5 Load Range H HDR+ (CONTINENTAL), 643 rev/mile, 87 MPH, Drive Services Section: 40131 WARRANTY Standard for CV515, Effective with Vehicles Built December 3, 2018 or Later, CTS-3000A **CONSOLE - PAINTED** There shall be a console installed in the chassis cab with an angled design making it easier to access vital emergency controls. The top of the console shall be easily removable for maintenance and service. The console shall have a storage bin with a gray painted finish. **CAB DOME LIGHT(S) - RED** One (1) red dome light(s) shall be installed in the cab on the cab ceiling. The light(s) shall have an integral on/off switch located on the light assembly. **GOOSE NECK MAP LIGHT** A flexible "Goose Neck" map light shall be provided in the cab and wired into the chassis 12 volt electrical system. This light shall have an integral on/off controls switch. **<u>Battery Charger - Kussmaul - Autocharge 1000 PLC</u>** A Kussmaul Auto Charge #1000 Series Model #091-215-12, 15 amp battery charger and 3 amp Battery Saver shall be installed. The Auto Charge 1000 with Parasitic Load Compensation (PLC) is a compact, microprocessor controlled, completely automatic, single channel battery charger designed for vehicles with a single battery system. The PLC charger is designed to withstand the shock and vibration encountered by vehicle mounted equipment. The Battery Saver component shall eliminate drain on vehicle's battery system when vehicle is not in use. The system shall automatically disconnect			

auxiliary vehicle loads from battery when the charger is energized. Parasitic Load Compensation feature is designed especially to meet the heavy duty requirements of emergency vehicles. Parasitic load compensation allows you to input the total number of parasitic load amps on the vehicle. Then the charger will shift the absorption stage set point so the battery voltage will drop to the float voltage when the desired current is reached. This will lead to a longer battery life and no overcharging or overheating. The charger shall have the following operational specifications: 120 volts AC input at 3.5 amps Battery Charger: 12 volts DC output at 15 amps Battery Saver: 3 amps 12 volt DC output 8 Pin Selector Switch on front panel Battery Type: Lead-Acid, Gel Cell, AGM or Odyssey Float / 3-Step Battery Saver ON/OFF Parasitic Load Compensation AC power applied light on front panel System LED Status Indicator on front panel Dimensions of: 9.35" high x 5.9" wide x 4.725" deep and weighs 11 lbs. **SHORELINE INLET - KUSSMAUL SUPER AUTO EJECT - 20 AMP** A Kussmaul Super Auto Eject Model #091-55-20-120, 20 amp 120 volt shore power assembly, cover, solenoid input wire, power cord, and plug shall be installed. The 12 volt solenoid shall eject the shore power cord away from vehicle path upon sensing engine start; after ejection, the weatherproof cover snaps into position over inlet. The unit shall sequence energizing of an Auto Eject, eliminating terminal arching when connecting and disconnecting power cord. The unit shall have a waterproof back enclosure with watertight cable fittings, which protect mechanism from road contamination. A pre-wired 3 foot AC electrical cord and starting sense wire (side wired) shall be installed. The assembly shall have the following dimensions: 6.17" high x 4.08" wide x 2.8" deep with 4 lb. weight. Cover color to be yellow. Other colors available, please specify if otherwise: red, blue, white, gray, black. This line shall be tied to facilitate shoreline power to 110 Volt plugs on the unit. **BATTERY CHARGER REMOTE DIGITAL DISPLAY** The charger shall include a Model #091-199-001 single bar remote digital display. Location to be specified. **CAB STEP LIGHTING** Each cab step shall be illuminated by Tecniq P/N E03 LED lights to meet the requirements of NFPA 1901. **TRANSPORTATION ROAD SAFETY KIT** The following Transportation Road Safety Kit shall be supplied. One (1) 2.5 lb. ABC vehicle type fire extinguisher with mounting bracket. One (1) standard First Aid Kit shall be provided. One (1) set of three (3) dual faced triangular warning flares to meet the Department of Transportation's Motor Vehicle Safety Standards.			

RECEIVER HITCH - CLASS V There shall be a receiver hitch installed on the rear of the apparatus. The receiver hitch shall be rated at 10,000 lbs. There shall be a receiver hitch installed on the front of the apparatus. The receiver hitch shall be rated at 10,000 lbs. There shall be a receiver hitch installed on the officer side of the apparatus. The receiver hitch shall be rated at 10,000 lbs. There shall be a receiver hitch installed on the Driver Operator side of the apparatus. The receiver hitch shall be rated at 10,000 lbs. **RECEIVER WINCH POWER HOOKUP** There shall be a winch quick connect plug installed at each of the side receiver locations. The quick connect plug shall have a weatherproof cover. Each winch connection point shall be tied to the chassis battery with a minimum 2ga. 200 amp rated battery cable. **WARN ZEON 10K PORTABLE WINCH.** The apparatus shall be equipped with a Warn Zeon 10 winch. The winch shall come with a carrier basket designed to be mounted in a receiver hitch. The winch shall have a rated pull of 10,000 lbs at 4.8 feet per second and a 409 amp draw at 10,000 lbs. The winch shall be equipped with 80 feet of 3/8" galvanized steel wire rope. The winch shall come with a roller fairlead system The control for the winch shall be with a plug-in remote-control unit. The unit shall have 12 feet of remote-control cable, with forward, neutral, and reverse dead man type hand control. **WINCH CARRIER STORAGE IN COMPARTMENT** A 2.5" x 2.5" x .125" steel receiver shall be installed in a compartment interior, as per the fire departments specifications, to securely store a Warn 10,000lb. winch in a Warn winch carrier. The receiver shall be painted with black. The winch shall be secured with a Warn P/N 63063 5/8" hitch pin with clevis pin. Turtle Tile Red shall be in compartment to protect floor. A caution label shall be permanently mounted near the receiver to warn to secure the winch carrier while the apparatus is moving. **TRAILER WIRING** There shall be wiring installed for connection to the customer supplied trailer. The wiring shall be wrapped in a weather resistant loom and be firmly secured to the apparatus body.			

TRAILER BRAKE A trailer electric breaking system shall be installed if not furnished with chassis **TIRE PRESSURE MANAGEMENT** Six (6) pop-up tire pressure caps shall be supplied for the single axle chassis (1x per tire). **FRONT ALIGNMENT** The chassis steering shall be aligned at a qualified alignment center prior to delivery to the fire department. Documents shall be provided with the manual stating the alignment has been completed. **110 VOLT CAB/CREW CAB RECEPTACLE(S)** One (1) 110 volt three prong, duplex straight blade receptacle(s) shall be provided in the cab/crew cab area and connected directly to the shoreline receptacle. These receptacles should also provide two USB Ports. **CHASSIS WHEELS** The chassis wheels shall be an aluminum polished finish from the chassis supplier. **CHROME HUB AND LUG NUT COVERS** The front wheels shall be fitted with chrome hub covers. The rear wheels shall be fitted with chrome hub covers. All front and rear wheel lug nuts shall have chrome lug nut covers installed. **CHASSIS PREPARATION** The chassis shall be carefully inspected for compliance to the required specifications and to assure that it is ready for apparatus construction. Any components that require relocation or modification shall be done at this time. **CHASSIS EXHAUST MODIFICATIONS** To maintain chassis engine performance, the chassis exhaust shall be modified minimally after any exhaust treatment devices and shall meet the chassis supplier's recommendations. The exhaust shall exit at the curbside of the apparatus before the rear axles and shall be a straight exhaust pipe design. As Required. **EXHAUST SYSTEM HEAT SHIELD** Where the chassis exhaust piping passes under or near a body compartment, the exhaust piping shall be shielded utilizing a heat shield manufactured aluminum checker plate to prevent compartment exposure to radiant heat as required.			

The heat shield shall be mounted to the tail pipe with suitably sized muffler clamps. **FRONT AND REAR MUD FLAPS** Six (6) heavy duty rubber rear mud flaps shall be provided and installed on the apparatus. The mud flaps shall be installed behind the front wheels, front of service body and rear wheels. Mud flaps will be chained back as to not fold into wheels when reversing. **ALUMINUM CHECKER PLATE COVERS** There shall be .125" aluminum checker plate trim installed at the chassis steps. The checker plate shall be easily removable for ease of service and maintenance if required. **COMPARTMENT PARTITIONS** A compartment partition shall be provided. Each compartment partition shall be manufactured from 3/16" aluminum and bolted into place in the body compartment. **COMPARTMENT SHELVING - ADJUSTABLE** Six (6) adjustable 3/16" aluminum compartment shelves with upturned edges shall be provided. Each shelf shall be provided with plastic matting. Shelving to be provided for Compartments R2 and L3 **ADJUSTABLE SHELVING UNI-STRUT SIDE TRACKS** Eight (3) set(s) of four (4) aluminum Unistrut side tracks shall be provided for installation of adjustable shelves. Front Wall Transverse Compartment and Compartments R2 and L3 **SWING OUT TOOL BOARDS** Two (2) Swing out tool boards shall be provided in L2 compartment. **ROLL OUT TRAY(S)** Three (3) Roll out trays shall be provided. Slide Master preferred. The tray(s) shall have two (1) side mounted, 500 lb. to be located L3 compartment Slide Master type preferred. The tray shall be supplied with plastic floor matting and corner drain holes. Compartment B1 will have installed 1000 Lb Sliding Tray. Slide Master Type preferred. Front pass-through compartment. L1 R1. Shall Have one bidirectional sliding tray Slide Master type All trays shall come with turtle tile red in colour. **VERTICAL TOOLBOARD(S) ON SLIDE OUT TRAY** Four(4) vertical tool boards(s) shall be installed on the specified slide out trays. The vertical tool boards shall be manufactured from aluminum. These tool boards are in compartments B1 Front Transverse mounted on Slide master Trays.			

VERTICAL TOOLBOARDS Three (3) Vertical Tool Boards shall be provided in L3 Compartment The Vertical Tool Boards shall be affixed to the top and bottom of the compartment. **SCBA AIR BOTTLE STORAGE** In the lower section between frame rail and door there shall be SCBA bottle storage supplied. Bidder to design a storage system to hold a maximum amount of cylinders securely in the space. R1 Compartment. 25.5" X 19" If this design is impractical wheel well provisions for a minimum of five (5) SCBA bottles shall be supplied. **ABSORBENT HOPPER** A custom absorbent hopper will be designed to be installed in lower compartment L1. The hopper will fill from the top and material will be accessed buy a sliding trap door mechanism under the body. **SCBA BRACKETS** Five (5) Ziamatic (Zico) ULLH-EZO Ez-Out SCBA Brackets. Brackets to be installed on board located on transverse slide master tray located R1 L1 The door shall be tied to the door ajar warning light in the chassis cab. **APPARATUS BODY** The body shall be fabricated with the highest quality components available, and acceptable to the fire service industry. Only new components shall be in the manufacturing process. The body shall be engineered and designed to provide a low center of gravity and carry a correct load distribution. The entire body superstructure and sub frame shall be constructed of heavy-duty tubular aluminum and channels to provide a full frame body design. The use of tubular aluminum and channels shall provide for extreme strength, maximum durability, and maximum resistance to buckling and failure. The full frame body construction method shall provide for greater strength and integrity. Formed body construction shall not be acceptable. All compartments shall be fabricated with 1/8" aluminum panels. Which are inserted into the body framework. The framework allows for reinforcement to the compartment, for installation of heavy equipment. The 1/8" aluminum panels. Panels shall provide extreme strength, rust corrosion resistance, and maximum durability.			

BODY SUBFRAME The front cross member shall be a heavy duty 3" x 3" x 1/4" aluminum extrusions providing maximum strength and durability. The rear cross members shall be heavy duty 3" x 3" x 1/4" aluminum extrusions providing maximum strength and durability at the rear section of the body. These body cross members shall extend the full width of the body. The cross members shall provide support for the body side compartments and rear tailboard section. The body sub frame and the chassis frame shall be insulated and separated. The body side compartments, both sides and the rear shall be full frame constructed from heavy-duty aluminum extrusions 2" x 2" x 3/16". The body shall be mounted to the chassis frame rails with four side mounting plates. This shall provide for maximum mounting strength and flexibility **CORROSION PROTECTION** All body components or attachments made from dissimilar metals shall be fastened to the body utilizing a material to prevent metal-to-metal contact preventing dielectric corrosion. All fasteners used in attaching or fastening of aluminum panels shall be installed with stainless steel hardware. Rivets shall not be acceptable. **(No Exceptions)** All fasteners shall be installed in a manner, which shall involve drilling, tapping, and application of non-corrosive grease before the stainless steel bolts are installed. Self-tapping screws or screws without threads shall not be acceptable. **(No Exceptions)** **REAR FENDER / WHEEL WELLS** There shall be enclosed body fender panels around the rear wheels. The body fender panels shall be made from aluminum checker plate. The panels shall be bolted to the body, and ECK shall be used to isolate the panel from the painted body surface. The panel shall be easily removable for service. The fender panel shall have a radius cut to match the rear tire profile. The radius shall have stainless steel fenderettes shall be installed. They shall be bolted to the fender panel with PVC spacers and stainless steel hardware. They shall be easily removable. The fender panel shall have removable liners provided. The black PVC liners shall be easily removable, and shall help keep the wheel well area clean from dirt and other contaminants			

All dissimilar metals shall receive a strip of UHMW isolation tape for corrosion resistance.

FUEL FILL

There shall be a fuel fill supplied and located on the left side of the apparatus in the fender and behind the rear axle.

The fuel fill shall be a square unpainted cast aluminum door with latch. There shall be a fuel fill cap, fuel tank supply hose and vent line.

COMPARTMENT MATTING

There shall be versatile PVC Turtle Tile red in colour matting supplied on the all body compartment floors. The matting shall be interlocking and 1" high to allow for air movement.

REAR BODY SECTION - NATURAL FINISH ALUMINUM

The rear section of the apparatus body shall be finished with 1/8" aluminum plate panels. The panels shall have a natural finish for installation of Chevron. The panels shall be fastened to the rear body framework with stainless steel fasteners. The stainless-steel fasteners are drill tapped. Sheet metal screws or self tapping screws are not acceptable.

BODY COMPARTMENTS

L1 COMPARTMENT
The compartment shall be 67" wide by 62" high by transverse in the upper section and 25.5" deep in the lower section. The compartment door opening is approximately 64" wide by 53" high.

L2 COMPARTMENT
The compartment shall be 55" wide by 39" high by 25.5" deep. The compartment door opening is approximately 54" wide by 29.5" high.

L3 COMPARTMENT
The compartment shall be 44" wide by 62" high by 25.5" deep. The compartment door opening is approximately 39" wide by 53" high.

R1 COMPARTMENT
The compartment shall be 67" wide by 62" high by transverse in the upper section and 25.5" deep in the lower section. The compartment door opening is approximately 64" wide by 53" high.

R2 COMPARTMENT
The compartment shall be 55" wide by 39" high by 25.5" deep. The compartment door opening is approximately 54" wide by 29.5" high.

R3 COMPARTMENT
The compartment shall be 44" wide by 62" high by 25.5" deep. The compartment door opening is approximately 39" wide by 53" high.

B1 COMPARTMENT
The compartment shall be 46" wide by 53" high by 102" deep. The compartment door opening is approximately 44" wide by 39" high.

AMDOR ROLL UP DOORS The compartment doors shall be Amdor Roll-Up type doors. **DOOR LOCATIONS** The compartment door at the L1 location shall be Amdor roll up style. The compartment door at the L2 location shall be Amdor roll up style. The compartment door at the L3 location shall be Amdor roll up style. The compartment door at the R1 location shall be Amdor roll up style. The compartment door at the R2 location shall be Amdor roll up style. The compartment door at the R3 location shall be Amdor roll up style. The compartment door at the B1 location shall be Amdor roll up style. **DOOR STRAPS** All compartment doors that exceed comfortable open reach. **DOOR AJAR** All doors shall be tied to the door ajar warning light in the chassis cab. **UPPER BODY SIDE COMPARTMENT** One (1) upper body compartment shall be provided top of body with dimensions of approximately 175" and over 21" deep. The compartment shall have a lift-up door installed, constructed of 1/8" aluminum tread plate. The door shall have a stainless steel hinge and dual gas openers. The door opening shall be flanged upward 1" to prevent water from running into compartments when the door is closed. Two (2) heavy duty socket and plunger latches shall be installed to hold the door along with a heavy duty chrome grab handle to lift the door. The compartment shall be located on the left side of the body. Note: Upper Body Compartments sizes can be modified to accommodate Light Tower, Generator and Catwalk Requirements **UPPER BODY SIDE COMPARTMENT** One (1) upper body compartment shall be provided top of body with dimensions of approximately 175’" and over 21" deep. The compartment shall have a lift-up door installed, constructed of 1/8" aluminum tread plate. The door shall have a stainless steel hinge and dual gas openers. The door opening shall be flanged upward 1" to prevent water from running into compartments when the door is closed. Two (2) heavy duty socket and plunger latches shall be installed to hold the door along with a heavy duty chrome grab handle to lift the door.			

The compartment shall be located on the right side of the body. Note: Upper Body Compartments sizes can be modified to accommodate Light Tower, Generator and Catwalk Requirements. **UPPER BODY COMPARTMENT EXTERIOR FINISH** The roof compartments shall be constructed from smooth aluminum painted to match the apparatus body. **CATWALKS** Aluminum tread plate catwalks shall be installed on the top of the compartments. **REAR ACCESS LADDER** One (1) Ziamatic (ZICO) 12" Swing Out and Down ladder installed on the rear of the vehicle to provide access to upper cabinets and other equipment to facilitate servicing. If access ladder is not practical for space provided folding steps shall be provided to gain access to upper catwalk. The steps shall meet NFPA 1901 and installed on the left rear of the body. **HANDRAILS** Five (5) 24" Handrails shall be incorporated into the design to ease and facilitate access to upper catwalk area. **REAR INTERMEDIATE STEP** IF required to provide safe access to the upper Catwalk a rear intermediate step shall be provided. The Step shall be the maximum width possible without interfering with the operation of other components. The step shall be constructed of aluminum diamond plate in conformance with NFPA 1901 **COMPARTMENT LIGHTING** All body compartments shall have Amdor Lumabar LED lights activated by an automatic door switch. The LED compartment lights shall be flush mount and provide a consistent 120 degree wide beam pattern. There shall be a minimum of two strip lights installed in each compartment. **RUB RAILS - APPARATUS BODY - NON SLIP** Three inch "C" channel aluminum rub rails shall be bolted into place with nylon spacers on the lower framework below the apparatus body compartments. The rub rail will extend to the outside edges of the apparatus body for protection of the body from impact damage.			

REAR TOW EYE One (1) heavy duty painted tow eye that will fit in both front and rear receivers will be constructed to facilitate towing of the vehicle. **POWER SWITCHING RELAY** A power switching relay shall be provided and installed so that when the generator is activated, the power supplied from the 120 volt shoreline receptacle to the breaker box/power accessory shall be turned off and switched to generator power. The power switching relay shall be rated for 20 amps **RECEPTACLE(S) - INTERIOR** Four (4) 120 volt / 15 amp duplex straight blade receptacle(s) shall be provided and installed on the interior of the fire apparatus body. Location shall be at the Fire Departments discretion. Each receptacle shall have two (2) USB plugs. Receptacles to be located in R2 **BODY SCENE LIGHTING – OPERATOR SIDE** Two (2) Fire Research model SPA900-Q70 surface mount light(s) shall be installed on the left side of the body. **BODY SCENE LIGHTING – OFFICER SIDE** Two (2) Fire Research model SPA900-Q70 surface mount light(s) shall be installed on the right side of the body. **BODY SCENE LIGHTING - REAR** Two (2) Fire Research model SPA900-Q70 surface mount light(s) shall be installed on the rear of the body= Rear scene lights are to be switched to reverse. **GENERATOR** One (1) Onan CMSD 7500 watt, 120/240 volt generator P/N 7.5HDKAL-1 shall be provided. The unit shall be a water cooled diesel engine equipped with high engine temp/low oil pressure shutdown. The unit shall be three wire, single phase 60 Hz. with full rated power available from a single 120 volt outlet, a single 240 volt outlet or a combination of both. The oil drain, oil dipstick, fuel filter and oil filter for the generator must be easily accessible for maintenance. The generator oil drain shall be extended through the compartment flooring and terminate below the chassis frame rails. The generator exhaust shall be routed through the bottom of the compartment or remote location. A diesel fuel pick-up tube shall be provided in the chassis fuel tank along with an electric fuel pump for the generator fuel system. Electric start provisions shall be furnished for the generator from the chassis battery system. Generator pre-heat, start and stop switches shall be provided at the generator control panel. The generator shall have approximate dimensions of 38" L x 21" W x 24" H and a weight of 490 pounds.			

Data Label A permanent data label indicating the following information shall be applied: • Rated voltage • Phase • Frequency • Amperage • Continuous Watts • Peak Watts Generator to partially recessed at the front of the body. Must not extend past top of upper coffins **GENERATOR INSTALLATION** The generator shall be mounted on shock and anti-vibration rubber mountings and be equipped with a removable lifting bracket. A battery powered starter motor shall provide the generator starting system with the 12-volt power supplied from the chassis battery system. The ignition switch shall be located at the generator circuit breaker panel area. The 12-volt supply line from battery shall be adequate size and a circuit breaker installed at the power source. The generator shall be installed in a location that will provide for adequate cooling air in accordance with manufacturer's recommendations. When mounted in an enclosed compartment, it shall be designed to operate with doors "open". The generator muffler and flexible exhaust pipe (if required for remote muffler location) shall be securely supported and shall be shielded or insulated to prevent heating of the body, electrical components or equipment mounting. The exhaust system shall be installed so fumes, vapors, heat and vibrations do not enter the interior compartments. The exhaust outlet piped to the exterior and located so that the exhaust is directed away from operator's position. The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the apparatus or equipment. Where parts of the exhaust system are exposed, so that they are likely to cause injury to operating personnel, suitable protective guards shall be provided. ELECTRICAL SYSTEM INSTALLATION The line voltage electrical system shall comply with applicable NFPA standards and shall comply also to the applicable sections of the National Electric Code #70 standards. Line voltage carrying equipment down stream of the power source shall be "listed" (where available) and installed in accordance with manufacturers instructions. The electrical equipment installed shall be suitable for intended use and type of locations (wet, dry, or underbody and chassis). The grounding and bonding shall comply to applicable sections of NFPA standards. The chassis frame rail, body sheet metal, and cab sheet metal shall be properly bonded per NFPA schematic. The bonding copper conductor shall be rated at 115 % of current rating of power source.			

OVER CURRENT PROTECTION PANEL Manually re-setable overcurrent devices shall be installed to protect the line voltage electrical system components. A main overcurrent protection device shall be provided that is either incorporated in the power source or is connected to the power source by a power supply assembly. The size of the main overcurrent protection device shall not exceed 100 percent of the nameplate amperage rating on the power source specification label or the rating of the next larger available size overcurrent protection device where so recommended by the power source manufacturer. The conductor used in the power supply assembly between the output terminals of the power source and the main overcurrent protection device shall not exceed 144 inches in length. If the power supply cable is longer than 144", a separate master disconnect switch shall be located at the generator. Overcurrent protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with NEC. Each overcurrent protection device shall be marked to identify the function of the circuit it protects. The circuit breaker panel and instruments shall be located so that all circuit breakers are readily visible under normal operating conditions. The panel shall be readily visible and located so that there is unimpeded access to the panel board controls. **LABELING OF EQUIPMENT** All circuit breakers shall be labeled and shall be provided for all interior and exterior outlets indicating output amperage, voltage and phase. **INSTRUCTION LABEL** A label that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence shall be permanently attached to the apparatus at any point where such operations can take place. **CIRCUIT BREAKER BOX** A circuit breaker box for single phase voltage equipment shall be provided capable of holding twelve (12) breakers. **CIRCUIT BREAKER BOX LOCATION** The circuit breaker box shall be installed on the wall towards the front of the apparatus in the left front body compartment. **GENERATOR INSTRUMENTS** Fire Research FROG-D model FDA100 series generator display kit shall be installed to monitor a single phase, 50/60 Hz generator. The kit shall include a display module, voltage transformer, two (2) current transformers, and cables. The display module shall consolidate five (5) generator monitoring instruments into one device. The display case shall be waterproof and have dimensions not to exceed 4 1/4" high by			

4 1/4" wide by 3 1/4" deep. The following continuous displays shall be provided with super bright LED digits more than 1/2" high: Generator frequency in hertz Line 1 current in amperes Line 2 current in amperes Generator voltage in volts. The panel shall be located next to circuit breaker panel. **GENERATOR REMOTE START SWITCH** One (1) remote start/stop switch for the generator shall be located in the cab. A preheat function shall be included for diesel powered generators. An indicator light shall illuminate when the generator is running. The switch shall be centrally located for use by both seating positions. **GENERATOR FUEL SUPPLY** The generator fuel pickup shall be connected to the chassis fuel tank. All necessary piping for connection to the generator shall be included. **GENERATOR MOUNTING LOCATION** The generator shall be installed on top of the body. **GENERATOR PROTECTIVE COVER** One (1) cover constructed from aluminum tread plate shall be installed to protect the generator. The cover shall be installed so that it is easily removed to perform fluid checks and service on the unit. Cooling requirements from the manufacturer shall be designed into the cover to avoid overheating conditions. **LINE VOLTAGE WIRING INSTALLATION** Line voltage wiring in the apparatus shall be with Type SO or approved cable suitable for mobile applications. The flexible electrical cable shall have 600-volt insulation rated for at least 194 degrees F. All junction boxes shall conform to the National Electric Code and shall be accessible for service. Electrical cable shall be supported within 6 inches of any junction box and at a minimum of every 24 inches of run. Supports shall be made of corrosion protected metal that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle. Electrical cable shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring and shall be separated by a minimum of 12 inches from exhaust piping or properly shielded and separated from fuel lines by a minimum of 6 inches distance. All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in			

accordance with the manufacturer's instructions. Wire nuts or insulation displacement and insulation piercing connectors shall not be used. **ELECTRIC CABLE REEL** One (1) Hannay ECR-1600 series electric cable reel with an electric rewind shall be installed on the vehicle. The reel shall be designed for use with 120 volt, three (3) wire cable. The duty rating of the cable reel shall be for continuous usage. The reel shall be installed so that it is easily accessible for cord access and maintenance. A 12-volt motor controlled by a push button switch located in a convenient position and properly labeled shall perform the electric rewind function. The installation of the cable reel shall meet applicable sections of the NFPA standards. Reel to be located Upper L3 Compartment <u>Reel Capacity</u> The reel shall be sized to hold 110 percent of the capacity needed for the specified cable length. The wire size shall be in accordance with the National Electric Code. <u>Labeling</u> An information label shall be installed in a location visible adjacent to any permanently connected reel with the following data: • Voltage • Phase • Current type • Current rating • Total cable length <u>Electrical Supply Wiring To Reel</u> The wiring shall end in a sealed conduit box at the reel with mechanical connectors to allow removal of the reel. Appropriately, sized wire and circuit breakers shall be utilized. The electric cable reel shall be installed in the upper right side body compartment behind the rear wheels. A two hundred foot (200') length of 10/3 black electric cable shall be installed with specified plugs. The cable shall be type SEO-WA with a 20 amp, 120 volt rating. The electric cable shall be configured with a 120-volt 15 amp NEMA 5-15R three-prong straight blade female receptacle. One (1) ball stop shall be attached to the electric cable to prevent total re-wind and to allow the cable to remain at a reachable position. The ball shall positively attach to the cable and be bright orange in color for high visibility.			

JUNCTION BOX One (1) Circle-D model PF51G-1 yellow electrical junction box shall have a 12" pigtail with a NEMA 5-20 straight blade plug for connection to the cord reel. The unit shall have an integral pilot light to indicate electrical current. The unit shall be equipped with four (4) 120 volt 20 amp NEMA 5-20 straight blade receptacles, each with a hinged, weatherproof cover. One (1) aluminum storage bracket designed to hold an electric junction box shall be supplied. The holder shall be mounted in the same compartment as the specified cable reel. One (1) four-sided encompassing stainless steel roller assembly shall be installed at the specified cable reel location. The rollers shall be installed on a slide-out holder so that the electric cable will be past the front face of the compartment when the slide is extended. The slide lock in place in the stored and extended positions. **LIGHT TOWER** A light tower shall be installed over the fire pump enclosure. The light tower footprint shall be perpendicular to the length of the vehicle. **LIGHT TOWER** A Command Light Shadow, part number SL423A-H2 120 Volt AC. **Light Tower Electrical System** The light tower shall be a single-stage device with lighting, capable of 350-degree rotation. The light shall be elevated by an electric linear actuator. The actuator shall adjust the light bank angle from 0 to 110 degrees. The tower base shall have a light that illuminates the envelope of motion during any movement of the light tower mast as required by NFPA 1901. **Light Tower Controls** The light tower shall be controlled with a hand-held 15-foot umbilical line remote control and shall be equipped with a button to activate the "Auto-Park" automatic nesting feature. The controls on the remote box shall be: Two (2) buttons for each light. One (1) button for optional strobe. One (1) button for optional light bank rotation. (not available on this model) One (1) button for elevating/retracting the arm. One (1) button for rotation of the light banks. One (1) button to engage Auto-Park. One (1) indicator light to indicate when light is out of nest position. One (1) indicator light to indicate when light is rotated to proper center position for nesting.			

To be mounted installed in the center walkway. Enough room must be left to allow walking room around light tower to access generator that will be at the front of the body **MOUNTING – LIGHT TOWER CONTROLS** The controls for the light tower shall be mounted in the left front compartment. **BATTERY MASTER SWITCH** The battery master switch shall be supplied by the chassis manufacturer. **LOWER WARNING LIGHTS** Four (4) Federal Signal MPSW9-R MicroPulse Wide Angle LED lights with red LED's and red lenses with black bezels shall be supplied, located as follows: Two (2) One Left Body in rear section of rub rails, One Right Body in rear section of rub rails. Two (2) Front Lower Bumper Grill Two (2) QL64-RR Federal Signal QuadraFlare 6X4 series 12V LED surface-mounted scene lights with QL64MC chrome bezels shall be supplied, located as follows: Two (2) Front Grill Mounted **INTERSECTION CLEARING LIGHTS** Four (4) QL64-RR Federal Signal QuadraFlare 6X4 series 12V LED surface-mounted scene lights with QL64MC chrome bezels shall be supplied, located as follows: Two (2) One Left, One Right Forward of front wheel mounted on Fender. Two (2) One Left One Right Mounted above wheel well body **UPPER WARNING LIGHTS** Six (6) QL64-RR Federal Signal QuadraFlare 6X4 series 12V LED surface-mounted scene lights with QL64MC chrome bezels shall be supplied, located as follows: Two (2) One Front, One Rear near upper corners Right Side of Body. Two (2) One Front, One Rear near upper corners Left Side of Body. Two (2) One Left, One Right near upper corner Rear of Body			

LIGHTBAR One (1) Federal Signal ALGT53J Allegiant 53” light bar shall be installed on the cab roof. The bar shall have White Left Alley, White Right Alley Located in the RL positions. The bar shall also have two White Take Downs in the RW positions. The rear of the bar shall not be provided with lighting. **TRAFFIC ARROW LIGHT** One (1) Federal Signal Latitude SignalMaster LED Model #SL8S-A traffic arrow light shall be installed. The light shall be 32" in length with eight (8) high power amber Solaris LED lamp modules and mounted at rear of the apparatus body. **FEDERAL SIGNAL LIGHT CONTROL HEAD** One (1) Federal Signal PF200S17B 10 Relay Multifunction Siren Light Controller. Unit Must be able to operate from one central control all functions of the emergency lighting system with the exclusion of the light tower. **ELECTRONIC SIREN SPEAKER** One (1) ES100C-DEU Federal Signal 100W composite electronic siren speaker with "Electric-F" chrome grill and bracket (ESFMT-EF) shall be installed. The electronic siren speaker shall be located through the bumper on the left side. **BRAKE LIGHT CLUSTER** Brake/tail, turn and backup lights shall be installed on the apparatus, on the left and right side of the rear wall. The following lights shall be provided: QL644V-LEFT and QL644V-RIGHT, each with the following components: QL64-BTT Federal Signal QuadraFlare red brake/taillights - top position QL64-ARROW Federal Signal QuadraFlare amber turn indicators - second position QL64-BACKUP Federal Signal QuadraFlare white/clear back-up lights - third position QL64-RR Federal Signal QuadraFlare red warning lights with red lens bottom position QL64Z4V Federal Signal cast aluminum 4 light vertical bezel			

GROUND LIGHTS - LED There shall be ten (10) 12" LED ground lights with outward facing angle brackets installed underneath the apparatus. The ground lights shall be activated by a switch installed in the chassis cab. Ground lights that are directly underneath a door opening will turn on automatically when the door is opened. **ENGINE COMPARTMENT LIGHT - LED** One (1) LED light(s) shall be installed in the engine compartment. The light shall come with a stainless steel light bezel. A mercury switch shall activate the light when the hood is opened. **PARKING LIGHT** If wheel well provisions are not required. Two (2) Ziamatic(Zico) ZQL-SS-LED Stainless Steel Parking Lights to be install behind rear axel. **DOOR AJAR SYSTEM** A chassis supplied red flashing warning light for the door ajar system shall be provided in the cab. This light shall be activated when a compartment door on the apparatus body is open. A magnetic sensor shall be installed in all compartments with a roll up door A On / Off depression style switch shall be supplied in all compartments with a pan door. **CLEARANCE AND MARKER LIGHTS - LED** All clearance / marker lights, reflectors shall comply with department of transport motor vehicle safety standards. The clearance / marker lights shall be LED (light emitting diode) type. A set of LED (light emitting diode) mid body turn signals shall be installed to comply with department of transport motor vehicle safety standards for vehicles over 30 feet in length. **MID-BODY TURN SIGNAL** The apparatus shall include mid-body turn signals. The turn signals shall be mounted on the left and right side of the body in the rub rails immediately forward of the rear axel. **LICENSE PLATE ILLUMINATION** A LED light shall illuminate the rear license plate mount. The light shall come with a chrome bezel. **OWNER SUPLIED LIGHT BAR** The Bidder shall install customer supplied 50" Ridgid 885213 RDS Light Bar Front of Body.			

TWO WAY RADIO POWER SUPPLY There shall be three (3) dedicated 12V power supply line(s) coiled underneath the chassis dash for the future install of each customer supplied two way radio. **ANTENNA MOUNT(S)** Four (4) mount(s) for future antenna installation shall be installed on the chassis cab roof. The antenna leads shall be wired to the chassis cab dash area for future installation of a radio. **PROVISION FOR FUTURE DEPARTMENT RADIO INSTALLATION** A location shall be three (3) locations provided for a future installation of a Fire Department supplied radio. The location provided shall receive a radio, model (specify radio model to be installed after delivery) **RADIO FACEPLATE** Each mounting location for a radio installation shall receive a face plate. **COMPARTMENT FINISH** The interior of all compartments of the body shall also be sealed and caulked. A textured finish of light gray urethane paint with a dark gray spatter finish shall be applied to all compartment interiors. **BODY UNDERCOATING** The underside of the body including wheel wells, crossmembers and frame rails shall be sprayed and coated with an undercoating that will act as a corrosion inhibitor. **6" REFLECTIVE BODY PRIMARY STRIPING - "Z" STRIPE** There shall be a six inch wide reflective stripe applied to the left and right sides of the apparatus. The striping on the left and right sides of the apparatus shall incorporate a "Z" style design layout. The reflective stripe shall be a 3M Scotchlite product. **<u>Accent Stripe</u>** There shall be two (2) one inch wide reflective stripe(s) applied to the apparatus along with the primary reflective stripe. The reflective stripe shall be a 3M Scotchlite product. The accent stripe shall be the same color as the main stripe. **UPPER BODY LETTERING** Up to forty two (42) eight inch letters shall be applied to the top of the apparatus body on both sides. The lettering shall consist of either reflective vinyl material or imitation gold vinyl material and shall come with a black non reflective back round shadow.			

CHASSIS CAB DOOR LETTERING Single color lettering with a background outline shading shall be provided on the cab doors as directed by the Fire Department. There shall be a one-inch-wide reflective stripe applied to the front of the apparatus. The reflective stripe shall be a 3M Scotchlite product. There shall be reflective striping applied to the interior chassis cab doors of the apparatus. The reflective stripe shall be a 3M Scotchlite product. **CHEVRON STRIPPING** There shall be 6" chevron stripping decals applied to the rear face of the apparatus including the rear compartment door. The chevron decals shall be made of high visibility Reflexite™ material that is red / yellow in color and shaped to form an "A" style pattern. A minimum of 50% of the rear body shall be covered with Chevron. **FLASHLIGHT(S)** There shall be four (4) Streamlight Fire Vulcan LED flashlight(s) supplied with the apparatus. The Fire Vulcan® LED is a rechargeable, waterproof lantern featuring the latest in power LED technology for extreme brightness. Lithium-Ion nanotechnology batteries make it the lightest weight lantern in its category. The lantern includes two (2) ultra-bright blue tail-light LEDs for rear visibility and a momentary switch providing programmable access to various modes of operation. High-impact ABS thermoplastic housing in high-visibility orange with rubberized cushioned-grip handle. Next generation C4 LED technology, impervious to shock with a 50,000 hour lifetime. Two (2) ultra bright blue LEDs. Up to 80,000 candela peak central intensity. Deep-dish parabolic reflector produces a tight beam with optimum peripheral illumination to aid in navigation. Optimized electronics provide regulated intensity. Two (2) lightweight Lithium-Ion nanotechnology cells. Recharges in 5 hours. Vehicle Mount System Includes quick release buckle strap and 12VDC vehicle-mountable direct-wire charging rack. **MOUNTING ALLOWANCE** An allowance of $5000.00 will be incorporated into the bid to ensure correct equipment mounts or custom equipment mounts can be supplied. Pac Mounting Brackets Preferred.			

CUSTOM WEATHER FRONT A custom weather front shall be constructed that will be designed in such a way not to interfere with the operation of the front emergency lighting. It shall be red in Colour and shall be affixed with turn buckle type fasteners. **OPTION PRICED EQUIPMENT** **AWNING INSTALLATION** The apparatus shall come with a retractable Zip Dee Century Lateral Arm automatic roof mounted awning. The awning shall come with a panel mounted wireless controller as well as a handheld remote control. An anemometer shall be installed to automatically retract the awning in excessive wind speeds A manual override shall be built into the awning in case of an electrical power interruption. **SEON INVIEW 360™ VIDEO SYSTEM KIT** **Product Description:** An FRC, powered by SEON, model SNB100-A00 inView™ 360 Video system kit shall include (4) four cameras, an Electronic Control Unit (ECU), required harnesses and a manual camera switch. The system kit shall provide split video feed with bird's-eye view and individual camera views. It shall be capable of integrating with an existing vehicle system for an automatic camera view, which seamlessly switches from front/left/right/rear views based on turn signal and reverse activation. It shall also feature a switch module that allows the operator to override the default camera view. **Operational Requirements:** The camera (4 x cameras) shall have dimensions of 2.4" L X 2.0" H X 1.7" D. They shall have a 190-degree horizontal lens view angle, a relative aperture (F-stop) 2.0, shall have a resolution of 720 x 480 at 30 FPS (frames per second), shall output a NTSC signal and an input operating voltage 4V – 6V when connected to the ECU (Electronic Control Unit). The ECU (Electronic Control Unit) shall feature NTSC video inputs, and also have NTSC, CVBS (SD) 2-channel view output. The ECU shall have dimensions of 4.54" L x 6.24" H X 1.34" D. The system operating range shall be from 9 to 36 VDC, and shall consume no more than 15 watts of power when all 4 cameras are connected. The systems shall support (8) eight different view modes per (2) two defined configuration groups; Normal (NT) Group shall support 6 different view and Separate Top (ST) View shall support (2) two different views.			

Configure & customize set up shall be supported via monitor and IR remote control Shall support configurable on-screen parking markers Complete package shall weigh less than 8 lbs. **Environmental Requirements:** Operating temperatures shall be between -22°F (−30°C) and 158°F (70°C), and storage temperatures shall be between −40°F (−40°C) and 185°F (85°C), Relative Humidity: 0–85%, non-condensing. The indoor/outdoor camera housing shall be waterproof, rated to IP67. **Systems Hardware:** 1 X ECU (Electronic Control Unit), 1 X ECU Mounting Bracket w/ 4X screw, 1 x Power & Interface Harness, 1 x Reverse Signal Wire, 2 x In-Line Fuses (1x Button Extension Cable & 1 x Driver Button, 1 x Left & 1 x Right Signal Wires, 1 x Video Harness, 2 x Video Output Extension Cables, 4 x Cameras Mounting kit, 4 x Camera Extension Cables, 4 x Drilling Template & 8 x Screw Covers. **Manufacturer's Support:** Manufacturer's Guarantee shall be (2) two years from the manufacture date code under normal use and service. Manufacturer shall provide customer service, pre-sales applications assistance, and after-sales technical assistance. Manufacturer shall provide technical assistance and support by means of a toll-free telephone number (1-800-645-0074) at no extra charge Location of the InView™ 360 Video system kit shall be: To be determined by fire department. **CAB PAINT WHITE** From a body line on the upper front fenders. The fenders cab and hood to be painted white so the vehicle will have white over red appearance. Note colour scheme on page 55. **CAB WRAP WHITE** From a body line on the upper front fenders. The fenders cab and hood to be painted white so the vehicle will have white over red appearance. Note colour scheme on page 55. **THERMAL IMAGING CAMERA** One (1) MSA 6000X Thermal Imaging Camera Unit To Come Complete with Vehicle Charge Base, Lanyard and One (1) Extra Battery			

Final Assembled Apparatus Decaling to be Similar to Photo Below