COUNTY OF NEWBERRY
Purchasing Department, Post Office Box 156, Newberry, SC 29108
Ph: (803) 321-2100 / Fax: (803) 321-2102

INVITATION FOR BIDS

BID NUMBER:2019-2 **DATE**: March 25, 2019

OPENING DATE AND TIME: April 17, 2019 @ 3:00 p.m.

SUBMITTAL ADDRESS: Newberry County Courthouse Annex, 1309 College Street, Newberry (Hand Delivered)
Post Office Box 156, Newberry SC 29108
(US Postal Service Delivered)

PROCUREMENT FOR: 2019 Lake Murray Rescue Apparatus (Truck)

Subject to the conditions, provisions and the enclosed specifications, sealed bids will be received at this office until the stated date and time and then publicly opened. Any bid received after the scheduled deadline, will be immediately disqualified. The County assumes no responsibility for the delivery of bids which are mailed. BID NUMBER MUST BE SHOWN ON THE OUTSIDE OF ENVELOPE.

DIRECT ALL INQUIRIES TO:

Crystal Waldrop, CPPB
Purchasing Director
Post Office Box 156
Newberry SC 29108

NOTICE TO BIDDERS: Each bidder shall fully acquaint himself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this bid. The failure or omission of a bidder to acquaint himself with existing conditions shall in no way relieve him of any obligation with respect to this bid. All amendments to and interpretations of this solicitation shall be in writing and issued by the Purchasing Director of the County. Newberry County shall not be legally bound by an amendment or interpretation that is not in writing.

COUNTY OF NEWBERRY
Purchasing Office, 1309 College Street, Post Office Box 156, Newberry S.C. 29108
Ph: (803) 321-2100 / Fax: (803) 321-2102

BIDDERS SCHEDULE

BID NUMBER: 2019-2 **DATE:** March 25, 2019

OPENING DATE AND TIME: April 17, 2019 @ 3:00 p.m.

DEADLINE FOR SUBMITTING QUESTIONS: April 10, 2019 by 5:00 p.m.
Via email to: cwaldrop@newberrycounty.net

OPENING LOCATION: Newberry County Courthouse Annex, Conference Room
1309 College Street
Newberry, SC 29108

PROCUREMENT: **2019 Lake Murray Rescue Apparatus**

Base Bid **$**_____

***Bids shall be good for forty-five (45) days from the date of submittal**

VENDOR: _____ **SIGNATURE:** _____

Name of Authorized Contact: _____

Email Address: _____

Address: _____

Phone & Fax: _____

FEIN: _____

Contractor's SC License #: _____

There will NOT be a pre-bid meeting for this solicitation.

This equipment is being purchased on a bond through South State Bank, PO Box 100113, Columbia, SC 29202 and shall be listed as the lien holder on the title and the Certificate of Origin.

INSTRUCTIONS TO BIDDERS

1.Only one copy of bid is required unless otherwise specified.

2. Bids, amendments thereto or withdrawal request must be received by the time advertised for bid openings to be timely filed. It is the vendor's sole responsibility to insure these documents are received by the purchasing office at the time indicated in the bid document.

PLEASE NOTE THE VENDOR IS ULTIMATELY RESPONSIBLE FOR VERIFYING THEY HAVE RECEIVED ANY/ALL ADDENDA PRIOR TO THE BID OPENING.

3. When specifications or descriptive papers are submitted with the bid, enter bidder's name thereon.

4. Submit your signed bid on the bidder's schedule provided. Show bid number on envelope as instructed and the bid name or description. Newberry County accepts no responsibility for unmarked or improperly marked envelopes.

5. Bidders must clearly mark as "Confidential" each part of their bid which they consider to be proprietary information that could be exempt from disclosure under Section 30-4-40 Code of Laws of South Carolina, 1976, as amended, (also known as the Freedom of Information Act). The County reserves the right to determine whether this information should be exempt from disclosure and no legal action may be brought against the County or its agents for its determination in this regard.

6. By submission of a bid, you are guaranteeing that all goods and services meet the requirements of the solicitation during the contract period.

7. Tie bids will be resolved in accordance with the provisions of the Newberry County Purchasing Ordinance.

8. A copy of the bidder's W-9 shall be included in the submission.

GENERAL PROVISIONS

1. The County of Newberry reserves the right to reject any and all bids, to cancel a solicitation, and to waive any technicality if deemed to be in the best interest of the County.

2. Unit prices will govern over extended prices unless otherwise stated in this bid invitation.

3. **PROHIBITION OF GRATUITIES:** South Carolina law and the Newberry County Purchasing Ordinance prohibit the giving of anything of value in return for favors or other preferential treatment in the purchasing process. Bidders should govern themselves accordingly.

4. **BIDDERS QUALIFICATION:** Bidders must, upon request of the county, furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. The County reserves the right to make the final determination as to the bidder's ability to provide the products or services requested herein. Bidder determined to be irresponsible bidders are not allowed to bid to provide the County goods or services.

5. **BIDDERS RESPONSIBILITY:** Each bidder shall fully acquaint himself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this bid. It is expected that this will sometimes require on-site observation. The failure or omission of a bidder to acquaint himself with existing conditions shall in no way relieve him of any obligation with respect to this bid or to the contract.

6. **AWARD CRITERIA:** The contract shall be awarded to the lowest responsible and responsive bidder(s) whose bid meets the requirements and criteria set forth in the Invitation for Bid. Award may be made to one or a multiple of bidders, whichever deems to be in the best interest of the County, or unless otherwise stated on the bidder's schedule.

7. **WAIVER:** The County reserves the right to waive any Instruction to Bidders, General or Special Provisions, General or Special Conditions, or specifications deviation if deemed to be in the best interest of the county.

8. **COMPETITION:** This solicitation is intended to promote competition. If any language, specifications, terms and conditions, or any combination thereof restricts or limits the requirements in this solicitation to a single source, it shall be the responsibility of the interested vendor to notify the Purchasing Director on in writing within five (5) days prior to the opening date. The solicitation may or may not be changed but a review of such notification will be made prior to the award.

9. **REJECTION:** Ambiguous bids which are uncertain as to terms, delivery, quantity, or compliance with specifications may be rejected or otherwise disregarded if such action is in the best interest of the County.

10. **RIGHT TO PROTEST**: Any prospective bidder, offeror, or contractor, who is aggrieved in connection with the solicitation of a contract shall protest in writing to the Purchasing Director within ten (10) calendar days of the date of issuance of the Invitation to Bid or other solicitation documents, whichever is applicable, or any amendment thereto, if the amendment is at issue. Any actual bidder, offeror, or contractor, who is aggrieved in connection with the intended award or award of a contract, shall protest in writing to the purchasing director within ten (10) calendar days of the notification of intent to award or statement of award.

11. **PROTEST PROCEDURE:** A protest shall be in writing, submitted to the purchasing director, and shall set forth the specific grounds of the protest with enough particularity to give notice to the issues to be decided.

GENERAL CONDITIONS

1. **DEFAULT:** In case of default by the contractor, the County reserves the right to purchase any or all items in default in the open market, charging the contractor with any excessive costs. Should such charge be assessed, no subsequent bids of the defaulting contractor will be considered until the assessed charge has been satisfied.

2. **NON-APPROPRIATION:** Any contract entered into by the County resulting from this bid invitation shall be subject to cancellation without damages or further obligation when funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period or appropriated year.

3. **HOLD HARMLESS AND INSURANCE**: The successful bidder shall indemnify and hold harmless the County of Newberry and all County officers, agents and employees against all suits or claims for personal injury or property damage resulting from, or arising from, the successful bidder's performance of the contract, as well as against any suits or claims of any character brought against the County or its agents or employees by reason of any claim of infringement of any patent, trade mark, trade dress, or copyright, including reimbursement to the County for all attorney's fees and court costs incurred by the County in defending itself or its agents or employees against any such claim or suit. **In addition, the successful bidder will maintain a public liability policy with minimum limits of $500,000 per occurrence, or $1,000,000 single limit, for damages arising from acts which occur during the contract period, with the County of Newberry named as an additional insured on the policy; the successful bidder shall also maintain workers compensation and vehicle liability insurance in the amounts required by statutory law.** Proof of such coverage will be provided upon demand or as otherwise provided in the bid specifications.

4. **CONTRACT ADMINISTRATION:** Questions or problems arising after award of this contract shall be directed to the Purchasing Director, P.O. Box 156, Newberry, SC 29108, or by calling 803-321-2100.

5. **FORCE MAJEURE:** The Contractor shall not be liable for any excess costs if the failure to perform the contract arises out of causes beyond the control and without fault or negligence of the contractor. Such causes may include, but are not restricted to acts of God or of a public enemy, acts of Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the contractor. If the failure to perform is caused by default of a subcontractor, and if such default arises out of causes beyond the control of both the contractor and subcontractor and without excess costs for failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the contractor to meet the required delivery schedule.

6. **PUBLIC RELEASE:** Contractor agrees not to refer to award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the User.

7. **QUALITY OF PRODUCT:** Unless otherwise indicated in this bid it is understood and agreed that any items offered or shipped on this bid shall be new, in first class condition, and without defect that all containers shall be new and suitable for storage or shipment, and that prices include standard commercial packaging and shipping to the specified destination in Newberry County. No demonstration models shall be sold as new, without prior written permission of the County.

8. **S.C. LAW CLAUSE:** Upon award of a contract under this bid, the person, partnership, association or corporation to whom the award is made must comply with the laws of South Carolina which require such person or entity to be authorized and/or licensed to do business with this State. Notwithstanding the fact that applicable statutes may exempt or exclude the successful bidder from requirements that it be authorized and/or licensed to do business in this State, by submission of this signed bid, the bidder agrees to subject himself to the jurisdiction and process of the courts of the State of South Carolina as to all matters and disputes arising or to arise under the contract and the performance thereof, including any questions as to the liability for taxes, licenses, or fees levied by the State.

9. **ASSIGNMENT:** No contract or its Provisions may be assigned, sublet, or transferred without the written consent of the Purchasing Director.

10. **AFFIRMATIVE ACTION:** The successful bidder will take affirmative action in complying with all Federal and State requirements concerning fair employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap.

11. **DELIVERIES:** All deliveries shall be FOB Destination. It is agreed by the parties hereto that delivery by the contractor to the common carrier does not constitute delivery to the County. Any claim for loss or damage shall be between the contractor and the carrier.

12. **APPROPRIATE S.C. SALES TAXES, FEES AND PERMITS** shall be included in the Vendor's base bid. The South Carolina tax cap for vehicles is $500.00 and shall be reflected in the final invoice.

13. **PAYMENT TERMS:** Payment will be made when all work is completed and accepted by Newberry County as meeting the specifications here within. **This equipment is being purchased on a bond through South State Bank, PO Box 100113, Columbia, SC 29202 and shall be listed as the lien holder on the title.**

14. **BID BOND:** For each bid in excess of $25,000.00 each bidder will submit with their bid a bond in the amount of 5% of the total price of the bid submitted. The bid bonds will be returned to the unsuccessful bidders once the county accepts the lowest most responsive bid. If the most responsive bidder fails to perform the responsibility of the bid within 10 days of the award, then the bid bond will be forfeited to the county as liquidated damages and the next lowest bidder will be awarded the bid. Bid bonds may be in the form of a surety, a cashier's check or an unconditional letter of credit in favor of Newberry County issued by a commercial bank in South Carolina.

15. **PERFORMANCE AND PAYMENT BONDS:** The chosen vendor will be required to submit to the County both a performance bond and payment bond in the amount of 100% of the contract price before commencing with the work. **Both bonds will be issued from a surety company with an "A" minimum rating of performance as stated in the most current publication of Best Key Rating Guide, Property Liability.**

16. **Compliance with The South Carolina Illegal Immigration Act**: By submitting an offer, Bidder certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration act, 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to Bidder and any subcontractor or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by Bidder and any subcontractors or sub-subcontractors. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both". Bidder agrees to include in any contracts with its sub-contractor's language requiring the subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-sub-contractor's language requiring the sub-subcontract to comply with the applicable requirements of Title 8, Chapter 14.

GENERAL INFORMATION

The apparatus being proposed will be constructed to endure the continuous use and severe situations that are encountered during emergency firefighting and rescue services. The apparatus will be carefully designed and constructed with due consideration to the type of load and how it will be distributed on the apparatus. The apparatus will be of the latest type.

This proposal details the design criteria for the following:

- Cab and chassis components
- Fire pump and related components (if applicable)
- Water tank (if applicable)
- Fire body
- Electrical components
- Paint
- Equipment

All the items listed in this proposal specification will conform to the *National Fire Protection Association (NFPA) 1901 Standard 2016 Edition).*

GENERAL INFORMATION-INTENT OF SPECIFICATIONS

It is the intent of these specifications to secure apparatus constructed to withstand the severe and continuous use encountered during emergency firefighting services. The apparatus must be of the latest type, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained.

These specifications detail the requirements for general design criteria of cab and chassis components, fire pump and related components, water tank, fire body, electrical components, painting, and equipment. In evaluating the bid proposals to determine which proposal is the most advantageous, these major items shall be considered.

Apparatus and equipment must meet the specific requirements and intent of the requirements as specified herein. All items of these specifications shall conform to the character of the proposed apparatus and the purpose for which it is intended. Criteria as specified by the National Fire Protection Association Pamphlet No. 1901, latest edition, entitled "Suggested Specifications for Motor Fire Apparatus", as approved by the American Insurance Association and International Association of Fire Chiefs, are hereby adopted and made a part of these specifications the same as if they were written out in full, insofar as they apply and are not specifically modified in the following detailed specifications. Each bidder shall provide only that equipment as required in the following specifications.

The fire apparatus and equipment to be furnished in meeting these specifications must be the products of an established, reputable fire apparatus and/or equipment manufacturer. Each bidder shall furnish satisfactory evidence of the manufacturer's ability to construct, supply service parts and technical assistance for the apparatus specified. Each bidder must state the location of the factory and location for post delivery service.

SUBSTITUTIONS FOR ANY AND ALL REFERENCE TO BRAND NAMES THROUGHOUT THE DOCUMENT WILL BE ACCPETED, PROVIDED THEY ARE EQUAL OR BETTER.

FIRE APPARATUS COMPLETION DOCUMENTATION

The apparatus builder will provide, at the time of apparatus delivery, at least one (1) copy of the following documents.

The apparatus manufacturer's record of apparatus construction (build) details, including the information listed below:

- Apparatus Owner's name and address
- Apparatus manufacturer, model and serial number
- Apparatus Chassis make, model and serial number
- Front tire size, and total rated capacity (in pounds)
- Rear tire size, and total rated capacity (in pounds)
- Apparatus Chassis weight distribution in pounds, with water and equipment mounted, front and rear
- Apparatus Engine make, model, serial number, rated horse power, rated speed and governed speed.
- Apparatus electrical system - Voltage and Alternator output (in amps)
- Battery make, model and total capacity (in cold crank amps)
- Transmission make, model and serial number: If equipped, chassis transmission PTO(s) make, model and gear ratio
- Paint manufacturer and paint number(s)

The apparatus manufacturer will include certification of "slip resistance" for all stepping, standing and walking surfaces.

If the apparatus has a "fixed line" voltage power source, there will be documentation of the fixed power source test certification.

The apparatus manufacturer will provide documentation from a certified weight scale. This documentation will show actual loading on the front axle, rear axle(s) and overall vehicle weight. This weight will include the weight of the "full" apparatus water tank. This documentation will be provided with the completed apparatus build to determine compliance with NFPA 1901 latest addition.

Electrical performance testing documentation and a written load analysis report will be provided with the completed apparatus.

APPARATUS FMVSS CERTIFICATION

The apparatus chassis will be certified by the chassis manufacturer as conforming to all applicable Federal Motor Vehicle Safety Standards in effect at the date of contract on the apparatus. The apparatus chassis will have a FMVSS certification label attached on the apparatus by the final manufacturer.

LOCATION OF MANUFACTURING FACILITY

The apparatus builder will state the location of the manufacture in their bid.

STEPPING, STANDING & WALKING SURFACES

All standing, stepping and walking surfaces on the apparatus body will meet NFPA 1901 (2016 edition) "anti-slip" standards. All aluminum tread plate that is used for standing, stepping and walking surfaces will be "NO-SLIP TYPE." This material will be a minimum of 3/16" (0.1875") in thickness. The manufacture will supply proof of compliance with this requirement. All of the vertical surfaces on the apparatus body, which incorporate aluminum tread plate material, will utilize the same material pattern to provide a consistent overall appearance on the apparatus.

INTENT OF SPECIFICATIONS

It is the intent of these specifications to provide a completed apparatus equipped as herein after specified. These specifications cover the general requirements as to type of construction and tests to which the apparatus must conform. Minor details of construction and material not specified are left to the discretion of the contractor who shall be solely responsible for the design and construction of the apparatus. National Fire Protection Association pamphlet (unless otherwise specified in these specifications) shall prevail.

SERVICE CENTER AND CAPABILITIES

In order to ensure that the apparatus will be properly maintained while under warranty, and parts and service will be available after the warranty period expires, the bidder must maintain a qualified service center.

This service center must be at a fixed location which meets all applicable local zoning rules and regulations as a place of business engaging in the exclusive service of emergency vehicles.

The building must either be owned by the bidding company or secured by a long-term lease (defined as in excess of three years) and be of sufficient size to house a minimum of three (3) full size fire apparatus.

The facility must provide a secure storage area to protect apparatus stored after normal business hours. Facility must be heated, have telephone and internet service and be manned a minimum of 40 hours per week.

In addition, the bidder must provide evidence of garage liability insurance of sufficient dollar amount, to protect the fire department should damage occur to apparatus while in the care of the service center.

Contract or third-party owned service centers will not be considered because of lack of enforceability of proper warranty care.

The service center must be operational and manned a minimum of 40 hours between Monday and Friday of each week, holidays notwithstanding. Normal business operation hours must at least be between 8:00 AM and 5:00 PM, local time.

GENERAL CONSTRUCTION

The overall apparatus, including assemblies, subassemblies, component parts, etc. will be designed and built with special consideration to the type and distribution of the load to be sustained and to the overall character of the type of service to which the apparatus is exposed to once it is completed and placed into active service. Each and every part of the apparatus will be designed with safety in mind. The level of safety will be equal to or greater than that which is considered "standard" and acceptable for this type and class of equipment in the firefighting service. All parts of the apparatus will be constructed to be strong enough to withstand the general service under full load. The apparatus will be designed so that parts are accessible by personnel for maintenance such as lubrication, inspection(s), adjustment and repair work.

The completed apparatus will be designed and constructed, and the fire equipment mounted with consideration to load distribution between the front and rear axles, so that all equipment including ground ladders, water tank (full), loose equipment, and firefighting personnel will be carried without damaging or overloading the apparatus.

SINGLE-LINE RESPONSIBILITY

The builder's engineers, designs, manufactures, builds and paints our own fire apparatus body, rescue apparatus body and electrical systems. All work is done in a owned and operated manufacturing facilities by their direct employees. This capability provides consistent design and manufacturing procedures that will reduce warranty issues and provide ease in parts replacement.

PRODUCT LIABILITY INSURANCE

The builder shall show proof of at least $5,000,000 in product liability insurance. A sample copy of the insurance statement is included with the bid package.

PAINT PERFORMANCE CERTIFICATION

The proposed apparatus meets or exceeds the required Commercial Vehicle Paint Performance Standards.

SERVICE CENTER AND PARTS AVAILABILITY

The apparatus builder shall state its service locations in South Carolina and the size of the buildings as well as the value of their inventory.

PRICES AND PAYMENTS

The apparatus bid price will be F.O.B. Destination, based on a delivered and accepted apparatus by the Fire Department.

The total price on the proposal sheet will include all items listed in the apparatus specifications.

The computed pricing list the South Carolina Infrastructure Maintenance Fee (IMF) as a line before the total price.

APPARATUS DELIVERY TIME

The bidder shall state the time it will take to build the truck after the receipt of the chassis.

GENERAL CONSTRUCTION

The apparatus shall be designed and equipped with consideration to distribution of load between the front and rear axles, so that all specified equipment, including a filled water tank, a full complement of personnel and fire hose will be carried without injury to the apparatus. Weight and balance distribution shall be in accordance with the recommendations of the National Fire Protection Association.

BID BOND

A Bid Bond in the amount of 5% of the total bid amount shall be furnished with your bid. All bonds shall be provided by the manufacturer of the apparatus. The bond shall be countersigned by the appropriate Surety agent, licensed to conduct business in the State of South Carolina.

PERFORMANCE BOND

Upon receipt of purchase order or signed contract for the described apparatus, a Performance Bond equal to one hundred percent (100%) of the total contract amount will be provided within ten (10) working days. The Performance Bond shall insure the prompt and complete performance of any contract entered as a result of the awarding of this bid.

The performance bond will be issued by a provider licensed to conduct business in the State of South Carolina.

MATERIAL AND WORKMANSHIP

All equipment provided will be guaranteed by the manufacture to be new and of current manufacture to meet all requirements of the purchaser's specifications.

All workmanship will be of highest quality meeting accepted standards of the apparatus industry and will be accomplished in a professional manner so as to insure a functional apparatus with a pleasing, aesthetic appearance.

APPROVAL DRAWING

Detailed apparatus drawings will be provided for approval before the construction process begins. A copy of these drawings will also be provided to the County. Upon approval, the finalized apparatus drawing will become a part of the total contract. The drawings will show, but is not limited to, such items as the apparatus chassis make and model, major components, location of lighting, sirens, all compartment locations and dimensions, special suctions, discharges, etc. The apparatus drawings will be a visual interpretation of the apparatus as it is to be supplied.

Three-dimensional CAD drawings of subframe and manufactured componentry shall be made available.

APPARATUS DELIVERY AND PAYMENT

It will be the responsibility of the dealer to deliver the truck to the customers location where it will be inspected and paid for by the County. The County will need at least two weeks lead time for delivery.

INSTRUCTION MANUALS / DRAWINGS

The manufacture will supply upon delivery, two (2) copies of operation and service manual(s) for the completed apparatus as delivered and accepted by the customer.

These manuals will contain the items below:

- Specifications, descriptions and ratings of chassis, and pump (if provided).
- Lubrication (fluids) charts
- Operational instructions for the apparatus chassis and any major components such as a pump or auxiliary system.
- Instructions regarding the frequency and maintenance procedures recommended for the apparatus.
- Replacement parts information.

SAFETY AND OPERATIONAL INSTRUCTION VIDEO

Included with the apparatus and furnished at delivery shall be a safety and operational instruction video (DVD) that shall address all key safety and operational instructions that shall allow a safe, functional and correct operation of the apparatus. Video shall address chassis load, performance and operational parameters of this specific apparatus. Video shall also address safety, pump, maintenance and loading/offloading procedures.

PARTS MANUAL

Two (2) parts manuals with complete wiring diagrams will be provided with each apparatus. Unless otherwise specified, the manuals will be in paper form.

CAB SAFETY SIGNS

The apparatus will be equipped with the following safety signs inside the cab:

- A label displaying the maximum number of occupants the vehicle is designed to carry will be visible to the driver.
- An "Occupants shall be seated and belted when apparatus is in motion" sign will be visible from each apparatus seat.
- A "Do Not Move Apparatus When Light Is On" sign will be adjacent to the warning light indicating a hazard if the apparatus is moved.
- A label displaying the overall height, length, and GVWR of the apparatus will be visible to the driver.

HELMET WARNING LABEL

The apparatus cab will feature a label that will be visible to everyone in the apparatus cab; "Warning" that "Helmets are not to be warn in the cab and will be safely secured."

DO NOT RIDE LABEL

A label will be located on the apparatus at the rear step areas, and at any cross-walkway areas, if applicable. The label(s) will warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

HELMET STORAGE

To meet NFPA 1901-2009 section 14.1.8.4.1, the helmet for each riding position will be stored in a specified body compartment as per the department's request.

FUEL PLATE

The apparatus will feature an engraved plate near the apparatus fuel fill area to designate the chassis fuel type.

APPARATUS CHASSIS DATA LABELS

The following information will be on the labels affixed to the apparatus:

Fluid Data:

- Engine Oil
- Engine Coolant
- Chassis Transmission Fluid
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid (if applicable)
- Drive Axle(s) Lubrication Fluid
- Air Conditioning Refrigerant
- Air Conditioning Lubrication Oil
- Power Steering Fluid
- Air Compressor System Lubricant (if applicable)

•Generator System Lubricant (if applicable)
•Front Tire Cold Pressure
•Rear Time Cold Pressure
•Maximum Tire Speed Rating

Chassis Data:

•Chassis Manufacturer
•Production Number
•Year Build
•Month Manufactured
•Vehicle Identification Number (V.I.N.)

Manufacturers weight certification:

•Gross Vehicle (or Combination) Weight Rating (GVWR or GCWR)
•Gross Axle Weight Rating, Front
•Gross Axle Weight Rating, Rear

APPARATUS DIMENSIONS & G.V.W.R.

The dimensions of the completed apparatus will not exceed the maximum acceptable dimensions below:

PROPOSED DIMENSIONS:

•OVERALL LENGTH: approximately 338-340""
•OVERALL WIDTH: 100"
•OVERALL HEIGHT: 124-126"
•WHEELBASE: determined by engineering review 203 -205"

The axle and total weight ratings of the completed apparatus will not be less than the minimum acceptable weight ratings listed below:

•MINIMUM FRONT G.A.W.R: 12,000 lbs.
•MINIMUM REAR G.A.W.R.: 27,000 lbs.
•MINIMUM TOTAL G.V.W.R: 39,000 lbs.

DETAILED DEMENSIONS SHALL BE PROVIDED

The builder will include the dimensions, front G.A.W.R., rear G.A.W.R., and total G.A.W.R. of the apparatus proposed in these specs as well as on the detailed drawing.

WEIGHT ANALYSIS

The apparatus builder will supply a weight distribution of the apparatus fully loaded, loose equipment weights based on the NFPA weight requirements based on the cubic feet of compartment space. That weight allowance will be in accordance with NFPA 1901 (latest addition) requirements, and an equivalent personnel load of up to two hundred fifty (250) pounds per seating position on the completed apparatus.

ROLLOVER STABILITY

The apparatus will meet the criteria defined in 4.13.1 for rollover stability as defined in the most current edition of the NFPA Standard for Automotive Fire Apparatus.

VEHICLE STABILITY COMPLIANT - CALCULATION METHOD

Per NFPA 1901-2009 edition paragraph 4.13.1 the vehicle shall be reviewed to verify that the Vertical center of gravity shall be no higher than 80% of the rear axle track width without equipment at the time of manufacture.

CHASSIS SPECIFICATION

Data Code	Description	Weight Front	Weight Rear
Data Version			
DRL-030	SPECPRO21 DATA RELEASE VER 030		
Vehicle Configuration			
001-172	M2 106 CONVENTIONAL CHASSIS	5,759	3,503
004-220	2020 MODEL YEAR SPECIFIED		
002-004	SET BACK AXLE - TRUCK		
019-002	STRAIGHT TRUCK PROVISION		
003-001	LH PRIMARY STEERING LOCATION		
General Service			
AA1-002	TRUCK CONFIGURATION		
AA6-001	DOMICILED, USA 50 STATES (INCLUDING CALIFORNIA AND CARB OPT-IN STATES)		
A85-020	FIRE SERVICE		
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT		
AA4-002	LIQUID BULK COMMODITY		
AA5-002	TERRAIN/DUTY: The majority of time, the vehicle will be on paved roads; however, the County has numerous dirt or gravel roads that it will need to be able to access		
AB1-008	MAXIMUM 8% EXPECTED GRADE		
AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT – The majority of time, the vehicle will be on paved roads; however, the County has numerous dirt or gravel roads that it will need to be able to access		
995-091	MEDIUM TRUCK WARRANTY		
A66-99D	EXPECTED FRONT AXLE(S) LOAD: 12000.0 lbs		
A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD: 27000.0 lbs		
A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY: 39000.0 lbs		
Truck Service			

Data Code	Description	Weight Front	Weight Rear
AA3-027	FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP		
A88-99D	EXPECTED TRUCK BODY LENGTH: 0.0 ft		
AF3-2F0	KOVATCH MOBILE EQUIPMENT COMPANY		
AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES: 32.0 in		
Engine			
101-23A	CUM L9 330EV HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM	640	30
Electronic Parameters			
79A-068	68 MPH ROAD SPEED LIMIT		
79B-000	CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT		
79M-001	PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED		
79P-002	PTO RPM WITH CRUISE SET SWITCH - 700 RPM		
79Q-003	PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM		
79S-001	PTO MODE CANCEL VEHICLE SPEED - 5 MPH		
79U-007	PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND		
80G-002	PTO MINIMUM RPM - 700		
80J-002	REGEN INHIBIT SPEED THRESHOLD - 5 MPH		
Engine Equipment			
99C-017	2016 ONBOARD DIAGNOSTICS/2010 EPA/CARB/FINAL GHG17 CONFIGURATION		
99D-012	2008 CARB EMISSION CERTIFICATION - EXEMPTED VEHICLE; NO CLEAN IDLE LABEL REQUIRED		
13E-001	STANDARD OIL PAN		
105-001	ENGINE MOUNTED OIL CHECK AND FILL		
133-004	ONE PIECE VALVE COVER		
014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER		
124-1CE	LN 12V 320 AMP 4962PA PAD MOUNT ALTERNATOR	10	
292-208	(2) DTNA GENUINE, FLOODED STARTING, MIN 2250CCA, 390RC, THREADED STUD BATTERIES		
290-017	BATTERY BOX FRAME MOUNTED		
281-001	STANDARD BATTERY JUMPERS		
282-001	SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB		
291-017	WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN		
289-001	NON-POLISHED BATTERY BOX COVER		
87P-998	NO CAB AUXILIARY POWER WIRING		
293-058	POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT	8	

Data Code	Description	Weight Front	Weight Rear
107-032	CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE		
108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR		
131-013	AIR COMPRESSOR DISCHARGE LINE		
152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING		
128-1AR	CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY TURBO WITH ON/OFF DASH SWITCH, ACTIVATES STOP LAMPS	20	
016-1DC	RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES	10	5
28F-007	ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH		
239-001	STANDARD EXHAUST SYSTEM LENGTH		
237-022	RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90 DEGREES	20	20
23U-001	6 GALLON DIESEL EXHAUST FLUID TANK		
30N-003	100 PERCENT DIESEL EXHAUST FLUID FILL		
43X-002	LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION		
23Y-001	STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING		
43Y-001	STANDARD DIESEL EXHAUST FLUID TANK CAP		
273-018	HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE		
276-001	AUTOMATIC FAN CONTROL WITHOUT DASH SWITCH, NON-ENGINE MOUNTED		
110-003	CUMMINS SPIN ON FUEL FILTER		
118-008	COMBINATION FULL FLOW/BYPASS OIL FILTER		
266-101	900 SQUARE INCH ALUMINUM RADIATOR	-35	
103-036	ANTIFREEZE TO -34F, ETHYLENE GLYCOL PRE-CHARGED SCA HEAVY DUTY COOLANT		
171-007	GATES BLUE STRIPE COOLANT HOSES		
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES		
270-016	RADIATOR DRAIN VALVE		
168-002	LOWER RADIATOR GUARD		
134-001	ALUMINUM FLYWHEEL HOUSING		
132-004	ELECTRIC GRID AIR INTAKE WARMER		
155-058	DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH		
Transmission			
342-1KD	ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION	200	60
Transmission Equipment			

Data Code	Description	Weight Front	Weight Rear
343-331	ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS		
84B-003	ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES		
84C-022	PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 5, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84D-022	SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 5, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY		
84E-000	PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84F-000	SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84G-000	PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84H-000	SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84J-000	ENGINE BRAKE RANGE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84K-000	ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE		
84L-000	LOAD BASED SHIFT SCHEDULE AND VEHICLE ACCELERATION CONTROL RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED VOCATIONAL USAGE		
84N-000	NEUTRAL AT STOP - DISABLED, FUELSENSE - DISABLED		
84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES		
353-022	VEHICLE INTERFACE WIRING CONNECTOR WITHOUT BLUNT CUTS, AT BACK OF CAB		
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED		
362-1Y0	(2) CUSTOMER INSTALLED CHELSEA 277 SERIES PTO'S		
363-011	PTO MOUNTING, LH AND RH SIDES OF MAIN TRANSMISSION		
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN		
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED		
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013		
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK		

Data Code	Description	Weight Front	Weight Rear
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK		
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)		
Front Axle and Equipment			
400-1A6	DETROIT DA-F-12.0-3 12,000# FF1 71.5 KPI/3.74 DROP SINGLE FRONT AXLE		
402-050	MERITOR 16.5X5 Q+ CAST SPIDER HEAVY DUTY CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES		
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING		
419-023	CONMET CAST IRON FRONT BRAKE DRUMS		
409-006	FRONT OIL SEALS		
408-001	VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL		
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES		
405-031	HALDEX AUTOMATIC FRONT SLACK ADJUSTERS WITH STAINLESS STEEL CLEVIS PINS		
536-050	TRW THP-60 POWER STEERING		
539-003	POWER STEERING PUMP		
534-015	2 QUARTS SEE THROUGH POWER STEERING RESERVOIR		
40T-001	ORGANIC SAE 80/90 FRONT AXLE LUBE		
Front Suspension			
620-010	14,600# TAPERLEAF FRONT SUSPENSION	170	
619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION		
410-001	FRONT SHOCK ABSORBERS		
Rear Axle and Equipment			
420-062	RS-26-185 27,000# T-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE		255
421-489	4.89 REAR AXLE RATIO		
424-001	IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING		
386-073	MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES	20	20
423-010	MERITOR 16.5X7 P CAM REAR BRAKES, DOUBLE ANCHOR, CAST SHOES		20
433-025	FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING		
434-011	BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)		
451-030	WEBB HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS		80
440-006	REAR OIL SEALS		
426-1B2	BENDIX EVERSURE LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS		
428-003	HALDEX AUTOMATIC REAR SLACK ADJUSTERS		

Data Code	Description	Weight Front	Weight Rear
41T-001	ORGANIC SAE 80/90 REAR AXLE LUBE		
Rear Suspension			
622-1DD	27,000# FLAT LEAF SPRING REAR SUSPENSION WITH RADIUS ROD FOR FIRE/EMERGENCY SERVICE		120
621-001	SPRING SUSPENSION - NO AXLE SPACERS		
431-001	STANDARD AXLE SEATS IN AXLE CLAMP GROUP		
623-005	FORE/AFT CONTROL RODS		
Brake System			
018-002	AIR BRAKE PACKAGE		
490-101	WABCO 4S/4M ABS WITH TRACTION CONTROL, WITH ATC OFF-ROAD SWITCH		
871-001	REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES		
904-001	FIBER BRAID PARKING BRAKE HOSE		
412-001	STANDARD BRAKE SYSTEM VALVES		
46D-001	STANDARD AIR SYSTEM PRESSURE PROTECTION AND 85 PSI PRESSURE PROTECTION FOR AIR HORN(S)		
413-002	STD U.S. FRONT BRAKE VALVE		
432-003	RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE		
480-088	WABCO SYSTEM SAVER HP WITH INTEGRAL AIR GOVERNOR AND HEATER		
479-012	AIR DRYER MOUNTED UNDER HOOD		
460-058	STEEL AIR TANKS MOUNTED AFT INSIDE AND/OR BELOW FRAME JUST FORWARD OF REAR SUSPENSION		
607-001	CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD		
477-001	PULL CABLE ON WET TANK, PETCOCK DRAIN VALVES ON ALL OTHER AIR TANKS		
Trailer Connections			
335-004	UPGRADED CHASSIS MULTIPLEXING UNIT		
32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT		
Wheelbase & Frame			
545-565	5650MM 203-205 WHEELBASE		
546-102	7/16X3-9/16X11-1/8 INCH STEEL FRAME (11.11MMX282.6MM/0.437X11.13 INCH) 120KSI	370	290
547-001	1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT	170	410
552-046	2050MM (81 INCH) REAR FRAME OVERHANG		
55W-008	FRAME OVERHANG RANGE: 81 INCHES TO 90 INCHES	-50	210
AC8-99D	CALCULATED BACK OF CAB TO REAR SUSP C/L (CA): 156.85 in		
AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA): 153.85 in		

Data Code	Description	Weight Front	Weight Rear
AE4-99D	CALCULATED FRAME LENGTH - OVERALL: 342.08		
AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE: 156.45 in		
FSS-0LH	CALCULATED FRAME SPACE LH SIDE: 122.13 in		
FSS-0RH	CALCULATED FRAME SPACE RH SIDE: 227.18 in		
553-001	SQUARE END OF FRAME		
550-001	FRONT CLOSING CROSSMEMBER		
559-003	LIGHTWEIGHT HEAVY DUTY ALUMINUM ENGINE CROSSMEMBER	-12	
561-001	STANDARD CROSSMEMBER BACK OF TRANSMISSION		
562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)		
572-001	STANDARD REARMOST CROSSMEMBER		
565-001	STANDARD SUSPENSION CROSSMEMBER		
Chassis Equipment			
558 -CR	**CHROME PLATE FRONT BUMPER WILL BE SUPPLIED,**	-60	
558-001	FRONT TOW HOOKS - FRAME MOUNTED	15	
586-024	FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS		
551-007	GRADE 8 THREADED HEX HEADED FRAME FASTENERS		
605-017	LEVEL FRAME RAILS (+1%, -0%) WHEN CHASSIS IS LOADED TO FRONT AND REAR SUSPENSION RATINGS		
601-012	CUSTOMER REQUESTED "DRIVELINE AND CROSSMEMBER ONLY" LAYOUT 2D DXF/PDF FORMAT ELECTRONICALLY TRANSMITTED		
Fuel Tanks			
204-215	50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK - LH	20	
218-005	RECTANGULAR FUEL TANK(S)		
215-005	PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS		
212-007	FUEL TANK(S) FORWARD		
664-001	PLAIN STEP FINISH		
205-001	FUEL TANK CAP(S)		
122-1H3	DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR	-5	
216-020	EQUIFLO INBOARD FUEL SYSTEM		
11F-998	NO NATURAL GAS VEHICLE FUEL TANK VENT LINE/STACK		
202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE		
221-008	FUEL COOLER MOUNTED LEFT HAND IN RAIL	10	
Tires			

Data Code	Description	Weight Front	Weight Rear
093-994	MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES	50	
094-1RM	MICHELIN X WORKS Z 12R22.5 16 PLY RADIAL REAR TIRES		152
Hubs			
418-060	CONMET PRESET PLUS PREMIUM IRON FRONT HUBS		
450-060	CONMET PRESET PLUS PREMIUM IRON REAR HUBS		
Wheels			
502-1EF	ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT 5.79 INSET ALUMINUM DISC FRONT WHEELS	-50	
505-1EF	ALCOA LVL ONE 88367X 22.5X8.25 10-HUB PILOT ALUMINUM DISC REAR WHEELS		-100
496-011	FRONT WHEEL MOUNTING NUTS		
497-011	REAR WHEEL MOUNTING NUTS		
Cab Exterior			
829-071	106 INCH BBC FLAT ROOF ALUMINUM CONVENTIONAL CAB		
650-008	AIR CAB MOUNTING		
705-012	CAB ROOF REINFORCEMENTS FOR ROOF MOUNTED COMPONENTS	2	
678-018	LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT		
646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE		
65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE		
644-004	FIBERGLASS HOOD		
727-036	VALVE AND PLUMBING FOR CUSTOMER FURNISHED AIR HORN, PIPING CAPPED AT FIREWALL		
726-002	DUAL ELECTRIC HORNS		
657-1CV	DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME WITH (4) KEYS		
575-001	REAR LICENSE PLATE MOUNT END OF FRAME		
312-038	INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL		
302-001	(5) AMBER MARKER LIGHTS		
311-001	DAYTIME RUNNING LIGHTS		
294-046	OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING WITH SEPARATE STOP/TURN WIRES TO 4 FEET BEYOND END OF FRAME		-5
300-015	STANDARD FRONT TURN SIGNAL LAMPS		
744-1BC	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE		
797-001	DOOR MOUNTED MIRRORS		
796-001	102 INCH EQUIPMENT WIDTH		
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS		

Data Code	Description	Weight Front	Weight Rear
74A-001	RH DOWN VIEW MIRROR		
729-001	STANDARD SIDE/REAR REFLECTORS		
677-016	DUAL LEVEL CAB ENTRY STEPS ON BOTH SIDES		
768-043	DELETE		
661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS		
654-003	MANUAL DOOR WINDOW REGULATORS		
663-013	TINTED WINDSHIELD		
659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED		
Cab Interior			
707-1AK	OPAL GRAY VINYL INTERIOR		
706-013	MOLDED PLASTIC DOOR PANEL		
708-013	MOLDED PLASTIC DOOR PANEL		
772-006	BLACK MATS WITH SINGLE INSULATION		
691-008	FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING		
694-010	IN DASH STORAGE BIN		
742-007	(2) CUP HOLDERS LH AND RH DASH		
680-006	GRAY/CHARCOAL FLAT DASH		
700-002	HEATER, DEFROSTER AND AIR CONDITIONER		
701-001	STANDARD HVAC DUCTING		
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH		
170-045	STANDARD HEATER PLUMBING WITH BALL SHUTOFF VALVES AT SUPPLY LINES ONLY		
130-033	DENSO HEAVY DUTY AIR CONDITIONER COMPRESSOR		
702-002	BINARY CONTROL, R-134A		
739-034	PREMIUM INSULATION		
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES		
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM		
324-011	DOME DOOR ACTIVATED LH AND RH, DUAL READING LIGHTS, FORWARD CAB ROOF		
655-001	CAB DOOR LATCHES WITH MANUAL DOOR LOCKS		
284-023	(1) 12 VOLT POWER SUPPLY IN DASH		
756-1G7	H.O. BOSTROM SIERRA AIR-30 HIGH BACK AIR SUSPENSION DRIVER SEAT WITH ADJUSTABLE RECLINE, FIXED LUMBAR AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR	20	
760-1G7	H.O. BOSTROM SIERRA AIR-30 HIGH BACK AIR SUSPENSION PASSENGER SEAT WITH ADJUSTABLE RECLINE, FIXED LUMBAR AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR	40	15
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS		

Data Code	Description	Weight Front	Weight Rear
758-081	GRAY AND BLACK DURAWEAR FABRIC DRIVER SEAT COVER, SEAT BOLSTER AND INSERT		
761-081	GRAY AND BLACK DURAWEAR FABRIC PASSENGER SEAT COVER, SEAT BOLSTER AND INSERT		
763-105	NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS		
532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN	10	
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL		
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS		
Instruments & Controls			
732-004	GRAY DRIVER INSTRUMENT PANEL		
734-004	GRAY CENTER INSTRUMENT PANEL		
87L-001	ENGINE REMOTE INTERFACE WITH PARK BRAKE INTERLOCK		
870-001	BLACK GAUGE BEZELS		
486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM		
840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES		
198-006	ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS, WITH WARNING LIGHT IN DASH		
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL		
156-020	IGNITION SWITCH WITH NON REMOVABLE KEY		
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED		
160-038	HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH		
844-001	2 INCH ELECTRIC FUEL GAUGE		
148-073	ENGINE REMOTE INTERFACE FOR REMOTE THROTTLE		
163-004	ENGINE REMOTE INTERFACE CONNECTOR IN ENGINE COMPARTMENT		
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE		
864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE		
830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY		
372-051	CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS		
49B-004	ELECTRONIC STABILITY CONTROL		
852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE		
679-001	OVERHEAD INSTRUMENT PANEL		
786-119	NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY		

Data Code	Description	Weight Front	Weight Rear
746-115	AM/FM/WB WORLD TUNER RADIO WITH BLUETOOTH AND USB AND AUXILIARY INPUTS, J1939	10	
747-001	DASH MOUNTED RADIO		
750-002	(2) RADIO SPEAKERS IN CAB		
753-001	AM/FM ANTENNA MOUNTED ON FORWARD LH ROOF		
748-001	POWER AND GROUND STUDS IN/UNDER DASH		
810-027	ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER		
817-001	STANDARD VEHICLE SPEED SENSOR		
812-001	ELECTRONIC 3000 RPM TACHOMETER		
162-002	IGNITION SWITCH CONTROLLED ENGINE STOP		
81Y-001	PRE-TRIP LAMP INSPECTION, ALL OUTPUTS FLASH, WITH SMART SWITCH		
264-025	(1) RH FOOT SWITCH WITH DASH SWITCH FOR HORN BUTTON TO CONTROL AIR HORN, DEFAULT TO ELECTRIC <85 PSI		
836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY		
660-008	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY		
304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH		
882-018	ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR		
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE		
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS		
Design			
065-000	PAINT: ONE SOLID COLOR		
Color			
980-CR	**CAB COLOR METALIC BLUE**		
986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT		
963-003	STANDARD E COAT/UNDERCOATING		
Certification / Compliance			
996-001	U.S. FMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS		

FUEL TANK TREAD PLATE

The driver's side step type fuel tank will be overlaid with aluminum tread plate (polished). This will include the top, front and both ends of the fuel tank. Step areas will be provided to create easier access to the apparatus cab. The step areas will be fabricated from tread plate that is "No-Slip" rated.

TREADPLATE OFFICER SIDE STEP COVER

The officer side step area shall be covered in bright finish aluminum treadplate to cover and protect the exhaust emissions equipment from damage in the normal operation of the apparatus.

CAB CONSOLE

A center console will be supplied and installed between the driver and officer's seating positions.

The forward area of the apparatus console will have a mounting surface for the emergency lighting switches and electronic siren controls. This area will be located within easy reach of the apparatus driver and officer. The console area will feature a storage area for items such as map books or notebooks at the rear of the console.

The console will be brushed aluminum finish.

REFLECTIVE MATERIAL ON CAB DOOR

Each interior cab door panel will be equipped with reflective Scotchlite material that will cover at least 96 in^2. The material will be applied to an aluminum plate that will be fastened to the door panel.

WHEEL TRIM KITS

Wheel trim kits consisting of chrome baby moon hubcaps and chrome lug nut covers will be installed on the front and rear axles of the single rear axle chassis.

TIRE PRESSURE MONITOR DEVICE

Each tire will be equipped with an LED tire alert pressure management system (Vecsafe or equal) that will monitor tire pressure. A chrome plated brass sensor will be provided on the valve stem of each tire.

The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 20 and 120 psi. The sensor will activate an integral battery-operated LED when the pressure of that tire drops 8 or more psi.

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

FRONT TOW HOOKS FURNISHED BY CHASSIS MFG

Apparatus will have tow hooks as furnished by chassis manufacturer.

FRONT BUMPER

The Freightliner chrome plated bumper will be supplied

WINCH RECEIVER POINT- FRONT OF CHASSIS

A receiver point will be provided below the front bumper for a portable winch. The receiver point will be a 2" x 2" x 1/4" seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to the chassis frame rails. A 12-v electrical connection with a quick disconnect compatible with the port-able winch will be provided adjacent to the receiver point. A plastic end cap will be provided for the quick disconnect.

12V ELECTRICAL INTERFACE

VEHICLE DATA RECORDER AND OCCUPANCY MINDER

The commercial chassis manufacturer will install the Vehicle Data Recorder and Seatbelt Occupancy minder.

MULTIPLEX ELECTRICAL SYSTEM

A Weldon style V-MUX Multiplex System will be provided. The V-MUX will provide an on-board diagnostics and status, increase reliability and durability, minimize downtime, supply reverse polarity protection and dramatically simplify troubleshooting and repairs for the vehicle. It will provide short and open circuit detection and notification, on board service information and reduce splices by 80-90%. Each node will enable discrete load shedding, sequencing, diagnostics and PWM control. All V-MUX hardware will be rated for -40° to +85° C.

A series of Multiplexing Input/Output Modules will be installed. The Input/Output modules will permit the multiplexing system to reduce the amount of wiring and components used as compared to non-multiplexed apparatus. These modules will vary in I/O configuration, be waterproof allowing installation outside of enclosed areas and will possess individual output internal circuit protection. The modules will also have three status indicators visible from a service persons vantage point that will indicate the status of the module. In the event a load requires more than 7.5 AMPS of operating current, the module will activate a simple relay circuit integral to any of the 3 pillbox assemblies installed in the cab.

V-MUX integration shall be available for:

- System Voltage Meter
- Ammeter
- Emergency Flasher
- Headlamp Flasher
- Load Management
- Load Sequencer
- Back-Up Monitor
- Relays
- Circuit Breakers
- Door "Open" System
- Interlock Modules
- Engine Monitor Devices
- Separate Interlock Control
- Special Waterproof Enclosures

The multi-plexed electrical system will consist of one (1) Weldon #6060-0000-00 high content "Hercules" node, and one (1) Weldon #6010-0000-00 V-Mux mini node. Additional nodes can be added if more inputs are required.

VISTA SCREEN

The Akron / Weldon Vista IV #6241-0110-00 touch screen display node with external buttons will include the following features:

- Outside temperature display.
- A real time clock with display.
- Four (4) programmable video inputs.
- A useable temperature ranges from -40 degrees to 185 degrees F.
- Eight (8) factory programmed virtual switches
- Seven (7) preset navigation switches
- Selectable font sizes, types and colors for optimum user efficiency.
- Selectable color buttons and screen backgrounds.

All wiring to be appropriate gauge cross link with 311-degree F. insulation. All wires in the chassis will be circuit numbered and function coded, in addition the SAE wiring will be color coded. The wiring will be protected by 275-degree F. minimum high temperature flame retardant loom as required.

12 VOLT ELECTRICAL SYSTEM TESTING

The apparatus low voltage electrical system will be tested and certified by the manufacturer. The certification will be provided with the apparatus. All tests will be performed with air temperature between 0°F and 100°F.

The following three (3) tests will be performed in order. Before each test, the batteries will be fully charged.

TEST #1-RESERVE CAPACITY TEST

The engine will 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 will be shut off and the minimum continuous electrical load will be activated for 10 minutes. All electrical loads will be turned off prior to attempting to restart the engine. The battery system will then be capable of restarting the engine. Failure to restart the engine will be considered a test failure.

TEST #2-ALTERNATOR PERFORMANCE TEST AT IDLE

The minimum continuous electrical load will be activated with the engine running at idle speed. The engine temperature will be stabilized at normal operating temperature. The battery system will be tested to detect the presence of battery discharge current. The detection of battery discharge current will be considered a test failure.

TEST #3-ALTERNATOR PERFORMANCE TEST AT FULL LOAD

The total continuous electrical load will be activated with the engine running up to the engine manufacturers governed speed. The test duration will be a minimum of 2 hours. Activation of the load management system will be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of less than 11.7 volts DC for a 12-volt system, for more than 120 seconds, will be considered a test failure.

LOW VOLTAGE ALARM TEST

Following completion of the preceding tests, the engine will be shut off. The total continuous electrical load will be activated and will continue to be applied until the excessive battery discharge alarm is activated.

The battery voltage will be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts will be considered a test failure. The battery system will then be able to restart the engine.

At time of delivery, documentation will be provided with the following information:

- Documentation of the electrical system performance test
- A written load analysis of the following;
- Nameplate rating of the alternator
- Alternator rating at idle while meeting the minimum continuous electrical load
- Each component load comprising the minimum continuous electrical load.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

BACK-UP CAMERA

An Akron / Weldon V-Mux compatible #6507-0000-00 color rear camera kit will be furnished and installed. The color camera will be installed on the rear of the apparatus in a black mounting bracket. The rear camera will be connected to the apparatus V-Mux display panel. The back-up camera will switch the V-Mux display to camera view when the apparatus transmission is placed in reverse.

ANTENNA INSTALLATION

One (1) antenna mounting base(s) model #MATM with minimum of 25 linear feet of coaxial cable will be provided and installed on the cab roof. The attached antenna wire(s) will be run to the console or other area as may be designated by the fire department.

The Fire Department is responsible to have the correct antenna rod installed once the apparatus is delivered to the customer.

AUTOMATIC HIGH IDLE / MULTIPLEX

The multiplex system will be programmed to incorporate apparatus engine to go to an automatic pre-set high idle should the system determine a low voltage situation while not in pump or road gear.

SWITCH PANEL - CONSOLE BACK LIGHTED

Installed in the console of the cab, convenient to the officer and driver will be the multiplex electrical system control screen.

The layout of the console will include siren controls, or traffic advisor controls; if specified, and have space for customer supplied radio controls.

SHORELINE POWER INLET PLATE

A shoreline power receptacle information plate will be permanently affixed at or near the shoreline power inlet. The plate will indicate the following;

- Type of Line Voltage
- Current Rating in Amps Power Inlet Type (DC or AC).

BATTERY CHARGER

A ProMariner, ProNautic 1240P, fully automatic battery charger will be provided for maintaining the vehicle battery system. The charger will feature a four (4) stage automatic charging system that will extend the battery life and usage with multi-stage charging featuring a fast charge and a float/maintenance mode. A LED status center, built into the charger, will provide at-a-glance status of fast charge, conditioning, ready (float/maintenance) and battery type selection. Output current will be 40 amperes @ 12-volt DC.

AIR COMPRESSOR SYSTEM

A Kussmaul 091-9HP air compressor will maintain the air pressure in the chassis air brake system while the vehicle is not in use. The air compressor will have a rated input at 120 volts AC @ 3.5 amps and an output of 1.4 CFM with a 125-psi max output.

BATTERY LEVEL INDICATOR

A Kussmaul #091-94-12 battery level indicator with single bar graph display will be provided and installed at the specified location. The battery level indicator will provide visual indication of the battery level with red lights on the bar graph display.

SHORE LINE – SUPER AUTO EJECTION UNIT

A Kussmaul Super Auto Eject Model #091-55-20-120-BW, 20-amp 120-volt shore power assembly, cover, solenoid input wire, power cord, and plug will be installed on the apparatus in the location specified by the customer. The 12-volt solenoid will 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 will sequence energizing of an Auto Eject, eliminating terminal arching when connecting and disconnecting power cord.

The unit will 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) will be installed.

The assembly will have the following dimensions: 6.17" high x 4.08" wide x 2.8" deep with 4 lb. weight.

Location of Kussmaul Super Auto Eject Port will be at the driver's side step overlay below the cab.

The cover plate for the Kussmaul auto eject plug will be red in color.

ADDITIONAL KUSSMAUL AUTO EJECT W/ DEDICATED CIRCUIT 20 AMP

Installed on the apparatus in a location as designated by the customer, will be a Kussmaul Super Auto Eject Model #091-55-20-120-BW, 20 amp 120-volt shore power assembly, cover, solenoid input wire, power cord, and plug. 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. Color of cover shall be:

The auto eject will be wired directly to a dedicated outlet located on the forward wall of compartment L1 for the specific purpose of providing outlet for Hurst Battery powered rescue tool charger(s).

The outlet will have a spring-loaded cover and will be wired through the apparatus shoreline and have an outdoor type 20-amp circuit breaker box and breaker installed as directed by the fire department. The dedicated circuit breaker box will be located adjacent to the main breaker box and will have a permanent label installed reading "**120VAC Auxiliary Accessory Charger Circuit**"

The auto eject will also have a permanent identification plate installed adjacent to the assembly labeled " "**120VAC Auxiliary Accessory Charger Circuit**"

KUSSMAUL AUTO DRAIN ACHP 120 VAC

A Kussmaul # 091-9B-1-AD Auto Drain ACHP will be installed to protect the Auto Pump from built up moisture.

KUSSMAUL AIR COMPRESSOR TIMER

A Kussmaul # 091-150-115 A.C. Auto Pump timer will be installed to protect the Auto Pump from high temperatures and wear rates if a large air leak occurs on the air system. The timer will limit the duty cycle of the 120-volt pump to a one (1) hour running time followed by a half hour cool down period.

ACCESSORY CIRCUIT - 12 VOLT - LOCATED IN CAB

One (1) dedicated circuit; 12-volt, 40 Amp, power and ground on a 3/8" stud and fused at the battery will be provided in the apparatus cab at the specified location determined by the fire department. The circuit will be for future installation of radios or other 12-volt accessories

ACCESSORY CIRCUIT LOCATION: **In the center console**

COMPARTMENT/CAB DOOR OPEN INDICATOR - MULTIPLEX SYSTEM SCREEN

Incorporated into the multiplex screen will be a customized door open indicator which will indicate using vehicle outline diagram which compartment, or cab door is open. The system will also have capability to add features such as light tower not stowed, hydraulic ladder rack not stowed, deck gun not stowed.

The system is designed so that when the apparatus is placed in gear an audible and visual warning will be indicated on the screen.

DOOR OPEN INDICATOR LIGHT

A Truck-Lite Model 30286R -30 Series flashing red LED light will be furnished and installed in the cab, in a prominent location that is visible to both driver and officer of the apparatus to signal when an unsafe condition is present such as an open cab door or body compartment door, extended ladder rack, extended side dumps, extended light tower or any other device which is opened, extended or deployed which may cause damage to the apparatus if it is moved.

This light will be activated through the parking brake switch to signal when the parking brake is released. This light will be labeled ***"DO NOT MOVE TRUCK"***.

The light is 2.00" in diameter and approximately 1.4" high.

BLUE SEA FUSE BLOCK - 12 CIRCUIT IN CONSOLE

A Blue Sea 5026B, 12 circuit fuse blocks, will be installed behind the officer's seat. This block has a maximum amperage of 100 Amps per block and 30 Amps per circuit.

POWER PORT - 12 VOLT

One (1) 12-volt power port accessory outlet(s) will be supplied and installed in the cab of the apparatus for the fire department's accessory devices. The port(s) will be located in the cab as directed for devices such as cellular phones.

POWER PORT - 12 VOLT - USB

One (1) 12-volt USB power port accessory outlet(s) will be supplied and installed in the cab of the apparatus for the fire department's accessory devices. The port(s) will be located in the cab as directed for devices such as cellular phones, computers and PDAs.

DOT MARKER LIGHTS & REFLECTORS

Apparatus cab marker lights and signaling devices will be as provided on the apparatus commercial chassis cab from the original chassis manufacturer. FMVSS reflectors will be also provided as required.

FEDERAL MOTOR VEHICLE SAFETY STANDARDS MARKER LIGHTS - SIDE OF BODY

FMVSS approved red LED marker lights with integral reflectors will be furnished and installed at the lower side rear, one (1) on each side.

FMVSS approved yellow side LED marker and turn lights will be furnished and installed on the apparatus lower side, forward of rear axle, one (1) on each side of the apparatus. (For apparatus thirty (30') long or longer.

The FMVSS marker lights are designed with reflective backing and lens as to function as reflectors when the lights are not activated.

FEDERAL MOTOR VEHICLE MARKER LIGHTS - REAR OF BODY

A FMVSS approved red LED clearance light will furnished and installed on the apparatus rear upper, one (1) on each side at the outermost practical location.

A FMVSS approved LED 3-lamp identification bar will be furnished and installed on the apparatus rear center. The lights will be RED in color.

The FMVSS marker lights are designed with reflective backing and lens as to function as reflectors when the lights are not activated.

LICENSE PLATE HOLDER, CAST PRODUCTS, SURFACE MOUNT

One Cast Products License Plate holder, Model # LP0013-1, with WL0501 clear LED light, surface mount, will be installed above the turn signal assembly on the rear of the driver side body.

The light will activate with the parking light switch.

STOP, TAIL, TURN, & BACK-UP LIGHTING

Two (2) Whelen M6 series, 4-5/16" x 6-3/4", Red LED combination stop, and tail lights will be furnished and installed, one (1) on each side at the rear of the apparatus body.

Two (2) Whelen M6 series, 4-5/16" x 6-3/4", Amber LED turn signal lights (with arrow) will be furnished and installed, one (1) on each side of the apparatus body at the rear. The lights will be installed one (1) on each side, on a vertical plane with the stop / tail lights.

Two (2) Whelen M6 series, 4-5/16" x 6-3/4", White LED back-up lights will be furnished and installed, one (1) on each side, on a vertical plane with the stop / tail / turn signals. These will activate when the apparatus transmission is placed in reverse gear.

Two (2) Whelen M6FCV4 mounting flanges, will be provided and installed one (1) on each side. The lights listed above will be mounted in one common cast aluminum mounting flange, Whelen Part CAST4V. The fourth (4th) opening will be for the lower rear warning lights.

The lights will be mounted in order, from top to bottom as described above.

BODY STEP/ COFFIN COMPARTMENT WALKWAY LIGHTING

TecNiq LED, polished stainless steel, horizontal surface mounted body step lights will be furnished and installed to activate with marker light activation. Step lighting will be located to properly illuminate all body access steps and walkway areas and will include a mounting gasket to provide a watertight seal.

The lights will illuminate the tailboard step, and if applicable, landing area and coffin compartment walkway and rear access ladder rungs.

These lights will be turned on when the park brake control is activated.

BODY STEP LIGHTING

TecNiq LED, polished stainless steel, horizontal surface mounted body step lights will be furnished and installed to activate with marker light activation. Step lighting will be located to properly illuminate all body access steps and walkway areas and will include a mounting gasket to provide a watertight seal.

The lights will illuminate the side running board, the tailboard step, and if applicable, top mounted pump panel walkway and intermediate rear step.

DUNNAGE AREA LIGHTING

The dunnage area located in the forward area of the roof (forward of the coffin compartment area) will be illuminated with two (2) LumaBar High Output H2O 12" LED lights, part # AY-LB-12HW012, located one (1) each side of the dunnage area. The lights will be supplied and installed to provide adequate illumination of this area. The lights will be activated when the parking brake is activated, and the headlamps are activated.

The light will be protected by a full length extruded aluminum bracket.

ROOF MOUNT - BROW LIGHT - 150W DC LED - ABOVE WINDSHIELD

One (1) Akron SceneStar ELSS-SLDC-BL 12 volt LED apparatus roof mount flood light will be furnished and installed the mounting bracket will attach to the lamp head and be machined to conform to roof radius of the apparatus.

The lamp head will have a single row of LED modules and will draw 12 amps while generating 14,000 lumens.

The lamp head and brackets will be powder coated white.

The Akron brow mounted flood light(s) will be located above the windshield in the center of the apparatus cab.

BROW LIGHTING - SWITCH - IN CAB

A switch will be furnished and installed in the cab Vista screen to turn the brow light(s) on and off.

AKRON SCENE STAR TRIPOD FLOOD LIGHTS, 120VAC

Two (2) Akron SceneStar LED scene lights (# ELSS-SLAC) mounted on Tripod Poles will be furnished and installed on the front of the body, one (1) each side.

The Akron SceneStar provides 20,000 lumens and are supplied by 120VAC. The tripod poles will be installed on the apparatus using Akron Extenda-Lite brackets # POD-BRACKET-LONG which provides a 3" offset from the apparatus body using a 3-piece mounting system.

AKRON SCENESTAR 150W RECESSED LED FLOODLIGHTS - DRIVER SIDE

Two (2) *Akron SceneStar*, 150-watt, 12 volt led flood lights will be installed one rearward and one forward on the driver side of the apparatus body, each using an Akron recessed bracket.

Each lamp head will draw 12 amps and generate 14,000 lumens. Each light will be switched at the light head.

AKRON SCENESTAR 150W RECESSED LED FLOODLIGHTS - OFFICER SIDE

Two (2) *Akron SceneStar*, 150-watt, 12 volt led flood lights will be installed one rearward and one forward on the officer side of the apparatus body, each using an Akron recessed bracket.

Each lamp head will draw 12 amps and generate 14,000 lumens. Each light will be switched at the light head.

AKRON SCENESTAR 150W RECESSED LED FLOODLIGHTS - REAR OF BODY

Two (2) *Akron SceneStar*, 150-watt, 12 volt led flood lights will be installed on the rear face of the apparatus body, one (1) on each side, each using an Akron recessed bracket.

Each lamp head will draw 12 amps and generate 14,000 lumens. Each light will be switched at the light head.

REAR FLOOD LIGHT ACTIVATION - ADDITIONAL

In addition to the cab mounted switch for the rear flood lights, the rear flood lighting will illuminate when the apparatus transmission is placed in reverse gear and the apparatus is operating as an emergency vehicle (Primary Warning Light switch on).

REAR OF BODY FLOOD / SPOT LIGHT SWITCH

A switch will be provided in the apparatus cab warning light switch console to turn the rear of body lights on and off.

OFFICER SIDE OF BODY FLOOD / SPOT LIGHT SWITCH

A switch will be provided in the apparatus cab warning light switch console to turn the officer side of body lights on and off.

DRIVER SIDE OF BODY FLOOD / SPOT LIGHT SWITCH

A switch will be provided in the apparatus cab warning light switch console to turn the driver side of body lights on and off.

WILL-BURT LIGHT TOWER

Night Scan Chief NS 2.3-500-4 Will-Burt Night Scan XL 200 12/ VDC

Model Number 720700135

A Will-Burt Night Scan Chief Series light tower shall be provided. The horizontal surface mounted tower shall be raised electrically and pneumatically.

Mounting provisions shall be provided with the assembly. The installation of unit shall be as follows:

1. Light tower installation location: FORWARD PORTION OF THE WALKWAY BETWEEN COFFIN BOXES; Light tower will be positioned with the light heads toward the driver side, base on the officer side.

2. **Floodlight and tower control location:**

Design and Construction

The tower shall be a series of graduated extruded aluminum tubes that nest one inside another. The tower shall have an extended height of approximately 7.5 ft. / 2.3 m above the mounting location and a stowed height of approximately 9.4375" / 24 cm above the mounting surface. The tower shall be approximately 39.0625" / 99.2 cm wide by 53.75" / 136.5 cm in length. The tower shall be designed to sustain the intended top load with a 125 percent safety factor and shall exceed NFPA requirements of a minimum 50 mph (80 kph) wind when in a fully raised and unguyed position. The tower shall be of a compact design with a total weight of approximately 131 lbs. / 59.4 kg. The light tower shall not exceed 150 lbs. / 68 kg.

The tower tubular sections shall be constructed of high strength, heat-treated 6061-T6 aluminum tubes and collars. Each tube shall be protected by low friction synthetic collars for smooth operation and long life. Bumpers shall be designed to reduce shock on extension and retraction. All exterior surfaces shall be anodized for long life and fasteners shall be stainless steel for corrosion resistance.

Nesting System

The tower shall have an "auto-stow" function. A double click of the mast down button will stow, retract, and shut power off to the unit. An integrated saddle assembly with synthetic, non-marring rests shall be provided for the tower and flood light assembly in the nested position.

Floodlight Rotation and Tilt Operation

The tower shall be equipped with a Will Burt Model RCP (remote control positioner) to control the rotation and direction of the light. The remote-control positioner unit shall be equipped with two (2) gear motors; one for rotation and one for the floodlight bank. The positioner shall also rotate the floodlight assembly from zero to 355 degrees and tilt the floodlight assembly from 0 to 337 degrees.

Hand-held Wired Remote Control

A safety yellow in color for high visibility, hand held remote-control pendant, connected to a quick-disconnect, 25 ft. (7.62 meter) coiled cord shall be provided to control the tower. All functions of the tower shall be accessible through this remote-control including elevating with "auto-up" ability, lowering with "auto-stow" ability, rotation and tilting of the floodlight assembly and floodlight switching. An auxiliary power button shall also be included to control optional equipment such as strobe lights or a camera that is mounted to the mast. An emergency stop button shall be integrated into the hand-held control for added safety or shall be located on the junction box. Each button of the controller shall have a corresponding LED light that provides operational feedback. An LED display that includes alphanumeric feedback shall be located in the center of the controller. This display shall provide operational feedback and error codes if they occur.

Pneumatic Controls

The pneumatic controls to raise and lower the tower shall include an air regulator and solenoid valves. Lights will be operational within approximately 8 seconds from elevation initiation. The tower shall be able to be fully elevated in approximately 50 seconds. In the event of malfunction of the elevating system while the tower is in operation or being deployed, a method of limiting the rate of descent shall be provided to prevent injury to personnel or damage to the equipment.

Two allen keys as well as directions are included under the cover to fold the mast into the saddle if manual stowage of mast is required.

The air supply for pneumatic operation of the tower shall be from an integral compressor with air regulator.

Electrical Installation

The wiring harness for the floodlights, accessories, and remote-control positioner shall be internally routed through telescoping aluminum tubing with a highly flexible coil cord.

Installer supplied 12 or 24-volt electrical wiring shall be provided with electrical connections at the tower assembly in conjunction with appropriate electrical power for the floodlights. The installer as required by manufacturer's installation guidelines shall provide appropriate wiring from the circuit breaker panel for connection to the tower. The electric power to the tower and light units shall automatically disconnect whenever the tower is in the nested position.

The tower operation area shall be illuminated automatically by a look up light whenever the tower is in operation. Any upward movement of the tower from the nested position shall energize a red warning light in the cab and a secondary light located at the tower control area. In addition, the installer shall provide parking brake interlocks and other equipment as required by applicable NFPA standards.

Floodlight System

Four (4) Night Scan XL 200 lamps shall be provided. The 125 watts 12/24 VDC light head shall incorporate a combination of 8 spot lenses and 8 flood lenses installed in an IP-69k rated die-cast white powder coated aluminum housing. The configuration shall consist of a total of 16 white LEDs with a clear optic reflector assembly, and a clear non-optic polycarbonate lens. The Night Scan XL 200 shall have 20,000 usable lumens for a total of 80,000 lumens. The lens/reflector assembly shall utilize a liquid injection molded silicon gasket to be resistant to water, moisture, dust, and other environmental conditions. The hard-coated lens shall provide extended life/luster protection against UV and chemical stresses. The light shall be vibration resistant. The Night Scan XL 200 shall have a warranty of 10 years. The fixture shall measure H=4.4" / 11 cm, W=13" / 33 cm, D=3.6" / 9.1
Cm

**** The flood lights will be wired to run off the 110v generator through a 5400702 power supply.**

Warranty

The Wilburt Light tower assembly shall carry a two (2) year parts and labor warranty. Exact provisions of such warranty shall be provided with the proposal and at time of delivery of product.

Labeling and NFPA Compliance

Essential operating instructions and warning labels shall be provided in compliance to applicable OSHA, SAE, and NFPA standards. Appropriate labels on the "hazards of electrocution" associated with the operation of a light tower shall be installed in the appropriate areas.

A label shall be provided at the operator's position by the installer with the following information:
1. Extended height of the tower from the ground.
2. Bulb replacement data.

The tower and installation shall be in full compliance to applicable sections of the current NFPA 1901 Standard.

Testing and Quality Assurance
The tower manufacturer shall be ISO 9001:2008 certified. In addition, quality control and manufacturer testing shall be completed prior to shipment of the tower. The final installer shall test the operation of the tower for a minimum of 2 hours at full load, with testing documentation provided upon delivery.

Manuals

Detailed service, parts, operating, and installation manuals shall be provided by the tower manufacturer. Samples of such manuals shall be provided on request. A CD ROM manual will be provided to the end user.

GROUND LIGHTING - FRONT BUMPER - LUMABAR

Two (2) *Luma Bar* H2O High Output LED ground lights # AY-LB-12HWO20 will be provided under the front bumper, one each side. The ground lights will be activated when the parking brake is applied.

Each light will illuminate an area at a minimum 30" outward from the edge of the vehicle.

GROUND LIGHTING - CAB - AMDOR

One (1) *Luma Bar* H2O High Output LED ground lights # AY-LB-12HWO20 will be provided under the cab door, one each side. The ground lights will be activated when the parking brake is applied.

Each light will illuminate an area at a minimum 30" outward from the edge of the vehicle.

GROUND LIGHTING - FRONT BODY - AMDOR

Two (2) *Luma Bar* H2O High Output LED ground lights # AY-LB-12HWO20 will be provided under the front compartments, one each side. The ground lights will be activated when the parking brake is applied.

Each light will illuminate an area of minimum 30" outward from the edge of the vehicle.

GROUND LIGHTING - REAR BODY - AMDOR

Two (2) *Luma Bar* H2O High Output LED ground lights # AY-LB-12HWO20 will be provided under the rear compartments, one each side. The ground lights will be activated when the parking brake is applied.

Each light will illuminate an area of minimum 30" outward from the edge of the vehicle.

HANSEN - LED COMPARTMENT LIGHTING - DUAL

Each individual apparatus equipment storage compartment will be equipped with dual Hansen LED track lighting, 10MM style, mounted on the vertical door frame on each side of the compartment door opening.

The 12-volt lighting is manufactured with a rugged solid-state design, is shock and vibration resistant and is rated to have a life span of 50,000 hours. The lights are IP66 Rated for waterproof and exceed the compartment lighting requirements of NFPA 1901-2016 edition of 120 Lumens per foot of lighting.

The lights are enclosed in a tough polycarbonate tube that protects the LED circuit board, and has been impact tested to over 50 lbs/sq. in.

The lighting will come with a three (3) year warranty.

COFFIN COMPARTMENT LIGHTING

Installed in the coffin compartments on each side will be three (3) 19" Luma Bar Stand-alone led strip lights, part # AY9220-20. The lights shall be clear and wired to operate when the coffin box is opened, and the headlight switch is engaged.

COMPARTMENT LIGHTING SWITCH - DOOR CONTROLLED

Each apparatus compartment light will be controlled by an individual door activated switch. When compartment door is open the magnetic switch will activate the compartment lighting. When the door is closed the switch will de-activate the compartment lighting.

The system is contained in the composite striker block which protects it from the elements. The "Smart-Switch" minimizes the possibility of wiring malfunction

WARNING LIGHTS AND AUDIBLE DEVICES

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package will include all of the minimum warning light and actuation requirements for the current revision of NPFA 1901 Fire Apparatus Standard. The lighting as specified will meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

LIGHT PACKAGE ACTUATION CONTROLS

The entire warning light package will be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package will engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system will be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights will be set to an NFPA compliant flash pattern by the apparatus manufacturer.

WARNING LIGHT SYSTEM CERTIFICATION

The warning light system(s) specified above will not exceed a combined total amperage draw of 45 AMPS with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way" mode.

The warning light system(s) will be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications. The NFPA required "Certificate of Compliance" will be provided with the completed apparatus.

Any large truck as defined by NFPA will have the lower zone warning lights mounted no higher than 62" to the optical center of the warning light from ground level.

WARNING LIGHTS, WHELEN

NFPA ZONE A UPPER - WHELEN FREEDOM IV 60"

A Whelen Edge® Ultra Freedom IV™ Linear Super-LED® LC Series 60" lightbar model # F4XRWWR will be installed. The lightbar shall incorporate an anodized extruded heavy-duty aluminum base and cover chassis with two front and rear red corner modules, two interior white modules, and two interior red modules. The front and rear of each corner module shall consist of **eight (8) red** Linear Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long red interior Linear Super-LED lights shall incorporate **eight (8)** red Super-LED installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long white interior Linear Super-LED lights shall incorporate 8 white Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The all modules will utilize a Diamond Optix™ metalized reflector and two optic collimators. All electronic components shall be conformal coated to provide additional protection. The outer lens construction shall consist of two clear Uni-Dome top lenses with a clear center lens and utilize two liquid injection molded wiper seal dividers for maximum protection against environmental elements. Metal top shields installed on the Uni-Domes and center lens shall provide protection from climatic conditions and provides passive solar radiation to direct heat away from internal components.

The lightbar shall have an electronic LC I/O board. The solid state I/O board shall be microprocessor controlled. The I/O board shall have built-in reverse polarity protection and output-short protection. The I/O board shall have the ability to flash twenty-two Super-LED warning lights. There shall be a data bank of 12 Scan-Lock™ flash patterns including steady burn with low power and cruise light functions. The cruise light function shall allow the user the four corner modules as marker courtesy lights. The lightbar will have the capability to install a traffic advisor in the rear of the lightbar. The I/O board shall also have outputs to add takedown, alley lights, and auxiliary lights for each set of lights to be controlled in pairs.

All light heads shall be installed in the lightbar with the aid of black polycarbonate snap-in mounting brackets. The solid state lightbar shall be vibration resistant. The lightbar will contain a 17' 2/c 8GA unterminated power cable and 17' 17/c 22GA unterminated control cable. All electronic components are covered by a five-year factory warranty.

WHELEN UPPER WARNING LIGHT PACKAGE, SURFACE MOUNT, M9

Six (6) Whelen M9 Series Model # M9RC warning lights shall be provided. The warning lights shall incorporate Linear Super-LED® and Smart LED® technology. The M9RC configuration shall consist of 24 red Super-LEDs and a clear optic polycarbonate lens.

The lights will be installed as follows:

NFPA ZONES B & D FRONT, UPPER

Installed on the apparatus exterior sides, as far forward on the upper portion of the body as possible, will be two (2) Whelen M9R Super LED red warning lights.

NFPA ZONES B & D REAR, UPPER

Installed on the apparatus exterior sides, as far rearward on the upper portion of the body as possible, will be two (2) Whelen M9R Super LED red warning lights.

NFPA ZONES C, UPPER -

Installed on the rear of the apparatus exterior, in the upper outer corners, will be two (2) Whelen M9R Super LED red warning lights.

The M9RC shall utilize optic collimators and a metalized reflector for maximum illumination. The warning lights shall include an internal flasher with 164 Scan-Lock™ flash patterns including a variety of CA Title 13 compliant patterns, left/right, top/bottom, in/out, and steady burn. The M9RC shall also provide synchronize and low power features. The warning lights shall meet KKK 1822F, NFPA 1901, and SAE specifications.

The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard-coated lens shall provide extended life/luster protection against UV and chemical stresses. The light engine shall be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC board shall be conformal coated for additional protection.

All lights will be installed using M9FC Chrome Flange.

NFPA LOWER LEVEL LIGHTING PACKAGE, M6

The following lower level warning light package will be installed as follows:

NFPA ZONE A, LOWER

Two (2) Whelen M6 SUPER LED warning lights will be installed on the front of the apparatus, one (1) each side.

NFPA ZONES B & D, LOWER FRONT

Two (2) Whelen M6 SUPER LED warning lights will be installed on the front forward edge of either the cab or the extended front bumper, one (1) each side.

NFPA ZONES B & D, LOWER MIDSHIP

Two (2) Whelen M6 SUPER LED warning lights will be installed adjacent to the rear fender housing, one (1) each side.

NFPA ZONES B & D, LOWER REAR

Two (2) Whelen M6 SUPER LED warning lights will be installed at the rearmost portion of the sides of the apparatus, one (1) each side.

NFPA ZONE C, LOWER

Two (2) Whelen M6 SUPER LED warning lights will be installed below the stop, turn and backup lights, one (1) each side.

All M6 SUPERLED Lights will be installed in chrome flanges.

BACK-UP ALARM

A Code 3, model # CA248 NFPA APPROVED, 97 dBA back-up alarm, will be provided and installed at the rear of the apparatus under the tailboard. The back-up alarm will activate automatically when the transmission is placed in reverse gear and the ignition is in the "on" position.

AIR HORN(S) CONTROL FURNISHED BY CHASSIS MANUFACTURER

The air horns control will be furnished on the chassis.

GROVER STUTTERTONE AIR HORNS

Two (2) Grover Stuttertone Model 1510 Air Horns, each 24 1/2" in length will be installed on the side of the apparatus hood.

ELECTRONIC SIREN

A Whelen Siren Amplifier model # 295SLSA1 shall be provided. The siren amplifier shall incorporate a 12V/200W siren installed on an aluminum alloy chassis covered by a black polycarbonate powder coated housing for maximum protection. The 295SLSA1 shall have the ability for either 100 or 200-watt output. The front overlay shall be made of velvet Lexan™ with a matte finish. The lettering and artwork on the overlay shall be illuminated with adjustable backlighting of soft LED non-glaring green. The operating controls will consist of a power switch, manual button, PA volume switch, horn button, and rotary switch. The 295SLSA1 PC board shall have input polarity protection, output short circuit protection. The siren amplifier shall include a 20A/32V fuse. The solid-state siren speaker amplifier shall be vibration resistant. The microphone shall be hardwired to the 295SLSA1.

The 295SLSA1 shall have 21 Scan-Lock™ siren tones with two manual functions for additional siren tones. The siren amplifier shall have the ability to customize the placement of each siren tone with the rotary switch. The siren amplifier shall have a "Siren in Use" icon driver and adjustable preset repeat radio volume. The 295SLSA1 shall have a "Park Kill" feature that disables the siren when the vehicle is in park. The PTT (push to talk) switch on the microphone shall override all siren functions. The 295SLSA1 shall have a combination on/Off and horn ring transfer switch with Bi-polarity horn/ring activation control. The 295SLSA1 shall have SI Test® capability to perform a complete diagnostic silent test of amplifier and speaker(s). The siren amplifier shall have a quick disconnect plug. The 295SLSA1 shall have the ability to activate siren tones with "Aux Enable" input either with a slide switch, power controls, or relay-to-ground connector. The 295SLSA1 shall meet Class A requirement for SAE, AMECA, KKK1822, and California Title XII. The sire amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two-year factory warranty.

SIREN SPEAKERS

Two (2) Whelen, 100-watt model # SA314A natural finish aluminum siren speakers will be provided, recessed in the front bumper and wired to the electronic siren.

APPARATUS BODY SUB-FRAME - ALUMINUM

The apparatus body sub-frame will be an all welded configuration utilizing a combination of 3" x 2" x 3/16" 6061-T6 thick walled structural tubing; 2" x 2" x 3/16" 6061-T6 thick walled structural tubing; and 3" x 3/4" flat-bar structural channel.

The sub-frame will be designed to totally support the full length and width of the apparatus body and will be welded to the apparatus body side compartments by use of reinforcement plates. This configuration incorporates the apparatus compartments into an integral part of the apparatus body weldment.

The sub-frame will be bolted to the apparatus chassis frame at a minimum of six (6) points using 1/2" minimum grade 8 spring loaded "U" bolts.

REAR BODY SUBFRAME

There will be a fabricated steel support structure that will built as an extension of the chassis frame to extend from the rear of the chassis frame and under the rear compartment and rear tailboard. This will provide the support necessary to support the rear of the body to create a structure for the Class IV hitch.

BODY CONSTRUCTION - 18' MISSION CRITICAL NON-WALK IN RESCUE WITH ROLL UP DOORS

RESCUE BODY - 100" WIDE

The rescue body shall be 100" wide to provide the maximum amount of usable compartment space, and to extend the body fenderettes outward for better tire tread coverage.

Body sub frame will be constructed from 2-inch x 3-inch x 1/4 inch 6061-T6 extruded aluminum rectangular tubing for horizontal cross supports. Vertical supports to be 2-inch x 2-inch x 1/8-inch rectangle tubing and 3-inch x 1 1/2-inch structural channel. This structure is completely welded to assure a rigid foundation for the compartments. This structure is welded to a specially fabricated frame. Six (6) 5/8-inch U-bolts are used to secure the body to the truck frame with 1/2-inch rubber as an isolation barrier. The front U-bolt on each side will be spring loaded to reduce any undue stress that may be caused when the chassis flexes.

Body sheet will be constructed from premium finish (unstained) aluminum sheets throughout. Compartment floors are to be constructed of .125-inch aluminum with adequate substructure to eliminate undue deflection under load. Floors will be sweep out design.

Front and rear body panels will to be .187 inch 5052-H34 aluminum with a formed 2-inch radius at the corners. This radius improves aerodynamics, provides a more pleasing appearance and distributes stress more evenly than 90-degree bends.

RESCUE BODY ROOF CONSTRUCTION

The apparatus body and roof construction will be an integral and reinforced type that promotes maximum strength.

The apparatus roof will be 3/16" 3003H-12 aluminum tread plate welded to the interior roof members and vertical interior compartment walls of the apparatus. The roof perimeters will be constructed to overlap the apparatus body side sheets to allow a weather tight seal for the apparatus body area.

All apparatus roof seams will be continuously welded. The use of heliarc welding will be the preferred method for this process.

The roof members of the apparatus will be 2" x 2" x 1/4" wall square tubing, welded in place and supported by the side vertical wall members. The attachment of the roof skin with sheet metal screws, pop rivets, or use of plywood to support the roof surface will not be acceptable.

SCBA STORAGE DRIVER SIDE - REAR SECTION OF FENDER

A storage compartment will be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size). The storage area will be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and will be 26" deep. The compartment will have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment will provide a minimum of 2.3 cubic feet of storage space.

SCBA STORAGE OFFICER SIDE - FRONT SECTION OF FENDER

A storage compartment will be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size). The storage area will be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and will be 26" deep. The compartment will have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment will provide a minimum of 2.3 cubic feet of storage space.

DRIVER FRONT FENDER STORAGE

A slide out absorbent storage bin will be installed in the front driver side body fender. The storage bin will be constructed of smooth aluminum and will be sized to store a minimum of 50 lbs. of absorbent material. The bin will be installed on sliding tracks that allow the bin to extend out of the body fender for dumping/filling. There will be a hinged lid on top of the storage bin to add material to the bin, and a spring-loaded valve at the bottom to dispense material out of the bin. The compartment will be enclosed by a door painted to match the primary body color, with a single point latch and hinge. The back side of the door will have a section of Nylatron installed to protect the door surface from the items stored in the compartment. This compartment will be tied into the compartment door ajar/do not move apparatus warning system.

SCBA STORAGE OFFICER SIDE REAR SECTION OF FENDER

A storage compartment will be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size). The storage area will be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius) and will be 26" deep. The compartment will have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment will provide a minimum of 2.3 cubic feet of storage space.

FENDER STORAGE COMPARTMENT DOORS PAINTED

The SCBA or extinguisher compartment doors will be finish painted job color. The doors will have a spring loaded full length stainless steel piano type hinge with chrome plated thumb latches.

The compartment doors will be wired to the "door ajar" warning lights in the cab of the apparatus.

DRIVER SIDE COMPARTMENT L1

The compartment will be constructed to meet the following:

- Height:75" High inside with a clear door opening of 66" high.
- Width:48"
- Clear Door Opening Width will be 44"
- Depth:The lower portion of the compartment will be 25" deep below frame x 21" high x full transverse above frame rails.
- Roll-up Door

Compartment L1 will be a transverse compartment over the apparatus frame rails.

COMPARTMENT L1 (ACCESSORIES)

The following accessories will be installed for compartment L1:

- Full width floor extension
- Fixed divider will be located approximately 20" from the front compartment wall.
- Installation of Fire Department supplied Hurst e-Draulics 4 battery charger installed in the lower portion of the compartment under the extension;
- Backboard storage for two (2) full size spine boards, offset from front of body to allow for removal without hitting door frame; Velcro strap attached to secure boards.
- Adjustable tray installed on Unistrut "C" channel between the spine board and the fixed divider Full height permanent vertical divider 20" rearward of front wall;
- One (1) adjustable slide out / drop down tray installed on an aluminum Slide Master MT Series Tip Down slide mechanism with spring release lock. This will be located to the rear of the vertical divider. The tray side of the tray will be 4" high and the width on the outside of the tray will be 24" wide x 35" deep.

- Floor mounted 500 lb. steel Slide Master trays with a roll out tray w/ 4" perimeter lip. fully welded. Tray will be approximately 24" wide and have thumb trigger latch on right side of tray. This tray will be located to rear of the ~~of~~ the of the vertical divider. The tray will be 45" deep,

DRIVER SIDE COMPARTMENT L2

The compartment will be constructed to meet the following:

- Height:75" high with a clear door opening height of 66"
- Width:48"
- Clear Door Opening Width of 44"
- Depth:The lower portion of the compartment will be 25" deep below frame x
- 21" high x full transverse above frame rails.
- Roll-up Door

Compartment-L2 will be a transverse compartment over the apparatus frame rails.

COMPARTMENT L2 (ACCESSORIES)

The following accessories will be installed for compartment L2:

- Full width floor extension
- Two (2) full depth of compartment adjustable dual directional trays approximately 20" wide x 29.25" high including the vertical tool boards. They will be installed above the floor extension; each tray will have 3" perimeter lip, fully welded. Trays will be installed on heavy duty Slide Master slides which will have spring loaded lock to secure tray when extended. Each tray will be approximately 20" wide and will have a center vertical divider installed lengthwise and extending complete length of the tray. The divider will be gusset welded on each end to provide support. Installed on each side of each divider will be three (3) Pac Trac tool boards, # 7000, each 88" long x 8.625" high with PacTrac "Z-trac" on the ends. (total 12 pieces) The Pac Trac will extend full width and full height of each divider in each tray.
- Eight (8) PacTool Super Adjust-A-Mounts will be installed as directed by the fire department to carry four (4) Fire Department furnished ResQ-Jacks in horizontal position.
- Under the extended floor a 500 lb. capacity full width roll out tray with 3" perimeter lip, fully welded, will be installed.

DRIVER SIDE COMPARTMENT L3

The over the wheel compartment will be constructed to meet the following:

- Height:40" with clear door height of 31"
- Width:64"
- Clear Door Opening Width 60"
- Depth: Transverse

Compartment L3 will be a transverse compartment over the rear axle of the apparatus.

COMPARTMENT L3 (ACCESSORIES)

The following accessories will be installed for compartment L3:

- There will be a floor mounted steel Slide Master roll out Transverse tray installed with a 3" deep aluminum tray installed on the slide system. The tray system will have a push in lock system.

- There will be an adjustable aluminum Slide Master MT TIP-Down slide system installed in the upper portion of this compartment. The tray will have a push in spring loaded lock system and will have a 4" deep aluminum tray installed on the Slide Master slide mechanism. This will be approximately 35" deep.

DRIVER SIDE COMPARTMENT L4

The compartment will be constructed to meet the following:

- Height:75" with a clear door opening of 66" high
- Width:46"
- Clear Door Opening width 42"
- Depth:25"
- Roll-up Door

COMPARTMENT L4 ACCESSORIES

The following accessories will be installed for compartment L4

- There will be a full height full width aluminum single panel hinged door installed just behind the roll up door. The area behind the hinged door will be used to store cribbing. The door will have three (3) pop-it latches installed.

- There will be a full width adjustable tray installed in the upper portion of the compartment. There will be four (4) Unistrut, two (2) on each side wall that will be full height starting 6" below the roll up door drum and stop six (6) inches from the floor.

- There will be two (2) adjustable shelves in the upper area of the L4 compartment.

- **The area below this will used to carry approximately 900 lbs. or cribbing.**

REAR COMPARTMENT (B-1)

The compartment will be constructed to meet the following:

- Height:75" high x 66" high
- Width:46"
- Clear Door Opening of Width will be 42"
- Depth:42-46" deep in the area above the frame rail
- 30" deep in the lower area of the compartment
- Roll-up Door
-

COMPARTMENT REAR-B1 (ACCESSORIES)

The following accessories will be installed for compartment **B1**:

- There will be a Slide Master SM3-MP slide out tray mechanism install on the floor of this compartment using their steel slides. A push in spring loaded lock system will be provided. The tray sitting on top of the slide mechanism will be a 4" deep aluminum tray installed on the slides. The depth of the tray will be will be approximately 28" deep. **Rescue tools will be installed on this tray,**

- There will be an adjustable slide out drop-down tray with a 4" deep aluminum tray installed in the upper area of the compartment. The tray will be a slide out aluminum Slide Master MT TIP-Down slide out tip down mechanism with the spring release lock system. The depth will be approximately 40"deep. **Rescue tools and tool accessory will be installed on this tray.**

Rescue Tool Mounting Brackets for Trays in B1 Compartment

- There will be One (1)) Ziamatic QM-ET-MV adjustable spreader brackets supplied and installed.
- There will be One (1) Ziamatic QM-ET-MVE adjustable spreader brackets supplied and installed.
- There will be Two PAC FAST Lok Adjust-a-mounts Ram kits supplied and installed.
- Additional reinforcements will need to be added under the roll out trays to prevent damaging occurring to the trays.

- The exact mounting brackets will be determined at Prebid.

OFFICER SIDE COMPARTMENT R1

The compartment will be constructed to meet the following:

- Height:75" High inside with a clear door opening of 66" high.
- Width:48"
- Clear Door Opening Width will be 44"
- Depth:The lower portion of the compartment will be 25" deep below
- frame x 21" high x full transverse above frame rails.
- Roll-up Door

Compartment R1 will be a transverse compartment over the apparatus frame rails

COMPARTMENT R1 (ACCESSORIES)

The following accessories will be installed for compartment OS-R1:

There will be a full width floor extension installed on the officer's side of the compartment.

- As previously specified there will be a vertical slide in storage compartment installed and centered on the forward wall of this compartment for two (2) long spline boards that can be slide into the storage area from the left side of the body. There will be a retaining strap on the end.

- As previously specified in the L1 compartment there will be a 3/16" fixed x 42" high x transverse vertical divider approximately 20" from the front wall on the transverse compartment
- There will be an adjustable storage tray approximately 45" deep installed on the forward portion of the vertical divider. The front Unistrut will be installed on the wall of the spine boards and the rear Unistrut will be installed on the forward side of the vertical divider.

  The department will carry the folding signs on this tray.

  Installed to the rear of the Vertical divider

- The floor mounted aluminum tray that was specified in the L1 will be transverse into this area.

OFFICER SIDE COMPARTMENT R2

The compartment will be constructed to meet the following:

•Height:75" high with a clear door opening height of 66"
•Width:48"
•Clear Door Opening Width of 44"
•Depth:The lower portion of the compartment will be 25" deep below frame x
•21" high x full transverse above frame rails.
•Roll-up Door

Compartment R2 will be a transverse compartment over the apparatus frame rails.

OFFICER'S SIDE COMPARTMENT R3

L3 will be a transverse compartment over the rear axle of the apparatus.

The over the wheel compartment will be constructed to meet the following:

•Height:40" with clear door height of 31"
•Width:64"
•Clear Door Opening Width 60"
•Depth: Transverse

Compartment R3 will be a transverse compartment over the rear axle of the apparatus.

COMPARTMENT R3 (ACCESSORIES)

The following accessories will be installed for compartment R3:

This compartment includes the transverse floor slide out tray as described previously in the L3 compartment.

- One (1) adjustable slide out / drop down tray installed on an aluminum Slide Master MT series Tip Down slide mechanism with spring release lock will be installed approximately from the top of the tray to the floor will be 26" high. The tray will be 35" deep.

OFFICER SIDE COMPARTMENT R4

The compartment will be constructed to meet the following:

•Height:75" with a clear door opening of 66" high
•Width:46"
•Clear Door Opening width 42"
•Depth:25"
•Roll-up Door"

COMPARTMENT R4 (ACCESSORIES)

The following accessories will be installed for compartment R4

- There will be a full height full width aluminum single panel hinged door installed just behind the roll up door. The area behind the hinged door will be used to store cribbing. The door will have two (2) pop-it latches installed.

- There will be a full width adjustable tray installed in the upper portion of the compartment. There will be four (4) Unistrut, two (2) each side will be full height of the compartment for future use

- There will be two (2) adjustable shelves in the upper area of the R4 compartment.

BODY ROOF COMPARTMENTS (DRIVER'S SIDE)

Roof hatch style compartments will be provided that extend from the dunnage area (which encompasses the light tower and generator) to the rear of the body, on the driver side and will be designed as an integral extension of the lower side compartments with a painted exterior finish. Drain tubes will be provided at each end of each side compartment which will extend down through the lower compartments.

Each side roof compartment will extend the length of the body, which will be evenly divided into two (2) individually accessed areas, which will be open through from the front to the rear. The compartment depth will extend from the ceiling area of the upper side compartments to the top of the body (16"). The interior compartment width of each side roof compartment will be a minimum of 30" inside width with an 10" wide access door at the top.

Each roof compartment will be equipped with an overlapping, hinged lift up tread plate door. These doors will be constructed of 3/16" aluminum tread plate with a 15-degree break on all sides. Each door will have two (2) gas shock style stay open devices which will also retain the door in the closed position.

Protective panels will be applied inside the compartments to cover any exposed wiring or recessed side body lighting, provided on the unit. These panels will reduce the overall usable compartment area in the compartments.

BODY ROOF COMPARTMENTS (OFFICER"S SIDE)

Roof hatch style compartments will be provided the full length of the body, on the officer's side of the body hose bed area and will be designed as an integral extension of the lower side compartments with a painted exterior finish. Drain tubes will be provided at each end of each side compartment which will extend down through the lower compartments.

Each side roof compartment will extend from the dunnage area (which encompasses the light tower and generator) to the rear of the body (less the landing zone), which will be evenly divided into two (2) individually accessed areas, which will be open through from the front to the rear. The compartment depth will extend from the ceiling area of the upper side compartments to the top of the body (16"). The interior compartment width of each side roof compartment will be a minimum of 30" inside width with an 24" wide access door at the top.

Each roof compartment will be equipped with an overlapping, hinged lift up tread plate door. These doors will be constructed of 3/16" aluminum tread plate with a 15-degree break on all sides. Each door will have two (2) gas shock style stay open devices which will also retain the door in the closed position.

Protective panels will be applied inside the compartments to cover any exposed wiring or recessed side body lighting, provided on the unit. These panels will reduce the overall usable compartment area in the compartments.

LADDER LANDING - HATCH COMPARTMENTS

An 16" deep x 36" width of the coffin compartments "landing zone" will be installed on officer side as specified by the fire department. The landing zone will be accessed by steps or rear mounted access ladder and will have hand rails on two (2) sides to assist in climbing. The floor of the landing zone will be treadplate step surface.

The landing zone will be lit with LED step lights that will be activated by parking brake activation.

SWING IN ACCESS DOOR

There will be a push in spring loaded hinged door installed at the entrance of the Landing Zone. The door will be hinged to where it will open against the outside side wall of right side of the body.

RAPPELLING EYEBOLTS - UPPER BODY

Four (4) chrome plated eyelet will be installed in the upper front and rear corners on each side of the rescue body. The framework behind the eyelets will be reinforced with aluminum tubing and plate, and the corners of the body will be "notched" to allow recess installation of the eyebolts.

The working load of the eyebolts will not exceed 500 lbs.

WINCH RECEIVER POINT- REAR OF BODY CLASS V RECEIVER HITCH

A 2" square receiver point will be provided below the rear of the body for a portable winch. The receiver point will be a 2 1/2" x 2 1/2" x 1/4" seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to four points on the chassis frame rails.

- A 12v electrical connection with a quick disconnect compatible with the portable winch will be provided adjacent to the receiver point. A plastic end cap will be provided for the quick disconnect.
- A 7 pin rounds plug electrical connection will be provided

- Installed on the apparatus will be a Class 5 ultra-frame receiver hitch with 2" opening and 7 pin rounds plug electrical connection.

- The hitch will have a capacity of 2550 lounge weight and 17,000 towing capacity. The hitch is powder coated steel for corrosion resistance.

WINCH RECEIVER POINT - EACH SIDE OF THE BODY

A 2" square receiver point will be provided beneath the rub rail toward each side of the Rescue body for a portable winch. The receiver point will be a 2 1/2" x 2 1/2" x 1/4" full width of body seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to four points on the chassis frame rails. A 12v electrical connection with a quick disconnect compatible with the portable winch will be provided adjacent to the receiver point. A plastic end cap will be provided for the quick disconnect.
DA-99-0010

ELECTRIC PORTABLE WINCH

A Warn model # 37441, XD9i, 9000 lb. portable electric winch will be provided to mount in the specified winch receivers. The winch will be equipped with the portable framework, 12v quick connection, an automatic, direct drive cone brake, heavy duty thermally protected series wound industrial electric motor and a hardened steel 3-stage planetary gear train.

A 12' remote control head will be provided with the remote plug mounted directly on the winch housing. The winch will be equipped with **100' of 3/8" Kevlar rope,** including hook. A four-way fair lead roller assembly will be provided at the winch opening.

The winch will meet all SAE J706 requirements as outlined NFPA -1901.

ROM ROLL UP DOORS

There shall be R•O•M Series IV roll-up shutter doors installed on each exterior compartment. Each shutter slat, track, bottom rail, and drip rail shall be constructed from anodized 6063 T6 aluminum.

Shutter slats will feature a double wall extrusion 0.315" thick with a concave interior surface to minimize loose equipment jamming the shutter door closed. Shutter slats will feature an interlocking end shoe to prevent side to side binding of the shutter door during operation. Slats must have interlocking joints with an inverted locking flange. Slat inner seal shall be a one-piece PVC extrusion; seal design will be such to prevent metal to metal contact while minimizing dirt and water from entering the compartment.

Shutter door track shall be one-piece design with integral overlapping flange to provide a clean finished look without the need of caulk. Door track shall feature an extruded Santoprene rubber double lip low profile side seal with a silicone co-extruded back to reduce friction during shutter operation.

Shutter bottom rail shall be a one-piece double wall extrusion with integrated finger pull. Finger pull shall be curved upward with a linear striated surface to improve operator grip while operating the shutter door. Bottom rail shall have a smooth contoured interior surface to prevent loose equipment from jamming the shutter door. Bottom rail seal shall be made from Santoprene; it will be a double "V" seal to prevent water and debris from entering compartment. Bottom rail lift bar shall be a one piece "D" shaped aluminum extrusion with linear striations to improve operator grip during operation. Lift bar shall have a wall thickness of 0.125". Lift bar shall be supported by no less than two pivot blocks; pivot blocks shall be constructed from Type 66 Glass filled reinforced nylon for superior strength. Bottom rail end blocks shall have incorporated drain holes which will allow any moisture that collects inside the extrusion to drain out.

Shutter door shall have an enclosed counter balance system. Counter balance system shall be 4" in diameter and held in place by 2 heavy duty 18-gauge zinc plated plates. Counter balance system shall have 2 over-molded rubber guide wheels to provide a smooth transition from vertical track to counter balance system; no foam material of any kind shall be permitted or used in this area.

A magnetic door ajar switch shall be provided and installed within the shutter door strike block. Strike block will be mounted to the door track outside of the compartment. Door switch will be controlled by a magnetic end cap installed into the shutter lift bar. Door switch will provide a ground signal to a relay or multiplexing device to control compartment lighting and/or warn operator door is open.

Shutter door assembly shall be manufactured and assembled in the United States, no exceptions

ROM DOORS, PAINTED

Eight (8) roll up doors shall have a satin finish.

ROM SHOCK CORD PULL STRAPS

A shock cord type pull strap will be permanently installed on each roll up door to assist in closing the roll up door.

ROLL-UP DOOR PROTECTION PANEL

A protection panel(s) will be provided at the top of each body exterior compartments fitted with roll-up doors. The panel(s) will be installed below the roll-up area to prevent possible damage to the roll-up door by misplaced equipment. Each protection panel will be bolted in place and have a brushed plain aluminum finish.

SWEEP-OUT COMPARTMENT FLOORS

Compartment floors will be welded to the compartment walls and have a sweep out design for easy cleaning.

Compartments with hinged doors will have the door opening flanges bend down to produce the sweep-out design.

Compartments with roll-up style doors will have the external floor flange stepped down, 1/2" high x 2" deep, to produce a sealing surface for the roll-up doors below the compartment floor. The sweep out design will also permit easy cleaning.

COMPARTMENT TOPS

The compartment tops will be covered with a polish finished aluminum tread plate on both sides.

COMPARTMENT DRIP MOLDING

Compartment tops over all apparatus side compartments will have a forty-five 45° flange formed out to provide protection against water runoff. A second extruded drip molding piece will be provided between lower compartments and other high side compartments, when auxiliary compartments are provided.

COATED FASTENERS

All fasteners on the exterior will be stainless steel coated screws. The screw threads will be coated with a reusable, self-locking, sealant material that will provide vibration resistance. The screw heads will be coated with a sealant element that will prevent galvanic corrosion between dissimilar metals. All non-coated screws will only be acceptable when provided as part of a vendor supplied component installation.

COMPARTMENT LOUVERS

Ventilation between apparatus compartments to atmosphere will be provided and located to avoid water entry into the compartments of the apparatus.

ACCESS PANELS

Removable access panels will be supplied in all lower compartments (if applicable) to access spring pins, fuel tank sender, electrical junction compartment and apparatus rear body mounts.

Protective panels will be located in the rear apparatus compartments that provide access to the lights and associated wiring. The covers will also serve as protective covers to prevent accidental damage to lights or wiring from tools or equipment located in the compartment.

REAR BODY PANEL

The apparatus rear body panel will extend the full width between the apparatus beavertails. This panel will be full height from the rear step to the apparatus hose bed floor. The panel will be bolted on, and it will be removable; no part of the rear panel will be attached to the water tank. The rear body panel will be constructed of aluminum treadplate material as standard. If chevron striping has been specified by the customer for the rear of the body, then a smooth finished aluminum will be utilized to facilitate the chevron striping material.

BODY RUB RAILS

Aluminum tread plate rub rails will be supplied and installed at the base of the apparatus body, extending outward a minimum of 3/4", downward 2" and flanged inward 1". The apparatus rub rails will extend the full length of the main apparatus body and wrap around the rear apparatus body corners. The rub rails will be designed to bolt onto the apparatus body from the underside of the compartment area. This design will be used to prevent damage to the body side panels in the event of initial impact to this area. The body rub rails will be installed to provide ease of replacement.

REAR BODY SUPPORT SYSTEM

The body has a deep rear compartment and will be built using two (2) under body support system bolted to the rear frame extension and shall drop down below the frame and run under the body to the rear of the body compartments.

This design will relieve stress from the body caused by the dynamics of the bouncing over rough roads in the area where the truck will be used.

REAR APPARATUS BUMPER

A twelve-inch (12") rear bumper will be supplied at the rear of the apparatus body for additional protection. The bumper framework will be integral to the sub-frame weldment with a bolt-on treadplate overlay; this will allow for ease of repair

and/or replacement. The apparatus bumper (tailboard) will be constructed from aluminum tread plate, the bumper corners will feature mitered corners that will prevent snagging at the apparatus tailboard.

PROTECTION PANELS - FRONT OF BODY

The apparatus will feature aluminum tread plate overlays and panels that will be installed on the front of the body compartment to protect the body.

PROTECTION PANEL - LOWER BODY REAR

The apparatus will feature aluminum tread plate overlays and panels that will be installed the full width of the apparatus body, in the area below the rear compartment and above the tailboard.

GRAB RAILS

All of the hand rails will be 1-1/4" outside diameter, knurled bright anodized aluminum extrusion, and designed to meet the latest NFPA 1901 requirements.

The use of molded gaskets installed between the handrail stanchion castings and the body surfaces will be used to prevent an electrolytic reaction between dissimilar metals and to protect the body paint.

LOCATION OF GRAB RAILS

The apparatus grab rails will be provided at the following specified locations. To comply with the latest NFPA 1901 requirements, additional grab rails will be provided adjacent to any additional steps.
DC-02-0030

VERTICAL RAILS - (2) - REAR

Two (2) vertical rails will be provided and installed on the rear edge of the apparatus beavertails; one (1) on each side.

HANDRAILS (2)- LANDING AREA

One (1) horizontal and one vertical, handrails will be provided and installed on the rear in the "landing zone" area on the roof of the apparatus to assist in access.

REAR ACCESS LADDER, ZICO RL SERIES

Installed on the rear of the body will be a Ziamatic RL Series fold out access ladder. The access ladder will be operated by Releasing the locking handle and pull the ladder out to a comfortable climbing angle when needed. The ladder automatically latches and will not retract until the scissor lock is raised.

Cast aluminum rungs have a flat, non-skid surface to provide traction and safety. Each rung is 3" deep. Handrails are 1-1/4" heavy-walled aluminum tubing, covered in a rough-grip black powder-coat.

The ladder is custom designed

APPARATUS SURFACES - STEPPING, STANDING & WALKING

All exterior surfaces of the apparatus that are designated by the manufacturer as stepping, standing or walking areas will be constructed of textured treadbrite aluminum. These areas will provide slip resistance on the surfaces, even when the surface is wet. All interior surfaces that are designated by the manufacturer as stepping, standing or walking areas shall be slip resistant when the surface is dry.

The degree of slip resistance will be in accordance with the latest edition of NFPA 1906.

There will be a sign on the rear of apparatus stating: "DO NOT RIDE ON REAR STEP, SERIOUS INJURY OF DEATH MAY RESULT."

SAFETY SIGN(S) - REAR STEP / CROSS WALKWAY(S)

NFPA required safety sign(s) will be located on the apparatus at the rear step, and at any cross walkway(s) to advise (warn) personnel that riding in or on these areas is prohibited while the apparatus is in motion.

WHEEL WELL LINERS - REAR

The apparatus will feature1/8" wheel well liners; the wheel well liners will be welded to the apparatus sub-frame. The wheel well liners will extend from the outer wheel well body panel into the apparatus frame. Removable vertical splash shields located inward of the wheels, will be supplied and installed to allow access to hydraulic components. The fender liners will be completely washable. These liners will be designed to protect the front and rear compartments and main body supports from road grime, salt, dirt and corrosion.

FENDERETTES - REAR

The apparatus single axle fenders will be supplied with replaceable, stainless steel polished fenderettes. The fenderettes will feature a rubber gasket molding between the fender and the apparatus body panel.

MUD FLAPS - FRONT

The apparatus will be supplied with heavy duty mud flaps behind the front wheels.

MUD FLAPS - REAR

The apparatus will be supplied with heavy duty mud flaps behind the rear wheels.

TOW EYES - REAR

The apparatus will be supplied with two (2) painted tow eyes at the rear of the apparatus. The tow eyes will be constructed of forged alloy steel and will be bolted directly to the apparatus chassis frame rails with grade eight (8) bolts and will extend below the apparatus body. The tow eyes will be smooth and free from sharp edges. The tow eyes will have a minimum eyelet hose of 3" and be rated for maximum pull of 42,000 lbs. The tow eyes will be painted.

GENERATORS AND AC ELECTRICAL

110/120-VOLT NFPA LOAD TEST

Electrical System Testing.
The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900 volts for 1 minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed. The dielectric tester shall have a 500 volt-amperes (VA) or larger transformer, with a sinusoidal output voltage that can be verified.

Electrical polarity verification shall be made of all permanently wired equipment and receptacles in order to determine that connections have been properly made.

Operational Test
The apparatus manufacturer shall perform the following operational test and shall certify that the power source and any devices that are attached to the line voltage electrical systems are properly connected and in working order.

The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.

The following information shall be recorded:
(1) The cranking time until the prime mover starts and runs, if applicable
(2) The voltage, frequency, and amperes at continuous full rated load
(3) The prime mover oil pressure, water temperature, transmission temperature, hydraulic temperature, and the battery charge rate, as applicable
(4) The ambient temperature and altitude

The power source shall be operated by the apparatus manufacturer at 100 percent of the systems continuous rated wattage as specified on the Power Source Specification Label for a minimum of 2 hours. Testing with a resistive load bank shall be permitted. The conditions specified in 21-14.4.1(2) and (3) shall be recorded at least every 1/2 hour during the test.

If the apparatus is equipped with a fire pump, this 2-hour test shall be completed with the fire pump pumping at 100 percent capacity at 150-psi (1035 kPa) net pump pressure. The 2-hour test shall be permitted to be run concurrently with the pump certification test required in 14-13.1.

Where the line voltage power is derived from the vehicles low-voltage system, the minimum continuous electrical load as defined in Chapter 11 shall be applied to the low-voltage electrical system during the operational test. Any termination of line voltage power by the low-voltage load management system shall be noted, and the duration of the periods of line voltage power source shutdown shall be recorded.

Vehicle support systems that are required to maintain the power source in operation shall remain within their required operational parameters.

The results of the tests listed in this section shall be supplied to the County at the time of delivery.

120/240 VOLT WIRING METHODS

Wiring/conduit will not be attached to any chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components or low voltage wiring.

All wiring will be installed at a minimum of 12 inches away from any exhaust piping and a minimum of 6 inches from any fuel lines.

All wiring will be securely clamped within 6 inches of any junction box and at a minimum of every 24 inches of run. All supports will be of nonmetallic material or corrosion protected metal. All supports will not cut or abrade conduit or cable and will be mechanically fastened to the vehicle.

All power supply assembly conductors, including neutral and grounding conductors, will have an equivalent amperage rating and will be sized to carry not less than 115% of the main breaker rating.

All Type SO or Type SEO cable not installed in a compartment will be installed in wire loom. Where Type SO or Type SEO cable penetrates a metal surface, a rubber or plastic grommet or bushing will be provided.

The installation of all 120/240 wiring will meet the current NFPA-1901 Standards.

120/240 VOLT WIRING IDENTIFICATION

All line voltage conductors located inside the main breaker panel box will be individually and permanently identified. When pre-wiring for future power wiring installations, the non-terminated ends will be labeled showing function and wire size.

120/240 VOLT GROUNDING

The neutral conductor of the power source will be bonded to the vehicle fame only at the power source.

The grounded current carrying conductor (neutral) will be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor will be colored white or gray.

In addition to the bonding required for the lower voltage return current, each body and driving/crew compartment enclosure will be bonded to the vehicle frame by a copper conductor. The conductor will have a minimum amperage rating of 115 percent of the name plate current rating of the power source specification label.

120/240 VOLT CIRCUIT BREAKER / RECEPTACLE INSTALLATION

The system will be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. When multiple circuit are required, the circuits will be wired to the breaker panel in a staggered configuration to minimize electrical loads on each breaker or generator (leg) circuit. The wiring, electrical fixtures and components will be to the highest industry quality standards available on the domestic market. The equipment will be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage.
EA-22-0102

HARRISON 10,000-WATT HYDRAULIC DRIVEN GENERATOR

One (1) Harrison Hydraulic Driven Generator model number 10.0MCR rated at 10000 watts, 83/41 amps, 120/240VAC, 60 Hz, 1-phase will be provided.

The system will be designed and assembled by a company with no less than 10 years of experience in the manufacture of hydraulic driven generators. The system will be tested prior to shipping and be accompanied with a test report. The generator will be tested at various loads from no load to full load to ensure reliable power delivery at various loads.

The motor/generator will be placed in a frame which affords protection to the components and provides a unitized mounting module containing the motor/generator, reservoir, oil cooler, filtration, on/off manifold containing a cross port check valve allowing unit to be started and shut down remotely.

The generator will be a commercial type with a heavy-duty bearing and of brush less design to ensure low maintenance. No brushes or slip rings will be allowed. The reservoir will include an oil level sight gauge, oil temperature gauge; fill cap, oil filter, and a venturi boost unit to provide positive pressure to the pump suction port.

The generator and motor will be close coupled and aligned using a Morse taper with a through bolt to secure the motor to the generator. No two (2) bearing generators will be used.

The system must be capable of producing the rated full power when driven from the vehicle PTO from idle to maximum engine speed.

The generator system must be able to operate on either a Constant Engaged PTO or a Hot Shift PTO. The Generator must be able to be used while vehicle is either stationary or in motion.

The hydraulic motor and pump will be of axial piston design to provide low internal leakage and a high degree of frequency stability. No gear pumps or motors will be used. The pump will match the system with the proper orifice, pressure compensator, and load sense settings to provide stable output regardless of engine rpm or electrical load demands.

The system will be capable of normal operations using a commonly available ISO 46 hydraulic fluid. All fluid service points will be in close proximity to the reservoir for ease of scheduled maintenance.

When properly installed, the system will be warranted for a period of not less than two (2) years or 2000 hours, whichever should come first.

The generator will be remotely turned on/off by using a 12 VDC switch mounted on the cab dash.

Harrison will provide a four (4) foot s/o cord so that it can be easily wired to the truck without the need for opening the junction box.

A Quadra meter containing the volt, amp, and frequency is to be provided and installed in a location that is away from the weather and water over spray. If meter is to be installed in the elements, then an upgraded digital meter is to be used.

GENERATOR PTO

A hot shift PTO will be provided on the transmission for the Harrison generator. The PTO will be controlled from the cab. The control will include a PTO engagement switch and a PTO engaged indicator light.

GENERATOR RUNNING LIGHTS

A 120-volt generator running light will be installed on the cab dash and on electrical control panel.

GENERATOR LOCATION

The generator will be permanently mounted in the front of the upper body walkway.

Locating the generator greater than 144" from the main breaker panel may require the installation of an additional power disconnecting means.

ELECTRIC CABLE REEL

Two (2) Hannay CR1618-17-18, 240-volt, electric rewind cord reels (able to accommodate 200 or 225 feet of 10-gauge electric cable) will be provided and wired to the breaker panel and installed as listed below. The reel shall be equipped with a universal frame that will allow the 12-volt motor to be mounted in four different positions. The customer shall have the ability to move the motor from front to back or side to side without having to purchase extra parts. The reel will be securely mounted and equipped with a rewind control adjacent to the reel.

The cord reels will be mounted, one (1) in the upper ceiling of L1 and one (1) in the upper ceiling area of R1.

The circuit breaker used to protect any device attached to the cord reel will be sized to the smallest electrical connection used.

Two (2) reel rewind switch(s) will be provided on the compartment wall

ELECTRIC CABLE

Two hundred (200) feet of Type SO yellow 10/4 heavy duty electric cable, wired for 240 volts, will be supplied on each cord reel.

One (1) NEMA L14-20R, 20-amp, four prong twist-lock receptacle will be provided on the end of each cable.

OUTLET BOX - CIRCLE D 4 OUTLET

There shall be one (1) Circle D Powerbox Junction Box model # PF51GFCI-3MIYEL, with pigtail, provided for each reel. The Powerbox Junction Box shall have 4 receptacles, 2 on each side, straight blade and/or twist lock plugs. The junction box has a high visibility yellow powder coated color, bright indicator light on top, and easy to grip handle as some of the features.

An aluminum treadplate mounting bracket will be furnished for each reel.

BREAKER PANELS - SQUARE D 110 VOLT with 12-20 AMP BREAKERS

There shall be one (1) Square D twelve (12) place Breaker Box with twelve (12) 20-amp 120-volt circuit breakers mounted at a location to be determined by the Fire Department.

RECEPTACLE - 110 VOLT TWIST LOCK 20 AMP (L5-15)

There shall be four (4) NEMA # L5-15. 15-amp Twist Lock Receptacles installed on the apparatus in a location to be determined by the Fire Department. The receptacle shall be wired to the breaker box. Each receptacle shall have a weatherproof cover and be wired to an individual circuit breaker.

LOCATION OF RECEPTACLES

Two (2) - one (1) each side of rear wheel panels.

Two (2) - one (1) each side of front body panel.

PAINT, PREPARATION AND FINISH

The apparatus body will be painted Sikkens with color chosen by the fire department. The paint process will meet or exceed current state regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water, and soil. The builder will, upon demand, provide evidence that the manufacturing facility follows South Carolina EPA rules and regulations.

The exterior will have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors will be painted separately to assure proper paint coverage on body, door jambs and door edges.

The builder paint process will feature Sikkens high solid LV products and be performed in the following steps:

•Corrosion Prevention - all aluminum surfaces will be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.

•Sikkens Sealer/Primer LV - acrylic urethane sealer/primer will be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.

•Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat will be applied, providing excellent coverage and durability. A minimum of two (2) coats will be applied.

•Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat will be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats will be applied.

•ECK Treatment- Any location where the material is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components will be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment will be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components will be individually treated with the corrosion inhibiting pre-treatment.

•Gloss Rating -After the paint process is complete, the gloss rating of the unit will be tested with a 20-degree gloss meter. Coating thickness will be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

METALLIC PAINT AND APPLICATION

Due to complexity of application and increased cost of paint, an additional charge will be applied for use of metallic or paint.

BODY PRIMER & PREPARATION

All exposed welds will be ground smooth for final finishing of areas to be painted. The compartments and doors are totally degreased and phosphatized. After final body work is completed, grinding (36 and 80 grit), and finish sanding will be used in preparation for priming.

COMPARTMENT PAINT

The interior of the compartments will be finish painted with Gray Zolotone paint.

BODY FINISH PAINT

The apparatus body will be finish sanded and prepared for final paint. Upon completion of final preparation, the apparatus body will be painted utilizing the highest quality, state of the art, low V.O.C., polyurethane base paint. Finish paint will be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

The entire body will be buffed and detailed.

BODY PAINT

The inside and underside areas of the complete apparatus body assembly will be painted black using a PPG Delta System, prior to the installation of the body on the chassis.

The entire apparatus body will be buffed and detailed.

BODY PAINT

The body paint finish will be Sikkens paint system in a single color, to match customer furnished paint codes and requirements.

CUSTOMER PAINT CODE

The Metallic Blue paint code will be a match to PPG FBC 915334. The vendor will cross this over to a Sikkens paints number.

TOUCH-UP PAINT

One (1) pint of each exterior color paint for touch-up purposes will be supplied when the apparatus is delivered to the end user.

FINALIZATION & DETAILING

Prior to delivery of the completed apparatus, the interior and exterior be cleaned and detailed. The finalization process detailing will include installation of NFPA required labels, checking fluid levels, sealing and caulking required areas of the cab and body, rust proofing, paint touch-up, etc.

CHASSIS CAB PAINT

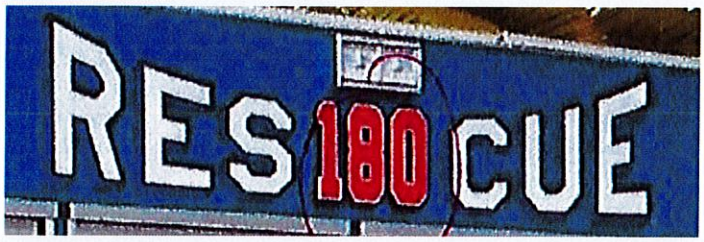
The apparatus commercial cab exterior will be finish painted in Metallic Blue color by the original chassis manufacturer with the Purchaser's choice of color (as available).

COMPUTER GENERATED LETTERING

The lettering and striping of the apparatus will be custom designed utilizing state of the art computer software and computerized cutting machines. The builder has a full-time artist / design department that is capable of producing all lettering, decals, and striping to meet the requirements of the Fire Department. The artwork for the lettering and striping will be kept on record by the apparatus manufacturer to allow for ease in duplication for the Fire Department.

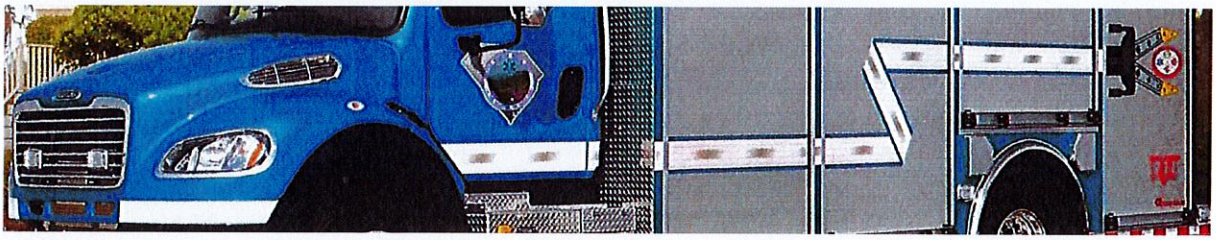
UPPER BODY SCOTCHLITE

There will be custom designed Scotchlite letters furnished and installed on the upper side of the body.



CUSTOM BODY SCOTCHLITE STRIPPING

Scotchlite stripping will be supplied as follows:



CUSTOM GRAPHICS ON END OF SCOTCHLITE

There will be a custom Scotchlite graphics image installed on both side of the body on the end of the Scotchlite as shown above.

COUNTY DOOR SEALS

County door Emergency Management door seals will be installed between the arms on the rescue tool graphics

REAR BODY LETTERING

Twelve (12) inch white Scotchlite letters with black outline will be furnished and installed on the rear of the body above the rear compartment door as follows "**LAKE MURRAY**"

MALTESE CROSSES

There will be two (2) 24" high Stars of Life reflective decals furnished and installed on the rear of the body, one (1) each side of the rear compartment door.

CUSTOM DOOR SEALS

The fire department will furnish their fire department door seal that will be installed on each side of the truck on the cab doors.

REAR CHEVRON STRIPING

The entire rear of the truck will be covered with alternating strips of reflective striping per NFPA recommendations.

The chevron striping will be six-inch (6") Diamond Grade Scotch-Lite. The Scotch-Lite Diamond Grade chevrons will be Red and Fluorescent Yellow Green in color.

Warranties and Services

The following services and warranties will be included with the sale of the truck. Please provide the warranties that will be provided.

There will be a two (2) year Convenience package included in the truck which includes and travel cost to the department for warranty repairs, a PM check before truck is delivered as well as within 30 days before the end of the 1st year and the 2nd year. Transportation charges will be included to transport the vehicle to the chassis or body builders service location for two (2) years.

Minimum of two (2) year Warranty on the finished product excluding wear, tear and maintenance items,

Freightliner Chassis Warranty

Fire (5) year Allison Transmission Warranty

Five Year Cummins Engine Warranty

Bright work Warranty

Weldon V-Mux Warranty

Lettering and Graphics Warranty – minimum of five (5) years

Paint Warranty – Seven (7) year minimum

Body Structural Warranty – 20 years

ROM Door warranty

Compartment Light Warranty

Warning Light and Auditable Warning Device Warranty

Wilburt Light Tower Warranty

PLEASE NOTE THAT ANY AND ALL REFERENCE TO A SPECIFIC BRAND NAME MAY BE SUBSTITUTED FOR AN EQUAL OR COMPARABLE BRAND; HOWEVER, THE COUNTY WILL BE THE ULTIMATE DECIDING FACTOR IN DETERMINING THE EQUALITY OF THE SUBSTITUTION.