# Township of Muskoka Lakes

# Request for Tender

# T-2025-18

# Supply and Deliver
# One (1) New PUMPER FIRE APPARATUS – 4 DOOR

# TOWNSHIP OF MUSKOKA LAKES

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# TOWNSHIP OF MUSKOKA LAKES

# TENDER

## PART I TENDER CALL

The Corporation of the Township of Muskoka Lakes (after this called the "Owner") invites Tenders for:

Contract Number: T-2025-18

Described as Supply and Deliver

One (1) New PUMPER FIRE APPARATUS

– 4 DOOR

Tenders shall be addressed and delivered to:

Fire Chief – Ryan Murrell
TENDER #T-2025-18
Muskoka Lakes Fire Department
Email: rmurrell@muskokalakes.ca

**Tenders shall be received until: 2:00 p.m. Wednesday February 26, 2025**

Tenders received by the time and date specified above shall be opened and read in public as soon as possible after that time. Public reading of a Tender does not imply any decision by the Owner as to whether a Tender is or is not irregular.

## PART II TENDER CONDITIONS

### TC-1 Completion and Submissions of Tenders

1.1 The Tenderer shall complete all documents pertaining to this Contract in ink or in type.

1.2 If the Tenderer is a corporation, an authorized officer of the corporation shall sign and seal the Form of Tender.

1.3 If the Tenderer is a partnership, a minimum of two partners shall sign the Form of Tender and signatures shall be witnessed.

1.4 If the Tenderer is a sole proprietorship, the sole proprietor shall sign the Form of Tender and the signature shall be witnessed.

1.5 The Tenderer shall submit its Tender by the date and time specified in Part I of the Tender.

1.6 The Tenderer shall submit to the Owner:
a) Part III – Form of Tender;

1.7 The Tenderer shall submit the Tender via email to rmurrell@muskokalakes.ca properly identified with the subject line stating the number of the tender, description and name of the Tenderer.
(ex. T-2024-19, Pick up truck, ABC Ford)

1.8 Tender irregularities will be dealt with in accordance with the Township of Muskoka Lakes Purchasing By-Law 2004-161, as amended.

1.9 All inquiries/questions regarding this Tender are to be sent via email to Ryan Murrell, Fire Chief at rmurrell@muskokalakes.ca. Inquiries must be received no later than five (5) Business Days prior to the tender submission deadline specified in Part I of the Tender or as amended by addendum. Unless otherwise addressed through an addendum, all responses to bid inquiries shall not be incorporated as part of the Contract or in any way change the Contract.

### TC-2 Basis of Award

2.1 The Township intends to award the contract to bidder that best meets the operational needs of the Township and represents the best value for the Township. This will be determined through an examination of the conformance to specifications balanced with Total Tender Price. As such, lowest tender price may not necessarily be accepted.

## TC-3 Addenda

3.1 Addenda will be posted on the Township website (www.muskokalakes.ca) for viewing and shall be located in the same area of the webpage that the Tender documents are downloaded from.

3.2 The Township will not notify Tenderers of addendums and it is the responsibility of the Tenderer to monitor the webpage and retrieve posted addendums prior to submitting their bid.

3.3 The Tenderer shall ensure that all addenda that are issued are acknowledged and listed under Section FT-1 of the Tender.

3.4 The deadline for the posting of addenda is no later than three (3) Business Days prior to tender submission deadline as specified in Part I of the Tender or as amended by addendum.

## TC-4 Irregular Tenders

4.1 The Owner shall be the sole judge of whether or not a Tender is irregular.

## TC-5 Unbalanced Tenders

5.1 The Tenderer shall not submit an unbalanced Tender.

5.2 The Owner shall have the right to:

a) deem a Tender to be unbalanced; and
b) reject a Tender which it deems to be unbalanced.

## TC-6 Collusion

6.1 The Tenderer shall not engage in collusion of any sort and, in particular, shall:

a) ensure that no person or other legal entity, other than the Tenderer, has any undisclosed interest in the Tenderer's Tender; and
b) prepare its Tender without any knowledge of, comparison of figures with or arrangement with any other person or firm preparing a Tender for the same work.

## TC-7 Right to Accept or Reject Tenders

7.1 Notwithstanding any other provision in this Contract, the Owner shall have the right to:

a) accept any Tender;
b) reject any Tender; and
c) reject all Tenders.

7.2 Without limiting the generality of Section TC-7.1, the Owner shall have the right to:

a) accept an irregular Tender;
b) accept a Tender which is not the lowest Tender; and
c) reject a Tender even if it is the only Tender received by the Owner.

7.3 Acceptance of the Tender shall occur at the time the Owner awards the Tender and not necessarily at the time the award is communicated to the successful Tenderer.

## TC-8 Contract Documents

8.1 The Tenderer shall obtain and review all Contract Documents as listed in the Form of Tender including all Addenda issued by the Owner pertaining to this Contract.

## TC-9 Errors, Omissions and Discrepancies in the Contract Documents

9.1 If the Tenderer finds any errors or omissions in or discrepancies among the Contract Documents, it shall immediately notify the Owner at the address specified in Part I of the Tender.

9.2 No oral explanation or interpretation by any person shall modify any of the Contract Documents.

## TC-10 Irrevocability of Offer

10.1 The Tenderer shall not revoke its offer until after the expiration of sixty (60) days after the opening of Tenders by the Owner.

## TC-11 Successful Tenderer - WSIB Certificate of Clearance

11.1 The successful Tenderer shall provide the Owner with a valid Workplace Safety & Insurance Board Certificate of Clearance to the satisfaction of the Owner.

## TC-12 Successful Tenderer - Execution of Form of Agreement

12.1 The successful Tenderer shall execute in accordance with TC-1, in triplicate, the Form of Agreement provided in the Contract Documents.

12.2 The successful Tenderer shall forward the executed Form of Agreement to the Owner.

## TC-13 Successful Tenderer - Time for Completion

13.1 The successful Tenderer shall provide the product by December 1, 2024.

13.2 The successful Tenderer acknowledges that time shall be deemed to be of the essence of the Contract. For the Tenderer's purpose of establishing a schedule for

the Work, it is anticipated that contract award will be complete within 30 calendar days after the opening of tenders by the Owner. Upon notice of award, the successful Tenderer will be required to complete submissions to the Owner as per TC-14.1. Upon receipt of all required submissions from the successful Tenderer, the Owner will return an executed Form of Agreement to the Tenderer within 10 Business Days.

13.3 Milestone dates associated with the Contract will be adjusted, when possible, due to any delays to the anticipated award schedule caused by the Owner during the contract award and/or issuance of the authorization to commence work.

**TC-14 Successful Tenderer - Submission of Documentation**

14.1 The successful Tenderer shall submit the documentation required by Sections TC-11 and TC-12 within seven (7) calendar days of the day the Owner notifies the successful Tenderer that the documentation should be sent to the Owner.

14.2 If the successful Tenderer fails to comply with Section TC-14.1 the Owner may, in its sole discretion, withdraw its acceptance of the Tender and the Tenderer shall have no recourse whatsoever against the Owner.

**TC-15 Successful Tenderer - Commencement of the Work**

15.1 The successful Tenderer shall not commence the Work until it has received authority to proceed with the work from the Owner as well as the fully executed Form of Agreement signed by both parties (Tenderer and Owner) and a Purchase Order issued by the Owner.

**TC-16 Successful Tenderer - Vendor Performance Management Notice**

16.1 The contract resulting from this Tender may be subject to performance evaluation conducted by the Owner. The Owner reserves the right to consider the results of this performance evaluation in the award of future contracts and/or in the selection of vendors for future work. Performance evaluation will be managed in accordance with Township policy HS-007-POL, “Contractor Activities and Control Policy” and Township Procurement Policy By-law 2004-161, as amended.

# TOWNSHIP OF MUSKOKA LAKES

## PART III - FORM OF TENDER

Tender
by:

_____
NAME OF TENDERER

_____

_____

_____
ADDRESS OF TENDERER TELEPHONE NUMBER

_____
FAX NUMBER

_____
E-MAIL

after this called the “Tenderer”.

**FT-1 Contract Documents**

1.1 The Contract Documents for Contract Number **T-2025-18** are:

a) Tender
   i) Part I - Tender Call
   ii) Part II - Tender Conditions
   iii) Part III - Form of Tender
b) Form of Agreement
c) Special Provisions
d) All Addenda issued pertaining to the Contract as acknowledged below: Addendum No._____dated , 20_ _____, No. of Pages _____
   Addendum No.__dated _____, 20___, No. of Pages _

**FT-2 Schedule of Specifications**

2.1 The Schedule of Specifications attached is Section FT-2.5 of the Tender. The Schedule of Specifications shall form an integral part of the tender submission and must be completed in its entirety.

2.2 All equipment shall conform to the latest laws, rules and regulations in the Province of Ontario. The vehicle shall meet or surpass all relevant requirements of the Canadian Motor Vehicle Safety Standards at the date of the vehicle and equipment manufacture.

2.3 Only standard factory approved makes and models shall be included in this tender. The vehicle shall be equipped with all standard features for the quoted make and model plus anything outlined in this specification if not standard. Vehicles shall be supplied only with the standard or advertised optional engine for the vehicle being bid. Vehicles with non-advertised or altered engine horsepower settings will not be accepted. Only currently advertised and factory approved engine and drive train combinations are acceptable. Only the major details of the vehicle are listed. It is the supplier's responsibility to deliver a fully equipped vehicle with compatible components to provide dependable efficient service. Where minimums are given, the vehicle must meet or exceed the capacity, size, or performance specified. All components of the vehicle must be new including any related attachments.

2.4 For each of the specific requirements, please indicate if the equipment supplied conforms to the Township of Muskoka Lakes actual specification by circling "yes" or "no" in each column as provided. If prompted, please specify the details of the vehicle in the space provided. For any specific requirements that do not conform to the specifications provided, please circle "no" in the column provided and indicate the manufacturer's actual specification in the space provided on the Specification Sheet. For any specific requirements that do not conform to the specifications provided, please provide additional supporting information on a separate sheet of paper and/or supply product specification information and pamphlets supporting the deviation for review. If a particular manufacturer does not offer a model or option that meets a particular specification in this tender, deviation will be considered at the discretion of the Fire Chief. The Township reserves the right to review all stated deviations to determine acceptance or non-acceptance as best meets the needs of the Township, without penalty.

## FT-2.5 SCHEDULE OF SPECIFICATIONS

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| **PUMPER FIRE APPARATUS – 4 DOOR** | | | | |
| **1.** | **VEHICLE INFORMATION** | | | |
| | Specify year, make, model and estimated date of delivery of the vehicle being tendered.<br><br>Must be a new vehicle in model year that it is delivered. | YEAR:_____<br><br>MAKE:_____<br><br>MODEL:_____<br><br>DELVERY DATE: _____ | | |
| **2.** | **COMMERCIAL MOTOR VEHICLE SAFETY ACT COMPLIANCE:** | | | |
| | Vehicles shall meet or surpass the mandatory requirements of the Canada Motor Vehicle Safety Act and its Regulations in effect on the date of manufacture and the vehicle must bear the National Safety Mark. | YES | NO | |
| **3.** | **MINIMUM VEHICLE SPECIFCATIONS:** | | | |
| | **INTENT OF SPECIFICATIONS**<br><br>It shall be the intent of these specifications to provide a complete apparatus equipped as hereinafter and as specified. With a view to obtaining the best results and the most acceptable apparatus for service in the fire department, these specifications cover only the general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction for all features.<br><br>The bidder shall state the location of the manufacturing facility where the apparatus is to be built and the location of the parent company if a subsidiary of a manufacturer.<br><br>The bidder shall provide satisfactory evidence of their ability to construct the apparatus specified in the bidders manufacturing facilities. | | | |

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| | **BUILDING STANDARDS**<br><br>The fire apparatus shall be built according to the following building standards:<br>CAN/ULC-S515-13 (or most current edition at time of bid submission), National Standard of Canada, Standard for Automobile Fire Fighting Apparatus, Third Edition (2013)<br>NFPA 1901 2016 Edition, National Fire Protection Association, Standard for Automotive Fire Apparatus 2016 Edition, where possible and not in conflict with CAN/ULC-S515-13<br>Transport Canada current regulations and requirements for commercial vehicles, including CMVSS<br>Ontario Highway Traffic Act current regulations and requirements for commercial vehicles | YES | NO | |
| | **PRE-DELIVERY**<br><br>The complete vehicle shall be full interior detailed and exterior cleaned prior to final delivery to the fire department.<br><br>The vehicle shall be fully fueled prior to final delivery to the fire department.<br><br>The vehicle shall have a full DEF tank prior to final delivery to the fire department.<br><br>The vehicle shall have an Ontario Periodic Mandatory Commercial Vehicle Inspection and include all paperwork prior to final delivery to the fire department.<br><br>The vehicle shall include an emissions test prior to ownership transfer to the fire department, as may be required for Ontario ownership transfer.<br><br>The vehicle shall include Ontario permanent emergency vehicle license plates prior to delivery to the fire department. The license plates shall include the municipal fire truck "MFT" code for ownership/license plate purposes. | YES | NO | |

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| | **RUST PROOFING**<br><br>A rust proofing system application shall be applied to the completed fire apparatus prior to delivery to the fire department. The rust proofing system creates a barrier of protection for metals and neutralizes the harmful effects of salt and moisture.<br><br>The rust proofing system must be compatible with other manufacturer rust controls products, either applied annually before or after this treatment. | YES | NO | |
| | **WARNING EQUIPMENT**<br><br>Whelen Engineering Co. warning equipment as stated with associated warranties shall be provided, no exception. | YES | NO | |
| | **FINAL DELIVERY**<br><br>The vehicle shall be delivered to the end-user by dealer staff. Final delivery shall be coordinated ahead of the delivery date, establishing a date/time for estimated arrival.<br><br>The final delivery shall include a brief overview of all aspects of the fire apparatus, unless prior arrangements have been made for more involved familiarization.<br><br>The final delivery shall include ownership transfer with full payment provided by the end-user, either at the time of delivery, ahead of delivery or another previously arranged agreement.<br><br>All agreed upon loose equipment shall be reviewed and confirmed present at final delivery. | YES | NO | |

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| | **ANGLE OF APPROACH**<br><br>The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of the NFPA 1901 Guideline. | YES | NO | |
| | **ANGLE OF DEPARTURE**<br><br>The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of the NFPA 1901 Guideline. | YES | NO | |
| | **NFPA 1901 PUMPER EQUIPMENT ALLOWANCE**<br><br>In compliance with the current NFPA 1901 guidelines, the apparatus shall be engineered to provide and allow for 2500 pounds of fire department loose equipment. | YES | NO | |
| | **ELECTRONIC STABILITY CONTROL**<br><br>Electronic stability control shall be supplied on the chassis. | YES | NO | |
| | **ENGINEERING BLUEPRINTS**<br><br>The manufacturer must submit "proposal" blueprints which are representative of the vehicle being proposed and these have been generated on computer-aided-design (CAD) equipment.<br><br>The blueprints are provided as follows:<br><br>Left side exterior view<br>Right side exterior view<br>Rear exterior view | YES | NO | |
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| | **GENERAL DESIGN**<br><br>The design of the apparatus is in accordance with the best engineering practices. The equipment design and accessory installation shall permit accessibility for use, maintenance and service. All components and assemblies shall be free of hazardous protrusions, sharp edges, cracks or other elements, which might cause injury to personnel or equipment.<br><br>All oil, hydraulic, and air tubing lines and electrical wiring shall be located in protective positions properly attached to the frame or body structure and shall have protective loom or grommets at each point where they pass through structural members, except where a through-frame connector is necessary.<br><br>Parts and components will be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure. Whenever functional layout of operating components determines that physical or visual interference between items cannot be avoided, the item predicted to require the most maintenance shall be located for best accessibility. | YES | NO | |
| | **ISO COMPLIANCE**<br><br>The manufacturer shall operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the "International Organization for Standardization (ISO)" specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid. | YES | NO | NO EXCEPTION ALLOWED |

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| | **BODY WARRANTY**<br><br>The manufacturer will warrant each new motorized fire apparatus manufactured by the manufacturer for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.<br><br>Under this warranty the manufacturer will agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of the manufacturer, made available for our inspection at our request, returned to our location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.<br><br>The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.<br><br>This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.<br><br>This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on the manufacturers part. | YES | NO | |

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| | **ALUMINUM BODY WARRANTY - FIVE YEAR**<br><br>The manufacturer will warrant to the original purchaser only, that the all-aluminum body, fabricated by The manufacturer, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) years.<br><br>The manufacturer will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If The manufacturer elects to repair this body, the extent of such repair shall be determined solely by The manufacturer, and shall be performed solely at the manufacturer factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty. | YES | NO | |
| | **GALVANIZED SUBFRAME WARRANTY**<br><br>Subject to the provisions, limitations and conditions set forth in this warranty, The manufacturer (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new hot dip galvanized body subframe (exclusive of paint finish and hardware) is structurally sound and free of all structural defects of both material and workmanship and further warrants that it will maintain such structural integrity for the duration of ownership by the original purchaser. This warranty terminates upon transfer of possession or ownership by the original purchaser. | YES | NO | |

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| | **PAINT WARRANTY - FIVE YEAR**<br><br>The manufacturer paint performance guarantee will cover the vehicle for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser.<br><br>The full apparatus body, manufactured and painted by The manufacturer, shall be covered for the following paint failures as outlined on the guarantee certificate:<br><br>•Peeling or delaminating of the topcoat and/or other layers of paint.<br>•Cracking or checking.<br>• Loss of gloss caused by cracking, checking, or hazing. | YES | NO | |
| | **FIRE PUMP WARRANTY**<br><br>A ten (10) year warranty for the fire pump shall be provided. | YES | NO | NO EXCEPTION ALLOWED |
| | **STAINLESS-STEEL PLUMBING WARRANTY**<br><br>The manufacturer shall provide a ten (10) year warranty on the stainless-steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission. | YES | NO | |
| | **WATER/FOAM TANK WARRANTY**<br><br>The Manufacturer warrants each tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). | YES | NO | |

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| | **BODY MANUAL - PRINTED WITH DIGITAL COPY**<br><br>The manufacturer shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle.<br><br>Within each section shall be:<br>•Individual component manufacturer instruction and parts manuals<br>•Warranty forms for the body<br>•Warranty forms for all major components<br>•Warranty instructions and format to be used in compliance with warranty obligations<br>•Wiring diagrams<br>•Installation instruction and drawings for major parts<br>•Visual graphics and electronic photos for the installation of major parts<br>•Necessary normal routine service forms, publications and components of the body portion of the apparatus<br>•Technical publications for training and instruction on major body components<br>•Warning and safety related notices for personnel protection<br>•Cab and chassis manuals on parts, service and maintenance shall be provided | YES | NO | |
| | **FREIGHTLINER CHASSIS**<br><br>A Freightliner 4-door chassis per the following specifications shall be furnished: | YES | NO | |

**FREIGHLINER CHASSIS**

**Vehicle Configuration**

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| 001-172 | M2 106 PLUS CONVENTIONAL CHASSIS |
| 004-224 | 2025 MODEL YEAR SPECIFIED |
| 002-004 | SET BACK AXLE - TRUCK |
| 019-004 | STRAIGHT TRUCK PROVISION, NON-TOWING |
| 003-001 | LH PRIMARY STEERING LOCATION |

**General Service**

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| AA1-002 | TRUCK CONFIGURATION |
| AA6-003 | DOMICILED, CANADA (OTHER THAN QUEBEC) |
| RCE-00F | FIXED CANADIAN EXCHANGE |
| A85-020 | FIRE SERVICE |

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| A84-1EV | EMERGENCY VEHICLES BUSINESS SEGMENT |
| AA4-002 | LIQUID BULK COMMODITY |
| AA5-002 | TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS |
| AB1-008 | MAXIMUM 8% EXPECTED GRADE |
| AB5-001 | SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE |
| 995-091 | MEDIUM TRUCK WARRANTY |
| A66-99D | EXPECTED FRONT AXLE(S) LOAD : 14600.0 lbs |
| A68-99D | EXPECTED REAR DRIVE AXLE(S) LOAD : 26000.0 lbs |
| A63-99D | EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 40600.0 lbs |
| **Truck Service** | |
| AA3-027 | FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP |
| AF7-99D | EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in |
| **Engine** | |
| 101-2NB | DD8 7.7L 6 CYL DUAL STAGE 350 HP @ 2200 RPM, 2600 GOV RPM, 1050 LB-FT @ 1200 RPM |
| **Electronic Parameters** | |
| 79A-068 | 68 MPH ROAD SPEED LIMIT |
| 79B-000 | CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT |
| 79F-013 | FLEET MANAGEMENT - DAILY ENGINE USAGE ENABLED |
| 79K-007 | PTO MODE ENGINE RPM LIMIT - 1100 RPM |
| 79P-032 | PTO RPM CONTROL WITH STEERING WHEEL SWITCHES |
| 79S-001 | PTO MODE CANCEL VEHICLE SPEED - 5 MPH |
| 79T-002 | PTO MODE RPM INCREMENT - 50 RPM |
| 79U-007 | PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND |
| 79V-001 | FUEL DOSING OF AFTERTREATMENT ENABLED IN PTO MODE-CLEANS HYDROCARBONS AT HIGH TEMPERATURES ONLY |
| 79W-008 | ONE DASH MOUNTED PTO SPEED WITH PTO SWITCH ENGAGEMENT |
| 79X-008 | PTO SPEED 1 SETTING - 1100 RPM |
| 80G-002 | PTO MINIMUM RPM - 700 |
| 80L-001 | ENABLE AUTO ENGINE RPM ELEVATE FOR EXTENDED IDLE |
| 80S-002 | PTO 1, DASH SWITCH, ROLLING OPERATION (ENGAGE WHILE PARKED, ROLL IN NEUTRAL AFTER ENGAGEMENT) |
| **Engine Equipment** | |
| 99C-021 | 2010 EPA/CARB/GHG21 CONFIGURATION |
| 99D-010 | NO 2008 CARB EMISSION CERTIFICATION |
| 13E-001 | STANDARD OIL PAN |
| 105-001 | ENGINE MOUNTED OIL CHECK AND FILL |
| 014-1BX | SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER |
| 124-1E7 | DR 12V 275 AMP 40-SI BRUSHLESS PAD ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE |
| 292-206 | (3) DTNA GENUINE, FLOODED STARTING, MIN 2850CCA, 525RC, 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 |

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| 289-001 | NON-POLISHED BATTERY BOX COVER |
| 293-060 | POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH WITH LOCKING PROVISION MOUNTED OUTBOARD DRIVER SEAT |
| 295-029 | POSITIVE AND NEGATIVE POSTS FOR JUMPSTART LOCATED ON FRAME NEXT TO STARTER |
| 306-015 | PROGRESSIVE LOW VOLTAGE DISCONNECT AT 12.3 VOLTS FOR DESIGNATED CIRCUITS |
| 107-047 | WABCO 20.0 CFM SINGLE CYLINDER AIR COMPRESSOR |
| 108-002 | STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR |
| 131-013 | AIR COMPRESSOR DISCHARGE LINE |
| 152-039 | GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING |
| 128-1A7 | DETROIT MD COMPRESSION BRAKE WITH ON/OFF SWITCH |
| 016-1DC | RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES |
| 28F-014 | ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD REGENERATION AND VIRTUAL REGENERATION REQUEST SWITCH IN CLUSTER |
| 239-001 | STANDARD EXHAUST SYSTEM LENGTH |
| 237-022 | RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES |
| 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 |
| 273-059 | ELECTRONICALLY CONTROLLED VARIABLE SPEED VISCOUS FAN DRIVE |
| 276-002 | AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT, NON ENGINE MOUNTED |
| 110-077 | DETROIT ENGINE MOUNTED FUEL/WATER SEPARATOR WITH WATER-IN-FUEL SENSOR AND ESOC |
| 118-001 | FULL FLOW OIL FILTER |
| 266-101 | 900 SQUARE INCH ALUMINUM RADIATOR |
| 103-040 | ANTIFREEZE TO -60F, OAT (NITRITE AND SILCATE FREE) EXTENDED LIFE COOLANT |
| 171-007 | GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT |
| 172-001 | CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES |
| 270-016 | RADIATOR DRAIN VALVE |
| 168-002 | LOWER RADIATOR GUARD |
| 134-001 | ALUMINUM FLYWHEEL HOUSING |
| 155-070 | DELCO 12V 35MT STARTER WITH INTEGRATED MAGNETIC SWITCH AND SOLENOID |
| **Transmission** | |
| 342-1KD | ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION |
| **Transmission Equipment** | |
| 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 |

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| 84C-023 | PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY |
| 84D-023 | SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, 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 |
| 84N-200 | FUEL SENSE 2.0 DISABLED - PERFORMANCE - TABLE BASED |
| 84U-000 | DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES |
| 353-075 | QUICKFIT BODY LIGHTING CONNECTOR AT END OF FRAME, WITH CAP |
| 34C-011 | ELECTRONIC TRANSMISSION WIRING TO CUSTOMER INTERFACE CONNECTOR |
| 362-823 | CUSTOMER INSTALLED CHELSEA 280 SERIES PTO |
| 363-001 | PTO MOUNTING, LH SIDE OF MAIN TRANSMISSION ALLISON |
| 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 |
| 346-003 | TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK |
| 35T-001 | SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT) |
| **Front Axle and Equipment** | |
| 400-1A8 | DETROIT DA-F-14.7-3 14,700# 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 |
| 419-001 | CAST IRON OUTBOARD FRONT BRAKE DRUMS |
| 427-001 | FRONT BRAKE DUST SHIELDS |
| 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 |
| 405-002 | MERITOR AUTOMATIC FRONT SLACK ADJUSTERS |
| 536-012 | TRW TAS-85 POWER STEERING |
| 539-003 | POWER STEERING PUMP |
| 534-015 | 2 QUART SEE THROUGH POWER STEERING RESERVOIR |
| 40T-002 | CURRENT AVAILABLE SYNTHETIC 75W-90 FRONT AXLE LUBE |

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| **Front Suspension** | |
| 620-010 | 14,600# TAPERLEAF FRONT SUSPENSION |
| 619-005 | MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION |
| 410-001 | FRONT SHOCK ABSORBERS |
| **Rear Axle and Equipment** | |
| 420-022 | RS-26-185 26,000# T-SERIES SINGLE REAR AXLE |
| 421-586 | 5.86 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 |
| 452-001 | DRIVER CONTROLLED TRACTION DIFFERENTIAL - SINGLE REAR AXLE |
| 878-018 | (1) DRIVER CONTROLLED DIFFERENTIAL LOCK REAR VALVE FOR SINGLE DRIVE AXLE |
| 87B-024 | INDICATOR LIGHT FOR EACH DIFFERENTIAL LOCKOUT SWITCH, ENGAGE AT SPEEDS 5 MPH OR LESS, DISENGAGE W/IGN OFF OR SPEEDS EXCEEDING 25 MPH |
| 423-039 | MERITOR 16.5X7 Q+ CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR HEAVY DUTY BRAKE AND SHOES |
| 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 |
| 425-002 | REAR BRAKE DUST SHIELDS |
| 440-006 | REAR OIL SEALS |
| 426-074 | HALDEX GOLDSEAL LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS |
| 428-003 | HALDEX AUTOMATIC REAR SLACK ADJUSTERS |
| 41T-002 | CURRENT AVAILABLE SYNTHETIC 75W-90 REAR AXLE LUBE |
| **Rear Suspension** | |
| 622-1DC | 26,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD |
| 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 |
| 490-121 | WABCO 4S/4M ABS WITH TRACTION CONTROL |
| 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-002 | STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM |
| 413-002 | STD U.S. FRONT BRAKE VALVE |
| 432-003 | RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE |
| 480-086 | BW AD-9SI BRAKE LINE AIR DRYER WITH HEATER |
| 479-003 | AIR DRYER MOUNTED INBOARD ON LH RAIL |
| 460-058 | STEEL AIR TANKS MOUNTED AFT INSIDE AND/OR BELOW FRAME JUST FORWARD OF REAR SUSPENSION |
| 477-004 | PULL CABLES ON ALL AIR RESERVOIR(S) |

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| **Wheelbase & Frame** | |
| 545-622 | 6225MM (245 INCH) WHEELBASE |
| 546-101 | 11/32X3-1/2X10-15/16 INCH STEEL FRAME (8.73MMX277.8MM/0.344X10.94 INCH) 120KSI |
| 547-001 | 1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT |
| 552-027 | 1500MM (59 INCH) REAR FRAME OVERHANG |
| 55W-005 | FRAME OVERHANG RANGE: 51 INCH TO 60 INCH |
| AC8-99D | CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 132.28 in |
| AE8-99D | CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 129.28 in |
| AE4-99D | CALC'D FRAME LENGTH - OVERALL : 343.16 in |
| FSS-0LH | CALCULATED FRAME SPACE LH SIDE : 126.93 in |
| FSS-0RH | CALCULATED FRAME SPACE RH SIDE : 117.28 in |
| 553-001 | SQUARE END OF FRAME |
| 550-001 | FRONT CLOSING CROSSMEMBER |
| 559-001 | STANDARD WEIGHT ENGINE CROSSMEMBER |
| 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** | |
| 556-1AR | THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE ENDS |
| 558-001 | FRONT TOW HOOKS - FRAME MOUNTED |
| 574-001 | BUMPER MOUNTING FOR SINGLE LICENSE PLATE |
| 586-024 | FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS |
| 551-007 | GRADE 8 THREADED HEX HEADED FRAME FASTENERS |
| 44Z-002 | EXTERIOR HARNESSES WRAPPED IN ABRASION TAPE |
| 605-117 | LEVEL FRAME RAILS (+/- 1%) WHEN CHASSIS IS LOADED TO FRONT AND REAR SUSP RATINGS AND D15-28195-000 CENTER PUNCH TO MARK CL OF REAR SUSP ON FRAME FLANGE |
| 970-038 | TANK BODY 0 TO 1500 GALLONS |
| 607-001 | CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD |
| **Fuel Tanks** | |
| 204-152 | 70 GALLON/264 LITER ALUMINUM FUEL TANK - LH |
| 218-001 | 23 INCH DIAMETER 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) |
| 122-1H1 | DETROIT FUEL/WATER SEPARATOR WITH BYPASS |
| 216-020 | EQUIFLO INBOARD FUEL SYSTEM |
| 202-016 | HIGH TEMPERATURE REINFORCED NYLON FUEL LINE |
| **Tires** | |
| 093-994 | MICHELIN XZE 12R22.5 16 PLY RADIAL FRONT TIRES |
| 094-0GR | MICHELIN XDN2 12R22.5 16 PLY RADIAL REAR TIRES |
| **Hubs** | |
| 418-060 | CONMET PRESET PLUS PREMIUM IRON FRONT HUBS |
| 450-060 | CONMET PRESET PLUS PREMIUM IRON REAR HUBS |
| **Wheels** | |

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| 502-735 | ACCURIDE 43644 ACCU-LITE 22.5X8.25 10-HUB PILOT 5.79 INSET ALUMINUM DISC FRONT WHEELS |
| 505-736 | ACCURIDE 43644 ACCU-LITE 22.5X8.25 10-HUB PILOT ALUMINUM DISC REAR WHEELS |
| 524-002 | POLISHED FRONT WHEELS; INSIDE AND OUTSIDE |
| 525-002 | POLISHED REAR WHEELS; OUTSIDE AND INSIDE (BOTH SIDES) |
| 496-011 | FRONT WHEEL MOUNTING NUTS |
| 497-011 | REAR WHEEL MOUNTING NUTS |
| **Cab Exterior** | |
| 829-079 | 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB |
| 650-008 | AIR CAB MOUNTING |
| 648-002 | NONREMOVABLE BUGSCREEN MOUNTED BEHIND GRILLE |
| 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 |
| 690-017 | HOOD LINER, ADDED FIREWALL AND FLOOR HEAT INSULATION |
| 727-1B0 | DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS |
| 726-002 | DUAL ELECTRIC HORNS |
| 728-002 | DUAL HORN SHIELDS |
| 575-001 | REAR LICENSE PLATE MOUNT END OF FRAME |
| 312-038 | INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL |
| 302-047 | LED AERODYNAMIC 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 |
| 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 |
| 729-001 | STANDARD SIDE/REAR REFLECTORS |
| 677-055 | RH AFTERTREATMENT SYSTEM CAB ACCESS WITH POLISHED DIAMOND PLATE COVER |
| 768-043 | 63X14 INCH TINTED REAR WINDOW |
| 661-003 | TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS |
| 654-011 | RH AND LH ELECTRIC POWERED WINDOWS |
| 663-013 | 1-PIECE SOLAR GREEN GLASS WINDSHELD |
| 659-019 | 2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED |
| **Cab Interior** | |
| 055-019 | RUGGED TRIM PACKAGE |
| 707-107 | GRAY & CARBON VINYL INTERIOR "RUGGED" |
| 70K-020 | CARBON WITH PREMIUM GUNMETAL ACCENT (RUGGED) |
| 706-013 | MOLDED PLASTIC DOOR PANEL |
| 708-013 | MOLDED PLASTIC DOOR PANEL |
| 772-006 | BLACK MATS WITH SINGLE INSULATION |

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| 785-026 | (1)DASH MOUNTED 12V POWER OUTLET (1)DASH MOUNTED DUAL 2.1 AMP USB-C CHARGER |
| 691-001 | FORWARD ROOF MOUNTED CONSOLE |
| 693-019 | LH AND RH DOOR STORAGE POCKETS INTEGRATED INTO MOLDED DOOR PANELS |
| 738-021 | DIGITAL ALARM CLOCK IN DRIVER DISPLAY |
| 742-007 | (2) CUP HOLDERS LH AND RH DASH |
| 680-029 | M2/SD DASH |
| 700-002 | HEATER, DEFROSTER AND AIR CONDITIONER |
| 701-001 | STANDARD HVAC DUCTING |
| 703-005 | MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH |
| 170-015 | STANDARD HEATER PLUMBING |
| 130-041 | VALEO HEAVY DUTY A/C REFRIGERANT 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 |
| 324-1B2 | PREMIUM LED CAB LIGHTING |
| 657-001 | DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME |
| 78G-004 | KEY QUANTITY OF 4 |
| 655-005 | LH AND RH ELECTRIC DOOR LOCKS |
| 756-1E7 | SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR |
| 760-1E9 | SEATS INC 911 UNIVERSAL SERIES SCBA NON SUSPENSION PASSENGER SEAT WITH UNDERSEAT STORAGE AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR |
| 762-1E9 | SEATS INC 911 UNIVERSAL SERIES SCBA NON SUSPENSION LH, RH AND CENTER REAR PASSENGER SEATS WITH UNDER SEAT STORAGE AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR |
| 711-004 | LH AND RH INTEGRAL DOOR PANEL ARMRESTS |
| 758-036 | VINYL WITH VINYL INSERT DRIVER SEAT |
| 761-036 | VINYL WITH VINYL INSERT PASSENGER SEAT |
| 755-036 | VINYL WITH VINYL INSERT REAR PASSENGER SEAT |
| 763-105 | NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS |
| 532-002 | ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN |
| 540-070 | 4-SPOKE 18 INCH (450MM) LEATHER WRAPPED STEERING WHEEL WITH CHROME SWITCH BEZELS |
| 765-002 | DRIVER AND PASSENGER INTERIOR SUN VISORS |
| **Instruments & Controls** | |
| 81B-003 | DIGITAL PANEL LAMP DIMMER SWITCH IN DRIVER DISPLAY |
| 732-998 | NO INSTRUMENT PANEL-DRIVER |
| 734-022 | FULLY CONFIGURABLE CENTER INSTRUMENT PANELS |
| 870-002 | BRIGHT ARGENT FINISH GAUGE BEZELS |
| 486-001 | LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM |
| 840-001 | DUAL NEEDLE PRIMARY AND SECONDARY AIR PRESSURE GAUGE |
| 198-035 | ELECTRONIC AIR RESTRICTION INDICATOR DISPLAYED IN DRIVER DISPLAY |
| 721-001 | 97 DB BACKUP ALARM |
| 149-015 | ELECTRONIC CRUISE CONTROL WITH CONTROLS ON STEERING WHEEL SPOKES |
| 156-020 | IGNITION SWITCH WITH NON REMOVABLE KEY |
| 811-044 | PREMIUM INSTRUMENT CLUSTER WITH 5.0 INCH COLOUR DISPLAY |

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| 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 |
| 48H-003 | QUICKFIT POWERTRAIN INTERFACE CONNECTOR UNDER CAB WITH CAPS |
| 48C-003 | QUICKFIT PROGRAMMABLE INTERFACE CONNECTOR(S) UNDER CAB WITH CAP |
| 163-014 | ENGINE REMOTE INTERFACE CONNECTOR AT POWERTRAIN INTERFACE CONNECTOR |
| 856-001 | ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE |
| 854-008 | DIGITAL ENGINE OIL TEMPERATURE IN DRIVER DISPLAY |
| 864-001 | 2 INCH TRANSMISSION OIL TEMPERATURE GAUGE |
| 867-004 | ELECTRONIC OUTSIDE TEMPERATURE SENSOR DISPLAY IN DRIVER MESSAGE CENTER |
| 830-017 | ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY |
| 372-123 | PTO CONTROLS FOR ENHANCED VEHICLE ELECTRIC/ELECTRONIC ARCHITECTURE |
| 49B-006 | ELECTRONIC STABILITY CONTROL,4X2 W/SAFETY MIN BODY WEIGHT EXCEEDS 4,000LBS REQ |
| 852-002 | ELECTRIC ENGINE OIL PRESSURE GAUGE |
| 679-998 | NO OVERHEAD INSTRUMENT PANEL |
| 35M-010 | QUICKFIT PROGRAMMABLE INTERFACE MODULE |
| 786-119 | NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY |
| 74D-006 | STANDARD RADIO WIRING WITH STEERING WHEEL CONTROLS |
| 810-028 | ELECTRONIC KPH SPEEDOMETER WITH SECONDARY MPH SCALE, WITHOUT ODOMETER |
| 817-001 | STANDARD VEHICLE SPEED SENSOR |
| 812-001 | ELECTRONIC 3000 RPM TACHOMETER |
| 813-1C8 | DETROIT CONNECT PLATFORM HARDWARE |
| 8D1-203 | 3 YEARS DETROIT CONNECT BASE PACKAGE (FEATURES VARY BY MODEL) DETROIT CONNECT PLATFORM |
| 6TS-005 | TMC RP1226 ACCESSORY CONNECTOR LOCATED BEHIND PASSENGER SIDE REMOVEABLE DASH PANEL |
| 162-002 | IGNITION SWITCH CONTROLLED ENGINE STOP |
| 81Y-006 | PRE-TRIP INSPECTION FEATURE FOR EXTERIOR LAMPS AND SERVICE BRAKES |
| 264-032 | (2) OVERHEAD MOUNTED LANYARD CONTROLS: (1) OFFICER AIR HORN AND (1) DRIVER AIR HORN |
| 836-015 | DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY |
| 660-008 | SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY |
| 304-030 | ROTARY HEADLAMP SWITCH, MARKER LIGHTS/HEADLIGHTS SWITCH WITH PULL OUT FOR OPTIONAL FOG/ROAD LAMPS |
| 882-018 | ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR |
| 299-020 | SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, HEADLAMP FLASH, WASH/WIPE/INTERMITTENT |
| 298-046 | INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH 40 AMP (20 AMP PER SIDE) TRAILER LAMP CAPACITY |
| **Design** | |
| 065-000 | PAINT: ONE SOLID COLOUR |
| **Colour** | |

980-5Y6 CAB COLOUR A: L0762EY MED RED ELITE EY
986-020 BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT
963-003 STANDARD E COAT/UNDERCOATING

**Certification / Compliance**

996-002 CANADA CMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS

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| | **FLUID DATA PLAQUE- METRIC**<br><br>One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards and stated in metric volumes:<br><br>•Engine oil<br>•Engine coolant<br>•Chassis transmission fluid<br>•Drive axle lubricant<br>•Power steering fluid<br>•Pump transmission lubrication fluid<br>•Other NFPA applicable fluid levels or data as required<br><br>Location shall be in the driver's compartment or on driver's door. | YES | NO | |
| | **DATA AND WARNING LABELS**<br><br>HEIGHT LENGTH & WEIGHT<br>A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area. The measurements shall be stated in metres and kilograms.<br><br>NO RIDE LABEL<br>One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.<br><br>TIRE PRESSURE LABEL<br>A label shall be placed in a visible area that indicates the front and rear tire pressure.<br><br>(continues below..) | YES | NO | |

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| | CAB SEATING POSITION LIMITS<br>One (1) label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.<br><br>HELMET WARNING TAG<br>One (1) label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901. | | | |
| | **REAR TOWING PROVISIONS**<br><br>There shall be two tow eyes furnished under the rear of the body and attached directly to the chassis frame rails. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook. The tow plates shall be painted black. | YES | NO | |
| | **HUB AND LUG NUT COVERS**<br><br>The apparatus shall have chrome or stainless-steel hub and lug nut covers on the front and single rear axles. | YES | NO | |
| | **TIRE PRESSURE INDICATOR**<br><br>There shall be a tire pressure indicator, p/n RWTG1235, at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire. | YES | NO | |
| | **REAR MUD FLAPS**<br><br>One (1) pair of black mud flaps shall be installed behind the rear wheels. | YES | NO | |

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| | **CAB STEPS**<br><br>The driver's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.<br><br>The passenger's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards. | YES | NO | |
| | **SCBA BRACKET**<br><br>Four (4) Zico SCBA bracket, HZ-KD-ULLH, shall be provided for installation in the cab mounted SCBA seat. An NFPA approved cylinder retention strap shall be supplied. | YES | NO | |
| | **LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS**<br><br>The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest federal standards, and the requirements of the applicable NFPA standards.<br><br>All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when | YES | NO | |

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| | good engineering practice requires special construction.<br><br>The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.<br><br>The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. | | | |
| | All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system. | YES | NO | |
| | There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by colour coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.<br><br>The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current | YES | NO | |

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| | rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards. | | | |
| | The electrical system shall include the following:<br><br>•Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.<br>•The electrical wiring shall be harnessed or be placed in a protective loom.<br>•Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.<br>•Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.<br>•A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.<br>•All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. | YES | NO | |
| | The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. | YES | NO | |

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| | All switches shall be appropriately identified as to their function.<br><br>A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake. | YES | NO | |
| | **NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM**<br><br>The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. | YES | NO | |
| | **NFPA REQUIRED DOCUMENTATION**<br><br>The following documentation shall be provided on delivery of the apparatus:<br><br>a. Documentation of the electrical system performance tests required above.<br>b. A written load analysis, including:<br>1. The nameplate rating of the alternator.<br>2. The alternator rating under the conditions.<br>3. Each specified component load.<br>4. Individual intermittent loads. | YES | NO | |
| | **WEATHER RESISTANT ELECTRICAL JUNCTION BOX**<br><br>The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment. | YES | NO | |

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| | **HIGH IDLE SYSTEM**<br><br>There shall be a high idle system furnished and installed on the apparatus. The high idle system shall have an on/off switch located in the chassis on the switch console. The system shall have an interlock that will disable the solenoid if the parking brake is not completely set. | YES | NO | |
| | **ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL – THERMAL COATED**<br><br>Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The panel shall be hinged for access to the connections. All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label. | YES | NO | |
| | **SWITCHES**<br><br>A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console. | YES | NO | |
| | **BINDER STORAGE MODULE**<br><br>One (1) cab storage module shall be provided at the rearward area of the engine enclosure to accommodate a minimum of three (3) 2" three ring binders. The binders shall be stored one (1) wide and three (3) high in the module. The module shall include a nylon safety belt for retaining the binder when not in use. The compartment shall be fabricated of smooth aluminum.<br>The cabinet's exterior finish shall match the interior finish of the chassis cab.<br>The cabinet's interior shall have a natural finish. | YES | NO | |

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| | Two (2) cup holders shall be provided and installed. | | | |
| | **MASTER ELECTRIC SWITCH**<br><br>One (1) battery disconnect switch shall be located on the driver side of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system. | YES | NO | |
| | **BATTERY CHARGER & AIR COMPRESSOR**<br><br>One (1) Kussmaul Pump Plus minimum 1200 model 52-05-1100 battery charger (or equal) and air compressor system shall be installed. The 120 volt compressor system shall be designed to maintain the air pressure in the chassis brake system. The battery charger shall be supplied from a 120 volt shore power receptacle and be a fully automatic high output charging system. The unit shall be mounted in a clean dry area and will be accessible for service. | YES | NO | |
| | **BATTERY CHARGER DISPLAY**<br><br>One (1) Kussmaul 091-199-001 single battery bank voltage display shall be supplied with the charger. | YES | NO | |
| | **AUTO-EJECT**<br><br>A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC | YES | NO | |

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| | circuit after the mating connector is inserted and before the connector is removed. | | | |
| | **SHORE POWER PLUG**<br><br>The shore power plug shall be located in the step area below the left front cab door of the commercial chassis. | YES | NO | |
| | **12 VOLT POWER SOURCE**<br><br>One (1) 12 volt power and ground connection rated at 30 amps shall be provided on the apparatus for the installation of a mobile two-way radio.<br><br>The power source shall be run through the chassis master battery switch and shall be deactivated when the master switch is in the "OFF" position. | YES | NO | |
| | **ENGINE COMPARTMENT LIGHT**<br><br>One (1) 12 volt LED light with switch shall be mounted in the engine enclosure. The control switch shall be mounted on the light head. | YES | NO | |
| | **PUMP ENCLOSURE LIGHTS**<br><br>One (1) LED work light shall be provided in the pump enclosure. The control switch shall be mounted on the light head. | YES | NO | |
| | **130° CAMERA WITH 18 INFRARED ILLUMINATORS & 7" DIGITAL MONITOR**<br><br>A Fire Research inView™ TrueSight™ model BCA111-A00 kit shall include: (1) one 130° camera with 18 infrared illuminators and (1) one 7" TFT LCD Digital colour Monitor. | YES | NO | |

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| | **RADIO ANTENNA BASE**<br><br>One (1) radio antenna base shall be supplied and installed on the apparatus, the antenna coax terminating in the cab console. | YES | NO | |
| | **MARKER LIGHTS**<br><br>LED marker lights shall be installed on the vehicle in conformance to the Canadian Motor Vehicle Safety Standard requirements. | YES | NO | |
| | **LICENSE PLATE BRACKET**<br><br>One (1) stainless-steel license plate bracket shall be provided at the rear of the apparatus. | YES | NO | |
| | **TAIL LIGHTS**<br><br>One (1) pair of Whelen M62BTT LED tail/brake lights shall be provided. The rectangular 4"x6" lights shall be red. | YES | NO | |
| | **TURN SIGNALS**<br><br>One (1) pair of Whelen M62T LED turn signals with populated sequential chevron arrow shall be provided. | YES | NO | |
| | **BACKUP LIGHTS**<br><br>One (1) pair of Whelen Series M62BU LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens colour shall be clear. | YES | NO | |
| | **FOUR LIGHT HOUSING**<br><br>One (1) pair of chrome plated tail light housings shall be supplied. Each housing shall be designed to hold four (4) Whelen M6 rear lights located at the lower rear corners of the body. | YES | NO | |

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| | **MID BODY LED TURN SIGNALS**<br><br>One (1) pair of mid body LED turn signals shall be provided. The location of the turn lights shall be at mid-body near the rear wheel axle. | YES | NO | |
| | **GROUND LIGHTS**<br><br>Each door shall include a Whelen NFPA compliant ground light mounted to the underside of the cab step below each door.<br><br>There shall be LED cab step lights supplied below the chassis cab doors. The lights shall be mounted below the cab doors and illuminate the chassis cab steps. There shall be four (4) LED lights located on each side of the chassis cab.<br><br>There shall be two (2), one each side, Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the rub rail of the pump house.<br><br>There shall be two (2), one each side, Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the rub rail, mid body.<br><br>There shall be two (2) Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the compartments, behind the rear wheels. (cont….)<br>There shall be two (2) Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the rear step.<br><br>Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.<br><br>The ground lighting shall be activated when the parking brake is set.<br><br>The ground lights shall automatically activate when the parking brake is applied | YES | NO | |

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| | and when the vehicle is in reverse. | | | |
| | **SCENE LIGHTS**<br><br>Six (6) Fire Research model SPA900-Q70 surface mount light shall be installed. The light shall be mounted with four (4) screws to a flat surface. It shall be 6 3/4" high by 9" wide and have a profile of less than 1 3/4" beyond the mounting surface. Wiring shall extend from a weatherproof strain relief at the rear of the light.<br><br>The light shall have twenty-four (24) white LEDs that generate a rated 7000 lumens at 12 or 24 volts DC. The lens shall redirect the light along the vehicle and out onto the working area. The light housing shall be aluminum with a chrome coloured bezel.<br><br>SCENE LIGHT LOCATION<br>Two (2) scene lights shall be located on the left side of the apparatus body.<br>The scene light shall be installed on a treadplate mounting plate.<br><br>Two (2) scene lights shall be located on the right side of the apparatus body.<br>The scene light shall be installed on a treadplate mounting plate.<br><br>Two (2) scene lights shall be located on the rear of the apparatus body.<br><br>**SCENE LIGHT SWITCHING**<br><br>One (1) scene light switch with indicator shall be installed on the cab main switch panel and pump operator panel to control the left side scene light(s). The switch shall be labeled "LEFT SCENE". | YES | NO | |

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| | One (1) scene light switch with indicator shall be installed on the cab main switch panel and pump operator panel to control the right side scene light(s). The switch shall be labeled "RIGHT SCENE".<br><br>One (1) scene light switch with indicator shall be installed on the cab main switch panel and pump operator panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".<br><br>The rear scene lights shall activate automatically upon placing the transmission into reverse. | | | |
| | **SCENE LIGHTS**<br><br>The mounting location for the specified light shall be on the rear of the apparatus body.<br><br>Two (2) Whelen Pioneer Super LED model PFH1 single lamp light assembly shall be provided. The light shall draw 6.5 amps. The bulb shall be accessible through the front. The lamphead shall be approximately 3" deep by 4-5/8" high by 8" wide. Lamphead and brackets shall be powder coated white.<br><br>A Fire Research 540 series side mount top raise telescopic light pole shall be provided. The light pole shall extend approximately 40” in height and be anodized aluminum. A knurled twist lock mechanism to secure the extension pole in position shall be included with the pole.<br><br>SCENE LIGHT SWITCHING<br><br>One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the left side scene light(s). The switch shall be labeled "LEFT SCENE".<br><br>One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the right side scene light(s). The switch shall be labeled | YES | NO | |

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| | "RIGHT SCENE". | | | |
| | **OPEN DOOR HAZARD WARNING LIGHT & ALARM**<br><br>One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing rectangular incandescent marker light with a red lens and shall be properly marked and identified.<br>A door open/hazard warning alarm shall be installed. The audible alarm shall activate when an open door is detected upon release of the parking brake. The alarm shall have a distinct noise to avoid conflict with other cab mounted alarms. | YES | NO | |
| | **ELECTRIC SIREN AND CONTROL**<br><br>One (1) Whelen model #295SL101 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone. An Electronic or fixed Q Siren. | YES | NO | |
| | **SPEAKER**<br><br>One (1) Cast Products Model #SA4301 100 watt speaker shall be installed on the apparatus, "Through-the-bumper", with flat mounting flange.<br><br>The siren speaker shall be installed in the left side of the apparatus bumper. | YES | NO | |
| | **LIGHTBAR**<br><br>One (1) Justice 62” Red/Blue/White light bar shall be included with the apparatus cab. The light bar shall be mounted on the roof of the cab, towards the front, above | | | |

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| | the windshield.<br><br>The light bar shall feature:<br>•A 60" light bar designed for high performance<br>•Four (4) red or blue Linear Super LED corner modules<br>•Two (2) red or blue 400 series Liner Super LED lights<br>•Two (2) white 400 series Linear Super LED lights with clear optic lenses<br>•Two (2) clear optic collimators<br>•Clear hard coated lenses to provide extended life/luster protection against UV & chemical stresses<br>•Designed in accordance with NFPA Zone A requirements<br><br>The front upper light bar shall be activated through the master warning switch. | | | |
| | **UPPER REAR WARNING LIGHTS**<br><br>One (1) pair of Whelen Super LED Micro Freedom light bars shall be installed, one each side on the upper rear of the apparatus body. The unit shall have dimensions of 4" high x 7-9/16" deep.<br><br>The driver side warning light shall be a Whelen Micro Freedom LED light, model MCFLED25 with red LED's and a clear lens.<br><br>The officer side warning light shall be a Whelen Micro Freedom LED light, model MCFLED22 with blue LED's and a clear lens. | YES | NO | |
| | **REAR WARNING LIGHT MOUNTING**<br><br>The upper rear lights shall be mounted on the upper corners of the apparatus body, one on each side. | YES | NO | |
| | **LOWER FRONT WARNING LIGHTS**<br><br>One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side one the front of the chassis cab. The dimensions of the lights shall be 4-5/16" x | YES | NO | |

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| | 6-3/4".<br><br>The driver side warning light shall be a Whelen Model M6J split red/blue Super-LEDTM with clear lens.<br><br>The officer side warning light shall be a Whelen Model M6J split red/blue Super-LEDTM with clear lens.<br><br>Each light shall be mounted with a Whelen Model M6FC chrome flange. | | | |
| | **INTERSECTION WARNING LIGHTS**<br><br>One (1) pair of Whelen model M6 LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4-5/16" x 6-3/4".<br><br>The driver side warning light shall be a Whelen Model M6J split red/blue Super-LED$^{TM}$ with clear lens.<br><br>The officer side warning light shall be a Whelen Model M6J split red/blue Super-LED$^{TM}$ with clear lens.<br><br>Each light shall be mounted with a Whelen Model M6FC chrome flange. | YES | NO | |
| | **LOWER MID-BODY WARNING LIGHTS**<br><br>One (1) pair of Whelen model M2 LED warning lights, model M2WJ, shall be installed , one each side of the apparatus, mid-body in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".<br><br>The driver side warning light shall be a Whelen Model M2WJ wide-angle split red/blue Super-LED$^{TM}$ with clear lens.<br><br>The officer side warning light shall be a Whelen Model M2WJ wide-angle split red/blue Super-LED$^{TM}$ with clear lens. | YES | NO | |

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| | **LOWER REAR WARNING LIGHTS**<br><br>One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4-5/16" x 6-3/4".<br><br>The driver side warning light shall be a Whelen Model M6J split red/blue Super-LED$^{TM}$ with clear lens.<br><br>The officer side warning light shall be a Whelen Model M6J split red/blue Super-LED$^{TM}$ with clear lens. | YES | NO | |
| | **TRAFFIC ARROW LIGHT**<br><br>One (1) Whelen Model TAN65 Traffic Advisor shall be installed. The light shall be equipped with six (6) LED lights measuring 34" in length. The unit shall be mounted at the rear of the apparatus body. The Traffic Advisor control head shall be mounted inside the cab and be accessible by the driver and officer.<br><br>The traffic arrow light shall be surface mounted below the rear intermediate step of the apparatus body. | YES | NO | |
| | **SHORELINE RECEPTACLES**<br><br>The following receptacles shall be wired to the shoreline power.<br><br>One (1) 120-volt 15-amp straight blade, 3-prong duplex receptacle with spring loaded weatherproof cover shall be provided, located in the cab/rear of console.<br><br>One (1) 120-volt 15-amp straight blade, 3-prong duplex receptacle with spring loaded weatherproof cover shall be provided, located L3 compartment on the forward wall 12” from the ceiling.<br><br>One (1) 120-volt 15-amp straight blade, 3-prong duplex receptacle with spring loaded weatherproof cover shall be provided, located R3 compartment on the forward wall 12” from the ceiling. | YES | NO | |

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| | **SIDE MOUNT PUMP ENCLOSURE**<br><br>The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.<br><br>All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location. The fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.<br><br>The "master" gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. The individual gauges shall be mounted inline with the control handle or adjacent to the control handle. Panel is to include a stainless-steel piano hinge, flush mounted chrome plated trigger latch, and stainless-steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.<br><br>The following controls and equipment as specified in the specifications, shall be provided on the pump panel or within the pump enclosure:<br><br>•Primer.<br>•Pump and plumbing area service lights.<br>•Pressure control device and throttle control.<br>•Fire pump and engine instruments.<br>•Pump intakes and discharge controls.<br>•Master intake and discharge gauges.<br>•Tank fill control.<br>•Tank suction control.<br>•Water tank level gauge.<br>• Pump panel lights. | YES | NO | |

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| | **CROSSLAY INSTALLATION**<br><br>The area atop the pump enclosure shall be notched for the installation of a crosslay hose bed. The hosebed shall have smooth sides and a perforated floor to allow for drainage. Provisions shall be provided to secure hose and equipment per requirements of applicable NFPA standards. | YES | NO | |
| | **LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL**<br><br>The left side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.<br><br>The running board shall be constructed of aluminum tread plate, bolted in place with stainless-steel fasteners. The step surfaces shall be in compliance with applicable sections of NFPA requirements. | YES | NO | |
| | **RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL**<br><br>The right side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab. | YES | NO | |
| | **PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER**<br><br>A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The door shall be constructed of 14 gauge #304 brushed stainless-steel with push button type latches.<br><br>There shall be an upper step above the access panel. | YES | NO | |
| | **FRONT ACCESS PUMP PANEL**<br><br>A removable front access panel shall be installed on the front of the pump enclosure of the apparatus. The panel shall be constructed of aluminum tread plate and be fastened to the pump enclosure with stainless-steel bolts and nut-serts. (no sheet metal screws) | YES | NO | |

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| | **PUMP PANELS -- SIDE MOUNT**<br><br>The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of 14 gauge #304 brushed stainless-steel and be fastened to the pump enclosure with 1/4" stainless-steel bolts.<br><br>The instrument area shall have a stainless-steel continuous hinge that shall swing for easy access to gauges. | YES | NO | |
| | **HINGED PUMP PANEL -- LEFT SIDE**<br><br>The pump panel installed on the on the left hand side of the pump enclosure shall be hinged with push-button latches. | YES | NO | |
| | **HINGED PUMP PANEL -- RIGHT SIDE**<br><br>The pump panel installed on the on the right hand side of the pump enclosure shall be hinged with push-button latches. | YES | NO | |
| | **PUMP COMPARTMENT HEATER SYSTEM**<br><br>The interior of the pump enclosure shall be equipped with a *minimum* 30,000 BTU hot water heater system. The unit shall be piped to the chassis radiator system with standard heater hose. The hose shall be properly clamped and secured in place, and be properly protected from engine exhaust or mechanical damage.<br><br>The heater unit shall be equipped with a 12-volt blower fan with control located on the pump operator's panel. | YES | NO | |
| | **PUMP ENCLOSURE HEAT PAN**<br><br>A removable casing constructed of aluminum or galvanized steel, completely enclosing the underside of the pump compartment and heated by the engine exhaust shall be provided. The heat pan assembly shall include individual panels that can be easily removed from their mounting locations. The two outer slide-out panels shall be bolted in place. | YES | NO | |

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| | **BODY AND PUMP HOUSE FLEX JOINT RUBBER GASKET**<br><br>A flexible rubber gasket shall be installed between the pump compartment and the apparatus body. This gasket will be designed to seal the pump compartment to the apparatus body as tightly as practical. This gasket is necessary for winter operation in extremely cold climates. | YES | NO | |
| | **LABELS**<br><br>Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.<br><br>The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.<br><br>The labels shall be provided with all information and be attached to the apparatus prior to delivery. | YES | NO | |
| | **COLOUR CODED PUMP PANEL LABELING AND NAMEPLATES**<br><br>Discharge and intake valve controls shall be colour coded in compliance to guidelines of applicable sections of NFPA standards.<br><br>Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls. | YES | NO | |
| | **MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE**<br><br>Three (3) Techiq E10-W0001-1 or equal LED lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel. | YES | NO | |

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| | **MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE**<br><br>Two (2) Tecniq E10-W0001-1 or equal LED lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel. | YES | NO | |
| | **PUMP ENGAGED LIGHT**<br><br>One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel. | YES | NO | |
| | **MASTER GAUGES**<br><br>Two (2) 4-1/2" diameter IC master gauges with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | YES | NO | |
| | **TEST TAPS**<br><br>Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled. | YES | NO | |
| | **WATER TANK GAUGE**<br><br>One (1) Fire Research TankVision Pro model WLA300-A00 or equal tank indicator kit shall be installed on the pump panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.<br><br>The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable coloured light patterns to | YES | NO | |

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| | display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.<br><br>The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors. | | | |
| | **AIR HORN PUSH-BUTTON**<br><br>One (1) push button with a label shall be installed on the pump instrument panel to operate the air horns. | YES | NO | |
| | **HANDRAIL SIDE PUMP PANEL**<br><br>Two (2) extruded aluminum non-slip handrails, approximately 18" in length shall be provided and mounted in best fit locations to maintain 3-points of contact on the right side on the side pump panel/upper body. | YES | NO | |
| | **DARLEY PSM SINGLE STAGE PUMP**<br><br>A Darley model PSM (NO EXCEPTION) single stage split-drive shaft driven fire pump shall be provided and installed.<br><br>The pump shall be midship mounted and designed to operate through an integral transmission, including a means for power selectivity to the driving axle or to the pump. The pump shall be driven by a driveline from the chassis transmission. The engine, transmission and driveline components shall provide sufficient horsepower and RPM to enable the pump to meet and exceed its rated performance.<br><br>The pump shall contain a cored heating jacket feature that, if selected, can be connected into the vehicle antifreeze system to protect the pump from freezing in cold climates, and to help reject engine heat from engine coolant, providing longer life for the engine.<br>PUMP SHAFT | YES | NO | |

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| | The pump shaft shall be precision ground stainless-steel with long wearing Chromium Oxide hard coating under the packing glands with a hardness level of Rockwell C72. The shaft shall be splined to receive broached impeller hubs, for greater resistance to wear, torsion vibration, and torque imposed by engine, as well as ease of maintenance and repair.<br><br>The bearings provided shall be heavy duty, deep groove, radial type ball bearings. Sleeve bearings on any portion of the pump or transmission shall be prohibited due to wear, deflection, and alignment concerns. The bearings shall be protected at all openings from road dirt and water splash with oil seals and water slingers.<br><br>IMPELLER<br><br>The impeller shall be a high strength bronze alloy of mixed flow design, splined to the pump shaft for precision fit, durability, and ease of maintenance. Impeller shall be vacuum cast designed for maximum lift and highest capacity. The seal rings shall be renewable, double labyrinth, wrap around bronze type.<br><br>Impeller shaft oil seals shall be constructed to be free from steel components except for the internal lip spring. The impeller shaft oil seals shall carry a lifetime warranty against damage from corrosion from water and other fire-fighting fluids.<br><br>PUMP TRANSMISSION<br><br>The transmission case shall be heavy duty cast iron. A magnetic drain plug shall be provided. Transmission case shall include a dip stick for checking oil level. Transmission case interior shall be powder coated to reduce oil contamination. Transmission case shall be equipped with a removable plate for quick inspection of gears, shafts, and bearings inside the transmission.<br><br>The pump drive shaft shall be precision ground, heat treated alloy steel, with a minimum 2-1/2" x 10" spline. The net through-torque rating of the gearbox shall | | | |

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| | exceed 19,000 foot pounds. Gears shall be helical design, and shall be precision ground for quiet operation and extended life. The gears shall be manufactured from alloy steel and carburized for surface hardness and strength.<br><br>The pump clutch gear shall be a heat treated alloy-steel splined spur gear to engage either the pump drive gear or the truck drive shaft gear, and shall have bullet-nosed teeth to reduce the possibility of a butt-tooth condition. The pump clutch gear shall be separate from the main drive gear in order to maintain the greatest precision for driving the pump gear train. The pump transmission shall require no further lubrication beyond that provided by the intrinsic action of the gears, to reduce the likelihood of failure due to loss of auxiliary lubrication.<br><br>DRIVELINE INSTALLATION<br><br>The chassis drivelines shall be sized for intended application and torque requirements. The installation shall comply with driveline manufacturer's guidelines.<br><br>MANUALS<br><br>Two (2) manuals covering the fire pump transmission and fire pump shall be provided with the apparatus. | | | |
| | **6000 LPM FIRE PUMP SPECIFICATIONS**<br><br>The fire pump shall be a DARLEY model PSM midship mounted with a rated capacity of 6000 LPM (Litres per minute). The pump shall meet current ULC-S515 requirements.<br><br>The pump shall be certified to meet the following deliveries:<br>6600 LPM @ 1150 kPa<br>6000 LPM @ 1000 kPa<br>4200 LPM @ 1350 kPa<br>3000 LPM @ 1700 kPa | YES | NO | |
| | **LEFT SIDE -- 6" UNGATED INTAKE**<br><br>One (1) 6" ungated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST. The intake shall be provided with a removable | YES | NO | |

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| | screen.<br><br>One (1) 6" aluminum plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles. | | | |
| | **RIGHT SIDE -- 6" UNGATED INTAKE**<br><br>One (1) 6" ungated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply. The intake shall be provided with a removable screen.<br><br>One (1) 6" aluminum plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles. | YES | NO | |
| | **MECHANICAL SEAL SPECIFICATIONS**<br><br>The mechanical seal shall be formed from silicon carbide with welded springs. The stationary face of the mechanical seals shall be made from silicon carbide, an extremely hard and heat dissipative material, which resists wear and dry running damage. | YES | NO | |
| | **ELECTRIC/PNEUMATIC PUMP SHIFT SPECIFICATIONS**<br><br>An air powered pump shift shall be installed in the cab driver's area where not subject to accidental engagement. The pump shift shall be air operated and shall incorporate an air cylinder with an electric actuated switch to shift from road to pump and back. The apparatus pump shift shall be engaged only when apparatus is in a stationary position and the parking brake is engaged.<br><br>The following indicator lights shall be included with pump shift.<br><br>1. A green indicator light, labeled "PUMP ENGAGED" shall indicate pump shift has successfully been completed.<br><br>2. A green indicator light, labeled "OK TO PUMP" shall indicate the chassis transmission is in pump gear and parking brake is engaged.<br><br>3. Pump shift and interlocks shall comply | YES | NO | |

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| | with applicable sections of NFPA standards.<br><br>4. The pump shift shall have an instruction label and nameplate to indicate function and proper operation. | | | |
| | **TRIDENT PRIMER – AUTOMATIC**<br><br>An automatic fire pump priming system shall be provided and installed. The system shall be oil-less type and environmentally safe. Once engaged, the system shall be fully automatic and not require any action from the pump operator/engineer when pump draft is lost. This feature provides an additional safety margin by maintaining pump flow from the available water source automatically during drafting operations. When air is introduced during a drafting operation from conditions such as whirlpools or turbulence from porta-tank refill operations, the priming system shall automatically engage to remove the air and stabilize water flow and pump pressure. For additional safety, the entire system shall operate at less than 70dBA of ambient noise.<br><br>The priming system shall engage automatically whenever the pump discharge falls below five (5) psi and shall remain engaged until a pump prime has been achieved. The priming system shall automatically disengage when a positive pump discharge pressure has been established. The electrical current draw from the chassis batteries shall not exceed four (4) amps at any given time of operation and allow for unlimited run time without causing an overheat condition for of any of the system components.<br><br>A single engagement switch shall be provided on the pump control panel that will allow the operator to engage the automatic pump priming system. There shall be a light provided on the pump control panel to indicate when the system is engaged. The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall | YES | NO | |

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| | comply with applicable sections of NFPA standards. | | | |
| | **PRIMER CONTROL**<br><br>A rocker switch control shall be provided on the pump operator's panel, for the main pump primer control. | YES | NO | |
| | **PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING**<br><br>One (1) Fire Research InControl series TGA400 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 5 1/2" high by 10 1/2" wide by 2" deep. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.<br><br>The following continuous displays shall be provided:<br>•Pump discharge; shown with four daylight bright LED digits more than 1/2" high<br>•Pump Intake; shown with four daylight bright LED digits more than 1/2" high<br>•Pressure / RPM setting; shown on a dot matrix message display<br>•Pressure and RPM operating mode LEDs<br>•Throttle ready LED<br>•Engine RPM; shown with four daylight bright LED digits more than 1/2" high<br>•Check engine and stop engine warning LEDs<br>•Oil pressure; shown on a dual colour (green/red) LED bar graph display<br>•Engine coolant temperature; shown on a dual colour (green/red) LED bar graph | YES | NO | |

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| | display<br>•Transmission Temperature: shown on a dual colour (green/red) LED bar graph display<br>•Battery voltage; shown on a dual colour (green/red) LED bar graph display.<br><br>The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.<br><br>The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:<br>•High Battery Voltage<br>•Low Battery Voltage (Engine Off)<br>•Low Battery Voltage (Engine Running)<br>•High Transmission Temperature<br>•Low Engine Oil Pressure<br>•High Engine Coolant Temperature<br>•Out of Water (visual alarm only)<br>•No Engine Response (visual alarm only).<br><br>The program features shall be accessed via push buttons and a control knob located on the front of the control panel. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.<br><br>Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show pressures from -30 in. Hg to 600 psi.<br><br>The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the | | | |

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| | operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.<br><br>The pressure governor, monitoring and master pressure display shall be programmed to interface with a specific engine. | | | |
| | **PUMP ANODES**<br><br>There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens. | YES | NO | |
| | **PUMP PLUMBING SYSTEM**<br><br>The fire pump plumbing system shall be of rigid stainless-steel pipe or flexible piping with stainless-steel fittings. Mechanical grooved couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless-steel or mechanical grooved coupling connections.<br><br>The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards. The test results shall be included in the delivery documentation. | YES | NO | |
| | **FIRE PUMP MASTER DRAIN**<br><br>The fire pump plumbing system and fire pump shall be piped to a single pump panel mounted 'handwheel' type master pump drain assembly. The master drain valve shall be a bronze master drain with a rubber disc seal, a universal joint and a handwheel control on the pump panel. The master drain shall also provide for low point drainage of the fire pump and auxiliary devices. | YES | NO | |

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| | **ADDITIONAL LOW POINT DRAINS**<br><br>The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled for exact location. | YES | NO | |
| | **STAINLESS-STEEL INTAKE MANIFOLD**<br><br>The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless-steel. All threaded fittings shall be a minimum of Schedule 10 stainless-steel. The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The stainless-steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.<br><br>The stainless-steel manifold assembly shall have a ten (10) year warranty. | YES | NO | |
| | **STAINLESS-STEEL DISCHARGE MANIFOLD**<br><br>The discharge manifold assembly shall be fabricated with minimum of Schedule #10 Type 304 stainless-steel. All threaded fittings shall be a minimum of Schedule #40 stainless-steel. The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation. The stainless-steel manifold inlet shall be attached to the pump discharge and have additional brackets as required to support the discharge manifold, valves and related components.<br><br>The stainless-steel manifold assembly shall have a ten (10) year warranty. | YES | NO | |
| | **PLUMBING PAINTING**<br><br>The plumbing system shall be unpainted. | YES | NO | |

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| | **HOSE THREADS**<br><br>The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges. | YES | NO | |
| | **WATER TANK TO PUMP LINE**<br><br>One (1) 3" water tank to the rear mounted fire pump line shall be provided with a full flow quarter turn ball valve, 4" piping, and with flex hose and stainless-steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.<br><br>The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.<br><br>The tank to pump valve shall be controlled at the pump operator's panel.<br><br>The valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>The valve shall be equipped with one (1) manually operated, pull rod with quarter-turn locking feature. The handle shall be equipped with a colour-coded name plate. | YES | NO | |
| | **FIRE PUMP TO WATER TANK FILL LINE**<br><br>One (1) 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.<br><br>The valve shall be an Elkhart two-inch (2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The | YES | NO | |

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| | valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>The valve shall be equipped with one (1) manually operated, pull rod with quarter-turn locking feature. The handle shall be equipped with a colour-coded name plate. | | | |
| | **FIRE PUMP SPLIT SHAFT DRIVESHAFTS AND INSTALLATION**<br><br>The mid-ship split shaft fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The drive shaft(s) shall be spin balanced prior to final installation. | YES | NO | |
| | **INTAKE RELIEF/DUMP VALVE**<br><br>One (1) Elkhart or TFT 40 or equal, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.<br><br>Discharge side of the intake relief valve shall be plumbed away from the pump operator. | YES | NO | |
| | **FIRE PUMP COOLING**<br><br>The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use. | YES | NO | |
| | **CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM**<br><br>The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. | YES | NO | |

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| | The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant.<br><br>A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted. | | | |
| | **CANADIAN UNDERWRITERS LABORATORIES CERTIFICATION**<br>The apparatus shall undergo a Canadian Underwriters Laboratories Incorporated inspection and test per current ULC standards, prior to delivery of the completed apparatus. These tests shall include pump, tank, weight, brake, and other applicable ULC inspection and testing. The test shall be performed on site by UL/ULC staff and shall include a listing of the apparatus as a fire fighting appliance. The manufacturer shall be ULC certified as a listed fire firefighting appliance manufacturer.<br><br>The ULC acceptance certificate and listing label shall be furnished with the apparatus on delivery. | YES | NO | |
| | **FIRE ULC PUMP TEST**<br><br>The pump shall tested in LPM (Liters per Minute). | YES | NO | |
| | **LEFT SIDE -- 2-1/2" GATED INTAKE**<br><br>One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" CSA female thread of chrome plated brass.<br><br>The intake shall be equipped with a ¾" drain and bleeder valve. A nameplate label and removable screen shall be installed.<br><br>An Innovative Controls ¾” cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close. | YES | NO | |

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| | One (1) 2-1/2" plug shall be provided. The threads shall be CSA and the plug shall be equipped rocker lugs and chain or cable securement.<br><br>The valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>The valve shall be equipped with one (1) manually operated, swing-type manual control located adjacent the intake. The control handle shall be equipped with self-locking feature. The valve shall be equipped with a colour-coded name plate. | | | |
| | **TWO (2) 1-1/2" CROSSLAY DISCHARGES**<br><br>Two (2) pre-connect 1-3/4" hose crosslays shall be installed over pump enclosure, with quarter turn 2" diameter ball valves. The outlets shall be a 2" NPT female swivel x 1-1/2" male NPSH hose threads.<br><br>The crosslay hosebeds shall have smooth aluminum sides. The hosebed decking shall be constructed with slots integrated into the hosebed floor.<br><br>Each hosebed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with nozzle, for hose provided by the fire department. A divider shall be installed to separate the crosslay beds.<br><br>These discharges are foam capable.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close. | YES | NO | |

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| | The specified valve shall be an Elkhart two-inch (2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for colour coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless-steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless-steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.<br><br>The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed colour-coded label.<br><br>Two (2) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **2-1/2" CROSSLAY DISCHARGE**<br><br>One (1) pre-connect 2-1/2" hose crosslay shall be installed over the pump enclosure with a quarter turn 2-1/2" diameter ball valve.<br><br>The hosebed decking shall be constructed with slots integrated into the hosebed floor.<br><br>The hose bed shall provide for a minimum capacity of 200 feet of 2-1/2" diameter double jacket hose with the hose and nozzle provided by the fire department.<br><br>The outlet shall be equipped with 2-1/2" NPT female swivel x 2-1/2" male CSA hose | YES | NO | |

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| | threads.<br><br>21-01-2202<br>A Class 1 automatic type 3/4" bleeder valve shall be installed.<br><br>The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for colour coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless-steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless-steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.<br><br>The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed colour-coded label.<br><br>One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **CROSSLAY HINGED COVER WITH END FLAPS**<br><br>The crosslay hosebed shall be equipped with a single aluminum diamond plate hinged cover with vinyl end flaps with hook & loop fasteners. The cover shall have rubber bumpers, latching devices, and lift up handle on each end of the cover. | YES | NO | |

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| | The hosebed cover shall be labeled, "Not a Standing or Walking Surface", per NFPA.<br><br>The vinyl cover shall be red in colour. | | | |
| | **CROSSLAY HOSE BED TRIM**<br><br>The crosslay hosebed shall be equipped anodized aluminum angle overlays, one on each end of the hosebed. | YES | NO | |
| | **CROSSLAY HOSEBEDS**<br><br>Crosslay hosebed(s) shall be mounted over the upper pump panel or gauge panel in the upper portion of the pump enclosure. The crosslay hosebed shall be approximately 12" from the top of the pump enclosure. | YES | NO | |
| | **LEFT SIDE PUMP PANEL -- 2-1/2" DISCHARGE**<br><br>One (1) 2-1/2" discharge shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A colour coded nameplate label shall be provided adjacent the control handle.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.<br><br>One (1) lightweight aluminum, white colour coded, elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" CSA male hose threads.<br><br>One (1) 2-1/2" CSA rocker lug white colour coded vented cap and cable or chain securement shall be provided.<br><br>The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and | YES | NO | |

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| | incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for colour coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless-steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless-steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.<br><br>The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed colour-coded label.<br><br>One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE**<br><br>One (1) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A colour coded nameplate label shall be provided adjacent the control handle.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.<br><br>One (1) lightweight aluminum, black colour | YES | NO | |

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| | coded, elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" CSA male hose threads.<br><br>One (1) 2-1/2" CSA rocker lug black colour coded vented cap and cable or chain securement shall be provided.<br><br>The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for colour coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless-steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless-steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.<br><br>The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed colour-coded label.<br><br>One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **RIGHT SIDE PUMP PANEL -- 3" x 4" DISCHARGE**<br><br>One (1) 3" discharge shall be installed on the right side pump panel area and shall be controlled by a full flow 3" slow-close quarter turn ball valve. The discharge shall have 4" NST male hose threads. A colour coded | YES | NO | |

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| | nameplate label shall be provided adjacent the control handle.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.<br><br>One (1) yellow colour coded elbow with 30 degree slant shall be provided. Threads shall be 4" Storz with lugs and manual locks x 4" female swivel NST with rocker lugs.<br><br>One (1) 4" yellow colour coded Storz cap with cable or chain securement shall be provided.<br><br>The specified valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>One (1) Elkhart valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with a colour-coded name plate.<br><br>One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a <u>WHITE</u> dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **REAR RIGHT SIDE -- 2-1/2" DISCHARGE**<br><br>One (1) 2-1/2" discharge shall be installed on the right side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. The outlet shall be | YES | NO | |

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| | equipped with an engraved nameplate label shall be installed adjacent the valve control handle.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.<br><br>One (1) lightweight aluminum, blue colour coded, elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" CSA male hose threads.<br><br>One (1) 2-1/2" CSA rocker lug blue colour coded vented cap and cable or chain securement shall be provided.<br><br>The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for colour coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless-steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless-steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.<br><br>The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed colour-coded label. | | | |

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| | One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel. | | | |
| | **3" MONITOR DISCHARGE**<br><br>One (1) 3" discharge shall be piped to the area over the pump enclosure with 3" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor or deck gun is attached. The quarter turn ball valve shall be controlled on pump panel.<br><br>A colour coded nameplate label shall be provided adjacent the valve control handle.<br><br>An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.<br><br>The specified valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.<br><br>One (1) Elkhart valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with a colour-coded name plate.<br><br>One (1) 2-1/2" (65mm) diameter IC pressure gauge with (Dual Scale PSI/kPa) (0-400) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump | YES | NO | |

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| | instrument panel. | | | |
| | **TASK FORCE TIPS EQUIPMENT**<br><br>The following Task Force Tips equipment shall be supplied with the offered vehicle:<br><br>One (1) TFT XFI-PLNJ Hurricane deck monitor<br>- flow up to 1,250USGPM/4,750LPM<br>- 2.5" outlet<br>- 3.0" flange inlet<br>- 360-degree horizontal rotation<br><br>One (1) TFT MST-4NJ 4-stacked tips set for deck monitor<br>- 2.5"/65mm inlet<br><br>One (1) TFT XF-SS5 stream straightener 5" 2.5" for deck monitor<br>- 2.5"/65mm threads<br>- 5.0" length | YES | NO | |
| | **FOAM PRO FOAM SYSTEM**<br><br>One (1) FoamPro part number S107-1600/2.0 electronic foam system shall be provided. The system shall be designed for use with Class A foam concentrate. The foam proportioning operation shall be designed for direct measurement of water flows and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.<br><br>The system shall be equipped with a control module suitable for installation on the pump panel. There shall be a microprocessor incorporated within the motor driver that shall receive input from the system's flowmeter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump. A "foam capable" paddlewheel-type flowmeter shall be installed in the discharge side of the piping | YES | NO | |

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| | system.<br><br>The control module shall enable the pump operator to:<br><br>•Activate the foam proportioning system<br>•Select the proportioning rates from 0.1% to 1.0%<br>•See a "low concentrate" warning light flash when the foam tank level becomes low and in two (2) minutes, if the foam concentrate has not been added to the tank, the foam concentrate pump shall be capable of shutting down.<br><br>A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity range shall be 0.1 to 1.7 GPM (6.4L/min) at 200 PSI (1400 kPa) with a maximum operating pressure up to 400 PSI (2750 kPa). The system shall draw a maximum of 30 amps at 12 volts. The motor shall be controlled by the microprocessor which shall be mounted to the base of the pump. It shall receive signals from the control module and power the 1/3 horsepower (.25 Kw) electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.<br><br>A full flow check valve shall be provided in the discharge piping to prevent foam contamination of the fire pump and water tank. A 5 PSI (35 kPa) opening pressure check valve shall be provided in concentrate line.<br><br>Components of the complete proportioning system as described above shall include:<br><br>•Operator control module<br>•Paddlewheel flowmeter<br>•Pump and electric motor/motor driver<br>•Wiring harnesses<br>•Low level tank switch<br>•Foam tank<br>•Foam injection check valve<br>•Main waterway check valve<br>•Flowmeter and tee with 2" male NPT threads.<br><br>The foam system shall be installed and calibrated to manufacturer's requirements. In | | | |

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| | addition the system shall be tested and certified by the apparatus manufacturer to meet applicable NFPA standards.<br><br>The foam system design shall be tested and pass environmental testing in accordance to SAE standards. The system shall be third party tested to certify compliance with RFI/EMI emissions per MIL-STD-416E.<br><br>An installation and operation manual shall be provided for the unit. The system shall have a one (1) year limited warranty by the foam system manufacturer. | | | |
| | **CONTROL CONNECTION CABLE -- FOAM SYSTEM**<br><br>The FoamPro 1600 Series foam system shall be provided with a twelve (12) foot control cable from the controller to the foam pump assembly. | YES | NO | |
| | **PUMP PANEL CONTROL -- FOAM SYSTEM**<br><br>The FoamPro 1600 Series foam system shall be provided with a standard pump panel mounted FoamPro control head. | YES | NO | |
| | **FLOWMETER AND TEE -- FOAM SYSTEM**<br><br>A FoamPro brass flowmeter shall be provided. The flowmeter shall be installed in the "foam capable" discharge line. The flowmeter shall have maximum accuracy between the flow range of 10 GPM and 320 GPM and be capable of operation between 3 GPM to 380 GPM. The tee shall have 1-1/2" NPT and 2" Victaulic inlet and outlets connections. | YES | NO | |
| | **LOW-LEVEL TANK SENSOR FOAM TANK**<br><br>A FoamPro low-level foam tank sensor shall be provided. The sensor shall be capable of mounting side of foam tank that shall interface with the microprocessor. The unit shall have a 1/8" NPT thread size. | YES | NO | |
| | **MAIN WATERWAY CHECK VALVE -- FOAM SYSTEM**<br><br>A FoamPro full-flow check valve shall be provided. The valve shall prevent foam contamination of the fire pump and water tank or water contamination of the foam | YES | NO | |

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| | tank. The unit shall have a nickel-electro plated body with stainless-steel components. The valve shall have 2" NPT threads with an injection and drain port size of 1/2" NPT. | | | |
| | **FOAM SYSTEM -- INJECTOR FITTING**<br><br>A Foam Pro injector fitting shall be provided with the foam system. | YES | NO | |
| | **INSTRUCTION AND RATING LABEL -- FOAM SYSTEM**<br><br>A FoamPro part number 6032-0018 instruction and system rating label shall be provided. The label shall display information for a FoamPro 1600 Series foam system and shall meet applicable sections of the NFPA standards. | YES | NO | |
| | **SCHEMATIC LABEL -- FOAM SYSTEM**<br><br>A FoamPro part number 6032-0015 foam system schematic label shall be provided shall be installed on the pump panel near foam controls. The label shall be a diagram of a single tank foam system layout and shall meet applicable sections of the NFPA standards.<br><br>Foam will be supplied to both 1.5" crosslays. | YES | NO | |
| | **1" FOAM TANK CONTROL -- CLASS A**<br><br>One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label. | YES | NO | |
| | **INTEGRAL CLASS A FOAM TANK -- 30 GALLON**<br><br>One (1) thirty (30) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend | YES | NO | |

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| | from wall to wall and cover at least 75 percent of the area of the plane of the partition.<br><br>The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.<br><br>The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.<br><br>A colour coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."<br><br>The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all | | | |

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| | operating conditions with the vehicle level.<br><br>25-22-9300<br>The foam tank(s) shall be fabricated by United Plastic Fabricating. | | | |
| | **FOAM TANK DRAIN -- UNDER TANK**<br><br>The foam tank shall have one (1) 1" gate valve drain provision installed. | YES | NO | |
| | **CLASS A FOAM TANK GAUGE**<br><br>One (1) Fire Research TankVision Pro model WLA360-A00 or equal foam tank indicator kit shall be installed at the operator's panel. The kit shall include an electronic indicator module, a pressure sensor, a 10-ft sensor cable and a tank vent. The indicator shall show the volume of Class A foam concentrate in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon, and have a distinctive green label.<br><br>The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable coloured light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low foam warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.<br><br>The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the foam tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors. The foam tank vent shall be installed on the foam fill tower. | YES | NO | |

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| | **FOAM SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS**<br><br>The proportioning system shall be capable of proportioning foam concentrate in accordance with the foam concentrate manufacturer's recommendations for the type of foam concentrate used in the system over the system's design range of flow and pressures. The foam proportioning system water flow characteristics and the range of proportioning ratio shall be specified as noted herein. The latest foam system shall be in compliance with applicable NFPA standards as it relates to this specified system<br><br>Plumbing and Strainer<br><br>The foam concentrate supply line shall be non-collapsible. A means shall be provided to prevent water back flow into the foam proportioning system and the foam concentrate storage tank.<br><br>A strainer or filter shall be provided on the foam concentrate supply side of the foam proportioner to prevent any debris that might affect the operation of the foam proportioning system from entering the system. The strainer assembly shall consist of a removable straining element, housing, and retainer. The strainer assembly shall allow full flow capacity of the foam supply line.<br><br>Foam System Controls<br><br>The foam proportioning system operating controls shall be located at or near the pump operator's position and shall be clearly identified. Foam proportioning system shall be provided with accessible controls to completely flush the system with water according to the manufacturer's instructions.<br><br>Labels and Instructions<br><br>An instruction plate shall be provided for the foam proportioning system that include, at a minimum, piping schematic of the system and basic operating instructions. Labels that are marked clearly with the identification and function shall be provided for each control, | YES | NO | |

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| | gauge, and indicator related to the foam proportioning system.<br><br>A label shall be provided on the pump operator's panel that identifies the type of foam concentrate that the foam proportioning system is designed to use. It shall also state the minimum/maximum foam proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.<br><br>Two (2) copies of an operations and maintenance manual shall be provided. They shall include a complete diagram of the system together with operating instructions and details outlining all recommended maintenance procedures.<br><br>Foam System Testing<br><br>The accuracy of the foam proportioning system shall be certified by the foam equipment manufacturer and also tested by the installer prior to delivery of the apparatus in compliance to NFPA standards. | | | |
| | **WATER TANK - 1000 GALLON**<br><br>The apparatus shall be equipped with a 1,000US gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe (a six-inch (6") overflow pipe shall be provided if required by dump valve installation). | YES | NO | |
| | **WATER TANK**<br><br>The apparatus shall be equipped with a rectangular tank. | YES | NO | |
| | **WATER TANK FILL TOWER**<br><br>A fill tower measuring approximately 10” x 10” square shall be provided on the water tank up to and including 1500 gallons total capacity.<br><br>The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .75" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. | YES | NO | |

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| | The tank shall carry a lifetime warranty.<br><br>The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.<br><br>The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.<br><br>A combination vent/water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with a minimum schedule 40 PVC pipe through the tank.<br><br>The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump. The sump shall have a minimum 3" threaded outlet on the bottom to be used for a combination clean out and drain.<br><br>The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.<br><br>The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area. | | | |

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| | The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4” x 1” and a hardness of approximately 60 durometer. The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.<br><br>A picture frame type cradle mount with a minimum of 2" x 2" x 1/4” mild steel, stainless-steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4” by 6” high are permitted for the purpose of capturing the tank.<br><br>Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless-steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4” and shall be approximately 6” to 12” long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4” inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank.<br><br>Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted | | | |

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| | directly to the tank top unless provisions have been designed into the tank for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.<br><br>The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier, offering leak protection in the event of a weld compromise.<br><br>The tank shall be equipped with Polychromatic fill towers. The water fill tower shall be blue in colour. The foam tank fill towers, if applicable, shall be yellow for foam A and green for foam B and black for any additional foam fill towers.<br><br>The water tank shall be certified for the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.<br><br>The tank shall be manufactured by United Plastic Fabricating (UPF). | | | |
| | **HOSEBED WIDTH**<br><br>The width of the pumper body hosebed shall be (approximately) 70". | YES | NO | |
| | **HOSEBED - SINGLE AXLE PUMPER**<br><br>The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.<br><br>The apparatus hose body shall be properly reinforced without the use of angles or structural shapes and free from all | YES | NO | |

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| | projections that might injure the fire hose.<br><br>The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.<br><br>The upper rear interior of the hose body on the right and left sides shall be overlaid with brushed stainless-steel to protect the painted surface from damage by hose couplings. | | | |
| | **HOSE BED STORAGE CAPACITY**<br><br>The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of fire department supplied fire hose. | YES | NO | |
| | **ALUMINUM HOSEBED DIVIDER**<br><br>One (1) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus. | YES | NO | |
| | **ALUMINUM HOSEBED COVER**<br><br>The hosebed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. The covers shall be of the sloped design for proper water runoff. Positive hold-open devices shall be provided to hold the door in the open position.<br><br>The cover, approximately 72” wide with a center opening, shall be installed the full length of the hose bed.<br><br>The hosebed cover shall be labeled, "Not a Standing or Walking Surface", per NFPA. | YES | NO | |
| | **MAIN HOSEBED DIVIDER**<br><br>One (1) transverse divider shall be included to separate the hosebed and fill tower dunnage area.<br><br>One (1) stationary hosebed divider shall be provided in the main hosebed.<br><br>The hosebed divider shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom and front | YES | NO | |

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| | edges of the divider.<br><br>Divider shall be bolted in place, front and rear, to allow for ease of removal or relocation. | | | |
| | **MANUALLY OPERATED ALUMINUM HOSEBED COVER**<br><br>The polished aluminum treadplate hosebed covers extending the full-length and width of the main hosebed shall have lift up handles installed on each hose cover to manually open the hosebed covers. | YES | NO | |
| | **HOSEBED LED LIGHTS**<br><br>Two (2) 48" long OnScene Solutions Access LED light shall be installed and produce approximately 10050 lumens per light. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications. The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.<br><br>The LED lights shall be recessed into the underside of the hinged aluminum hosebed covers to provide illumination for repacking of fire hose. The 12 volt LED lights shall be automatically controlled by a switch which activates upon opening of the door. The lights shall also be connected to the hazard light in the chassis cab to indicate when the hose bed covers are in the open position. | YES | NO | |
| | **REAR VINYL FLAPS FOR ALUMINUM COVER**<br><br>There shall be a vinyl flaps attached to each aluminum hosebed cover. The vinyl flaps shall cover the area on the rear of the hosebed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be shall be secured utilizing a hook and loop fastening system.<br><br>The vinyl cover shall be red in colour. | YES | NO | |

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| | **HOSEBED RISERS**<br><br>Hosebed risers shall be provided and installed at the front and along each side of the main hosebed for added depth to meet the hose storage requirement. Risers shall form the right and left side vertical hosebed sides. Hosebed risers shall be constructed of the same material as the body and painted to match body colour. | YES | NO | |
| | **BODY CONSTRUCTION**<br><br>The apparatus body shall be designed and built using a computer aided drafting and three dimensional modeling program. This engineering program shall have finite element analysis capability, so the design can be studied and stress points identified. This will allow for a total design review to ensure the strongest and most durable body possible. The use of this engineering system will ensure accuracy and repeatability for service parts in the event of accidental damage. The body components shall be fabricated using CNC equipment to cut and bend the individual body parts. | YES | NO | |
| | **BODY WIDTH**<br><br>The overall width of the pumper body shall not exceed 98". | YES | NO | |
| | **3/16" ALUMINUM BODY**<br><br>The compartment modules shall be fabricated using .190 5052H32 aluminum sheets. The individual compartment pieces shall be cut using a CNC high definition plasma or large cutting equipment. This design will ensure that all parts fit accurately. These compartment modules shall bolt to the subframe creating a completely independent modular body. | YES | NO | |
| | **ELECTROLYSIS CORROSION CONTROL**<br><br>The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in | YES | NO | |

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| | addition to any other barrier material that may be used.<br><br>All 1/4" diameter and smaller screws and bolts shall be stainless-steel.<br><br>Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features. | | | |
| | **COMPARTMENT TOPS**<br><br>The compartment top shall be formed from .190 aluminum treadplate, meeting NFPA slip resistant standards and shall extend down the side. | YES | NO | |
| | **SUB-FRAME**<br><br>The apparatus shall be designed using a structural subframe, designed as an independent assembly, separate of the chassis frame. This will allow for a totally modular body, capable of being remounted to a different chassis if the need arises. Designs which do not use a modular subframe assembly will not be allowed.<br><br>This subframe shall be designed using heavy duty 7 gauge steel and 5/8” steel plates to form a subframe capable of carrying the loads designated by the fire department. The subframe shall be designed to carry a minimum of 500 lbs per compartment, distributed.<br><br>The subframe shall be assembled with “Huck” bolts to ensure maximum tightening and clamping force at all joints. It shall be bolted securely at the rear with a minimum of four (4) 5/8” grade 8 bolts on each side and mounted at the front using four (4) spring loaded assemblies and lateral guides to allow for maximum twist, yet keeping the body aligned on the chassis.<br><br>The subframe shall consist of formed 7 gauge cross members, spaced no more than 16-inches apart, to adequately support the water tank. There shall be ¼” thick hard rubber channel pads covering the cross members, which will help prevent tank damage due to road shock. The tank shall be held in place by four (4) formed angle | YES | NO | |

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| | brackets, at least 3” high. These four brackets will prevent fore and aft and lateral movement of the tank. These cross members shall be attached to two (2) longitudinal 3x3 angles. These angles shall be at the ends of the cross members to allow the compartment to be attached and supported by these pieces. There shall be at least two down and out compartment supports under each compartment, ahead of and behind the rear wheels.<br><br>After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion. No exception to galvanized construction. | | | |
| | **SINGLE AXLE WHEEL WELL LINER**<br><br>For ease of accessibility and maintenance, wheel well module shall be painted smooth aluminum plate.<br><br>To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. | YES | NO | |
| | **FENDERETTES**<br><br>The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless-steel fasteners. | YES | NO | |
| | **ROLL UP DOOR CONSTRUCTION**<br><br>The roll up door(s) shall be fabricated from aluminum extrusions and be manufactured by ROM, no exception.<br><br>The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be | YES | NO | |

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| | visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.<br><br>The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.<br><br>A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.<br><br>Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have “V” shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.<br><br>The roll mechanism shall have a clip system that connects the curtain slats to the operator drum to allow for easy tension adjustment without tools. A four (4) inch diameter counterbalanced operator drum to shall be incorporated to assist in lifting the door. | | | |
| | **BODY CONFIGURATION**<br><br>The aluminum apparatus body shall be 160"-170" long | YES | NO | |
| | **LEFT SIDE COMPARTMENTS**<br><br>COMPARTMENT HEIGHT<br><br>The body compartments shall be 72" in height. | YES | NO | |

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| | **FORWARD COMPARTMENT**<br><br>There shall be one (1) full height compartment module located ahead of the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be approximately 49" wide.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>300# ROLLOUT TRAY<br><br>One (1) SlideMaster SM3-LP Series low profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver powder coated steel slide frame with sealed roller bearings rated to 300 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 2-3/4" deck height.<br><br>An integrated manual quarter turn "gravity" | YES | NO | |

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| | lock shall hold tray in both the "in" and "out" positions. The "gravity lock" manually rotates a rod with a tab to engage the bottom frame.<br><br>REFLECTIVE STRIPE<br><br>The outer edge and both sides of the shelf, slide-out tray, pull-out tool board, swing-out tool board, or pull-out and down tray shall have alternating red and white reflective DOT striping applied for safety.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.<br><br>The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **OVERWHEEL COMPARTMENT**<br><br>There shall be one (1) compartment module above the rear wheels. The compartment module shall be equipped with a natural finish roll up door and shall be approximately 70" wide.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>SWING-OUT GEARGRID<br><br>One (1) 500 lb. rated capacity fire apparatus Swing-Out Tool Grid, Single shall be | YES | NO | |

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| | provided by GearGrid and installed by the OEM or dealer. The Single-Swing-Out Tool Grid shall be composed of one (1) stationary wire grid on the back wall and (1) wire grid that shall swing outward. Both frames shall consist of 1 ¼" x 16 ga. wall tubular frame and ¼" diameter cold drawn steel wire grids. The swing out grid shall be hinged at the front so that it shall swing outward to 90 degrees beyond the truck. It shall move on shouldered bronze bushings with 3/8" inserts that have been bolted into the bottom and top of the tubular supporting structure.<br><br>A single latch mechanism consisting of a nylon positive stop shall be provided to lock the tool board in the stored position. Gas shocks shall be used to hold the swinging grid open and closed.<br><br>Reflective tape shall be placed on both sides of the end of the tool grid that extends outward.<br><br>The grid shall be red.<br><br>$1,000 budget for brackets shall be included.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.<br><br>The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **REAR COMPARTMENT**<br><br>There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be approximately 49" wide.<br><br>An easy to reach panel with hinged door shall be provided to access the wiring | YES | NO | |

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| | components in the rear compartment.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>300# ROLLOUT TRAY<br><br>One (1) SlideMaster SM3-LP Series low profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver powder coated steel slide frame with sealed roller bearings rated to 300 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 2-3/4" deck height.<br><br>An integrated manual quarter turn "gravity" lock shall hold tray in both the "in" and "out" positions. The "gravity lock" manually rotates a rod with a tab to engage the bottom frame.<br><br>REFLECTIVE STRIPE<br><br>The outer edge and both sides of the shelf, | | | |

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| | slide-out tray, pull-out tool board, swing-out tool board, or pull-out and down tray shall have alternating red and white reflective DOT striping applied for safety.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.<br><br>The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **RIGHT SIDE COMPARTMENTS**<br><br>COMPARTMENT HEIGHT<br><br>The body compartments shall be 72" in height. | YES | NO | |
| | **FORWARD COMPARTMENT**<br><br>There shall be one (1) full height compartment module located ahead of the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be approximately 49" wide.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>One (1) adjustable shelf shall be constructed | YES | NO | |

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| | of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>The shelf is in the upper split-depth location.<br><br>300# ROLLOUT TRAY<br><br>One (1) SlideMaster SM3-LP Series low profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver powder coated steel slide frame with sealed roller bearings rated to 300 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 2-3/4" deck height.<br><br>An integrated manual quarter turn "gravity" lock shall hold tray in both the "in" and "out" positions. The "gravity lock" manually rotates a rod with a tab to engage the bottom frame.<br><br>REFLECTIVE STRIPE<br><br>The outer edge and both sides of the shelf, slide-out tray, pull-out tool board, swing-out tool board, or pull-out and down tray shall have alternating red and white reflective DOT striping applied for safety.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup. | | | |

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| | The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **OVERWHEEL COMPARTMENT**<br><br>There shall be one (1) compartment module above the rear wheels. The compartment module shall be equipped with a natural finish roll up door and shall be approximately 70" wide.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>Two (2) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup. | YES | NO | |

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| | The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **REAR COMPARTMENT**<br><br>There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be approximately 49" wide.<br><br>An easy to reach panel with hinged door shall be provided to access the wiring components in the rear compartment.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>The shelf is in the upper split-depth location.<br><br>300# ROLLOUT TRAY<br><br>One (1) SlideMaster SM3-LP Series low profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver | YES | NO | |

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| | powder coated steel slide frame with sealed roller bearings rated to 300 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 2-3/4" deck height.<br><br>An integrated manual quarter turn "gravity" lock shall hold tray in both the "in" and "out" positions. The "gravity lock" manually rotates a rod with a tab to engage the bottom frame.<br><br>REFLECTIVE STRIPE<br><br>The outer edge and both sides of the shelf, slide-out tray, pull-out tool board, swing-out tool board, or pull-out and down tray shall have alternating red and white reflective DOT striping applied for safety.<br><br>COMPARTMENT LIGHTS<br><br>Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.<br><br>The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **REAR CENTER COMPARTMENT**<br><br>There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be approximately 55" high x 24" deep x 42" wide and be equipped with a natural finish roll up door. The compartment shall be partitioned off from the side compartments.<br><br>The compartment shall be equipped with the following:<br><br>A removable louvered vent shall be provided | YES | NO | |

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| | in the compartment.<br><br>ADJUSTABLE SHELVING TRACKS<br><br>The compartments shall be equipped with aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.<br><br>ADJUSTABLE SHELF<br><br>One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>300# ROLLOUT TRAY<br><br>One (1) SlideMaster SM3-LP Series low profile telescoping equipment tray(s) shall be installed in a standard depth compartment. The tray assembly shall have a silver powder coated steel slide frame with sealed roller bearings rated to 300 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend 100% allowing the tray to be completely accessible from outside the compartment. An integrated manual quarter turn lock shall hold tray in both the "in" and "out" positions. The slide shall have a 2-3/4" deck height.<br><br>An integrated manual quarter turn "gravity" lock shall hold tray in both the "in" and "out" positions. The "gravity lock" manually rotates a rod with a tab to engage the bottom frame.<br><br>REFLECTIVE STRIPE<br><br>The outer edge and both sides of the shelf, slide-out tray, pull-out tool board, swing-out tool board, or pull-out and down tray shall have alternating red and white reflective DOT striping applied for safety.<br><br>COMPARTMENT LIGHTS | | | |

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| | Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.<br><br>The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.<br><br>The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door. | | | |
| | **ADDITIONAL SHELVING**<br><br>Four (4) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.<br><br>Final installation locations to be reviewed. | YES | NO | |
| | **SLIDE OUT VERTICAL LADDER MOUNTINGS**<br><br>The ladder shall slide into the right rear of the apparatus, through the right side of the body. The vertically mounted slide in assembly shall be an integral part of the body and accessible through a hinged door.<br><br>The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body. | YES | NO | |
| | **INTERNAL FOLDING ATTIC LADDER MOUNTING**<br><br>An internal mounting shall be provided for the specified folding attic ladder. | YES | NO | |

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| | **LADDER SOURCE**<br><br>New ground ladders shall be provided by the body builder. | YES | NO | |
| | **PIKE POLE MOUNTING BRACKET**<br><br>Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted in the ladder tunnel. | YES | NO | |
| | **HARD SUCTION MOUNTING**<br><br>One (1) hard suction hose compartment shall be provided at the top of the body compartments, behind the roll up door, on the left side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have a hinged door with push to latch door catches.<br><br>The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body. | YES | NO | |
| | **HARD SUCTION MOUNTING**<br><br>One (1) hard suction hose compartment shall be provided at the top of the body compartments, behind the roll up door, on the right side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have a hinged door with push to latch door catches.<br><br>The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body. | YES | NO | |
| | **SUCTION HOSE**<br><br>Two (2) 6.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided. | YES | NO | |

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| | **FOLDING STEPS RIGHT SIDE FRONT**<br><br>Four (4) folding steps of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp hand-hold. A heavy duty stainless-steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.<br><br>The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.<br><br>The step shall be installed on the right side front compartment face. | YES | NO | |
| | **HANDRAIL TOP OF BODY SIDES**<br><br>One (1) extruded aluminum non-slip handrails, approximately 12" in length, shall be provided and mounted, on the right side at the top of the body sides, at the front of the apparatus body. | YES | NO | |
| | **FRONT BODY PROTECTION PANELS**<br><br>Aluminum tread plate overlays and panels shall be installed on the front of the body compartment from the lower edge to the top of the compartment doors. | YES | NO | |
| | **CATWALKS**<br><br>Aluminum tread plate catwalks shall be installed on the top of the compartments. | YES | NO | |
| | **REAR BODY PROTECTION PANELS**<br><br>The rear body panels of the body shall be a smooth material, to allow for the proper application and installation of a "Chevron" stripe on the rear. | YES | NO | |

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| | **REAR STEP - 16” BOLT-ON**<br><br>A 16" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.<br><br>A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited. | YES | NO | |
| | **REAR INTERMEDIATE STEP**<br><br>An intermediate fixed step shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The intermediate step shall be constructed of .188” polished aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards and be approximately 8” deep x 48” wide. | YES | NO | |
| | **ACCESS LADDER - LEFT REAR**<br><br>There shall be a swing out and down access ladder supplied and installed on the apparatus, for accessing the top of the apparatus. It shall be all aluminum and shall incorporate treads six (6") inches deep and no more than eighteen (18") inches apart. The ground to the first step dimension, on level ground, shall be no more than twenty-four (24") inches.<br><br>The access ladder shall have integrated hand holds in the steps, to aid in the ascent/descent of the ladder.<br><br>When in the deployed position the ladder shall have an angle of approximately 75-degrees to facilitate ascending and descending the ladder. The ladder shall be retained in the stowed and deployed position by two (2) gas cylinders and shall not require the use of latches to hold it in position. | YES | NO | |
| | **HANDRAIL REAR STEP**<br><br>One (1) extruded aluminum non-slip handrails, approximately 60” in length, shall be provided and vertically mounted on the rear of the apparatus, on the right side of the body. | YES | NO | |

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| | **HANDRAIL BELOW HOSEBED**<br><br>One (1) extruded aluminum non-slip handrail, approximately 48” in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus (rear edge of the intermediate step). | YES | NO | |
| | **EXTRUDED ALUMINUM RUB RAILS**<br><br>Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel. There shall also be a bolt on aluminum corner casting on each rear corner to blend the rear tail board assembly with the side rub rails. | YES | NO | |
| | **NYLON SPACERS FOR RUB RAILS**<br><br>There shall be nylon spacers provided between the rub rail and the body. This shall allow wash out and replacement in the event of damage. | YES | NO | |
| | **WHEEL WELL PROVISIONS LOCATION**<br><br>The wheel well provisions shall be located on the left side of the apparatus, ahead of the rear wheels.<br><br>One (1) wheel chock storage compartment for two (2) wheel chocks shall be provided and located in the rear wheel well of the apparatus body.<br><br>The storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement. A painted door shall be provided. | YES | NO | |
| | **WHEEL WELL PROVISION LOCATION**<br><br>The wheel well provisions shall be located on the left side of the apparatus, behind of the rear wheels.<br><br>One (1) fire extinguisher storage compartment shall be provided in the rear wheel well area. The compartment shall be designed with ample room for the specified extinguisher. A painted aluminum door shall be installed. | YES | NO | |

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| | One (1) one-inch (1") wide loop of black webbing shall be installed in each compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve. | | | |
| | **WHEEL WELL PROVISION LOCATION**<br><br>The wheel well provisions shall be located on the right side of the apparatus, ahead of the rear wheels.<br><br>One (1) breathing air cylinder storage compartment for four (4) SCBA cylinders (not supplied) shall be provided and located in the rear wheel well of the apparatus body.<br><br>The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.<br><br>Compartment shall be provided with SCBA cylinder scuff protection. A painted aluminum door shall be installed.<br><br>Three (3) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve. | YES | NO | |
| | **WHEEL WELL PROVISION LOCATION**<br><br>The wheel well provisions shall be located on the right side of the apparatus, behind of the rear wheels.<br><br>One (1) breathing air cylinder storage compartment for four (4) SCBA cylinders (not supplied) shall be provided and located in the rear wheel well of the apparatus body.<br><br>The cylinder storage compartment shall be constructed entirely of aluminum. The door | YES | NO | |

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| | assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.<br><br>Compartment shall be provided with SCBA cylinder scuff protection. A painted aluminum door shall be installed.<br><br>Three (3) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve. | | | |
| | **BODY PAINT PROCESS**<br><br>FACILITY CERTIFICATION<br><br>The paint facility shall be in current compliance with 40 CFR (code of federal regulations) part 63 subpart HHHHHH national emission standards for hazardous air pollutants: Paint stripping and miscellaneous surface coating operations at area sources (6H-NESHAP). Spray guns shall also be compliant certified by paint gun manufacturer.<br><br>CAB / MODULE PREP<br><br>Prior to assembly, all joints and seams are to be mechanically etched. All welds shall be ground smooth prior to priming. The bare substrate of the module is first cleaned with a strong surface cleaner to remove fabrication and pneumatic tool oils. *The reason? Cleaning the surface prior to sanding prevents oils and contaminants from being imbedded into the substrate.* After sanding process, a mild surface cleaner removes any sanding dust residue along with pneumatic tool oil. A waterborne surface cleaner is available in case substrate was touched with bare hands or skin.<br><br>The following steps must be followed in sequence to properly apply paint to the Fire truck cab, chassis or module.<br><br>SURFACE PREP | YES | NO | |

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| | •Clean entire modular body with Sikkens OTO using the two-cloth method, wipe on wet, wipe dry. *Reason: Wiping our surface cleaners on wet, contaminants loosen and float to the top. Those floating contaminants then get wiped off with an absorbent towel.*<br>•Using an orbital sander, (where polyester filler will be applied) 80-grit is used to provide a mechanical tooth for optimal adhesion. 180-grit is then used surrounding the 80-grit area. Sikkens M600 surface cleaner is then used to remove sanding dust and pneumatic tool oil. If bare hands or skin accidentally touched the surface, Sikkens Autoprep waterborne cleaner is used to remove natural oils. *Again: All surface cleaners are applied wet with one towel and wiped dry with another.*<br>•approved polyester body filler is then applied over the 80-grit ground areas to cover the imperfections from welds. When body filler dries, it's first sanded with 80-grit then finish sanded with 180-grit to remove all 80-grit sand scratches. Blow off surface dust using approved air wand.<br>•After body work has been completed, the rest of the aluminum substrate on module gets sanded with 80-grit sandpaper until the surface is bright and sand scratches are consistent. Module gets blown off again to remove all sanding dust.<br>•Step 1 is essential in achieving proper adhesion.<br><br>EPOXY PRIMER AND HIGH BUILD PRIMER SURFACER APPLICATION PROCESS:<br>•First, if sanded aluminum substrate has not been primed within 8 hours, aluminum substrate gets re-abraded to remove oxidation that may have begun on aluminum surface. Aluminum substrate gets cleaned with Sikkens M600 surface cleaner using the 2-towel method. Surface cleaners do not get applied over body filler due to polyester filler being absorbent.<br>•One (1) coat of AkzoNobel LV262 Epoxy primer is applied. This epoxy primer slows down corrosion from happening if in case the unit (once out in the field) has stone chips or scratches down to aluminum. This product is a 2-component epoxy primer meaning it mixes with a hardener. Paint technicians are trained to properly apply this product to | | | |

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| | achieve a minimum of 1 mil DFT (Dry film thickness) required by AkzoNobel. A blank module schematic showing specific areas to measure dry film thickness is completed on each module /unit.<br>•Allow LV262 25 minutes minimum dry time prior to applying AkzoNobel LV650 primer surfacer. Apply two to three wet coats of AkzoNobel LV650 two component low VOC high build primer surfacer. A dry film thickness of up to 8 mils can be achieved prior to sanding. Minimum flash between coats is 30 seconds to 5 minutes. LV650 surfacer dries 3 different ways. 8 hour dry without accelerator, bake for 1 hour at 140-degrees or accelerate which allows technicians to sand in 45 minutes @70-degrees.<br><br>SANDING:<br>•Block sand entire module with 320-grit sandpaper minimizing any accidental cut throughs on edges. Blow off body with air gun and move module into paint booth.<br><br>PRE TOPCOAT PREPARATION<br>•Clean areas where approved seam sealer is applied with Sikkens M600 surface cleaner. If by accident, bare hands or skin touched surface on cab or module, Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.<br>•Seam seal with approved non-shrinking moisture cured urethane seam sealer. Technicians follow seam sealer technical data sheets pertaining to application and dry times prior to applying AkzoNobel BT650 basecoat or 650 Topcoat single stage paint.<br>•Clean module with M600 surface cleaner. If by accident, bare hands or skin touched surface on module, Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.<br>•If there are any visible cut throughs, paint techs first use a pre-treatment Alodine wipe followed by one coat of reduced LV262 epoxy primer over these areas and give a 20-minute flash prior to applying BT650 basecoat or Topcoat.<br>•Tack rag unit to remove any lint or dust that could have landed on surface. | | | |

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| | TOPCOAT PROCEDURE<br>•Mix BT650 basecoat or Topcoat (single stage) polyurethane paint.<br>•Fluid and spray pattern checks are done prior to applying BT650 base, Topcoat and Clear coat.<br>•Apply BT650 basecoat until complete coverage is achieved. If Topcoat is applied, a minimum of 1.8 mils is recommended after cut and buff procedure. Note: Topcoat doesn't get clear coated.<br>•Allow solid colour BT650 basecoat to flash 20 minutes prior to applying 3 coats Sikkens LV651 Glamour Clear coat.<br>•If a metallic colour, allow BT650 basecoat to flash 45 minutes prior to applying 3 coats LV651<br>•Glamour Clear coat. Bake body for 45 minutes once surface temp has reached 140-degrees.<br>•The mil thicknesses are as follows:<br>• Autocoat BT LV262 Epoxy Primer1.0 to 1.5 mils<br>• Autocoat BT LV650 2K Primer Surfacer1.0 to 3.0 mils<br>• Autocoat BT LV650 Basecoat colour1.0 to 1.8 mils<br>•Autocoat LV651 Clearcoat2.0 to 3.0 mils<br>• Combined total:5.0 to 9.3 mils | | | |
| | **APPARATUS COLOUR**<br><br>L0762EY MED RED ELITE EY to match the Freightliner chassis paint. | YES | NO | |
| | **INTERIOR COMPARTMENT FINISH**<br><br>The interiors of the body compartments shall be painted light gray. | YES | NO | |
| | **TOUCH-UP PAINT**<br><br>One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery. | YES | NO | |

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| | **LETTERING**<br><br>The fire department shall supply the apparatus lettering. | YES | NO | |
| | **CAB AND BODY STRIPE**<br><br>A straight Scotchlite reflective stripe, 4" in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the colour and location of the stripe.<br><br>The colour of the 3M brand striping material shall be white. | YES | NO | |
| | **CHEVRON STRIPING**<br><br>The entire rear portion of the body shall have Oralite V98 reflective red and yellow striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel. | YES | NO | |
| | **REFLECTIVE STRIPE DOOR INTERIORS**<br><br>Reflective striping shall be installed on the interior of each chassis door. The lower portion of the door shall have red and yellow Chevron applied to it that matches the rear of the apparatus. A matching reflective stripe shall be applied on the vertical outer edge of the door. | YES | NO | |
| | **YELLOW SAFETY TAPE - STANDING & WALKING SURFACES**<br><br>The apparatus shall meet NFPA standard 15.7.1.6 designating any horizontal standing or walking surface higher than 48-in (1220 mm) from the ground and not guarded by railing or structure at least 12-in (300 mm) high shall have at least a 1-in (25 mm) wide safety yellow line delineation that contrasts with the background to mark the outside perimeter of the designated standing or walking surface area, excluding steps and ladders. | YES | NO | |

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| | **WHEEL CHOCKS**<br><br>Two (2) standard aluminum wheel chocks shall be provided. | YES | NO | |
| | **ROOF LADDER**<br><br>One (1) Duo Safety Model 775-A, 14 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards. | YES | NO | |
| | **EXTENSION LADDER**<br><br>One (1) Duo-Safety Model 900-A, 24 foot two (2) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards. | YES | NO | |
| | **FOLDING LADDER**<br><br>One (1) Duo Safety Model 585-A, 10 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards. | YES | NO | |
| | **PIKE POLE**<br><br>One (1) 6' pike pole with I-Beam handle shall be provided. The pike pole shall be of fiberglass construction.<br><br>One (1) 8' pike pole with I-Beam handle shall be provided. The pike pole shall be of fiberglass construction. | YES | NO | |
| | **FIRE EXTINGUISHER**<br>One (1) 20# ABC dry chemical fire extinguisher shall be provided with mounting. The extinguisher shall have a pressure gauge and filled with a dry chemical extinguishing agent. | YES | NO | |

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| | **KOCHEK EQUIPMENT**<br><br>The following Kochek equipment shall be supplied with the offered vehicle:<br><br>Two (2) set(s) of Kochek KS34 storz wrenches are included. Each set includes the following components:<br>• one (1) wrench holder<br>• four (4) 4"-5" storz x universal spanner wrenches<br><br>The wrench set shall be shipped loose for fire department installation. | YES | NO | |
| | **TASK FORCE TIPS EQUIPMENT**<br><br>The following Task Force Tips equipment shall be supplied with the offered vehicle:<br><br>Two (2) ABD8NX-NX intake valves<br><br>Two (2) Metro1 1.5" ME1VPGIS-173 nozzles *(NPSH threads)*<br><br>Two (2) Metro1 2.5" ME22V-354 nozzles *(CSA threads)*<br><br>One (1) Blitzfire XXC-52-HENH1; shipped loose/unmounted *(CSA threads)* | YES | NO | |

**FT-3 Tenderer's Declarations**

3.1 The Tenderer declares that it has obtained and read the Contract Documents.

3.2 The Tenderer declares that it understands and agrees to be boundby the Contract Documents.

3.3 Without limiting the generality of Section FT-3.2, the Tenderer declares that it has, at the time of tendering, fulfilled all of those obligations under the Contract which are required to be fulfilled by the time of tendering.

3.4 The Tenderer declares that all information which it has provided or will provide to the Owner is true.

**FT-4 Tenderer's Offer**

4.1 The Tenderer offers to do the work in accordance with the Contract Documents.

4.2 The Tenderer offers to do the work and to accept payment at the prices specified in the Schedule of Prices in Section FT-5 of the Tender, in accordance with the Contract Documents.

4.3 The Total Tender Price, based on the Schedule of Prices is:

_____

_____ DOLLARS

($_____)

**FT-5 Schedule of Prices**

5.1 The Schedule of Prices attached is Section FT-5.2 of the Tender.

This offer is made this_____day of_____, 20____

_____
Signature of Witness
(only if required by TC-1)

_____
Signature of Tenderer
(Corporate Seal if required by TC-1)

_____
Signature of Tenderer
(Second Signature if required by TC-1)

_____
Print Name of Tenderer(s)

## FT-5.2 SCHEDULE OF PRICES

| CONTRACT NUMBER T-2025-18<br>Supply and Deliver One (1) Fire Pumping Apparatus 4 Door | | | |
|---|---|---|---|
| Item | Spec. Code | Item Description | Total |
| 1 | SP-C-1 | Supply and Deliver One (1) New Pumper Fire Apparatus | |
| | | Less Concessions/Discounts on Item #1 | - |
| | | Total Tender Price (Transfer Amount to FT-4.3 of the Tender) | |

4.3 All prices to be shown excluding HST.

4.3 All prices shall be in Canadian Dollars and must **include FOB to the Port Carling Fire Station, 1 Lee Valley Drive Port Carling ON P0B 1J0**. Total bid price shall include applicable customs duty, excise tax, freight and freight tax, insurance, and all other charges of every kind attributable to the work

4.4 The Corporation of the Township of Muskoka Lakes is part of the Broader Public Service of the Province of Ontario and as such may be eligible for concessions (discounts) on vehicles included in the Ministry of Government Services Vendor of Record arrangement OSS-00634452. Any bids shall include such discounts when available.

# SECTION B

# FORM OF AGREEMENT

# TOWNSHIP OF MUSKOKA LAKES

# FORM OF AGREEMENT

This Form of Agreement witnesses that a Contract was made as of the___day of

_____ , 20___.

**BETWEEN:**

_____

_____

_____

_____

(after this called the “Contractor”)

**AND:**

**THE CORPORATION OF THE TOWNSHIP OF MUSKOKA LAKES**

(after this called the “Owner”)

**AND WITNESSES** that the Contractor and the Owner agree as follows:

**FA-1** The Contractor shall perform the following work:

Contract Number T-2025-18

Described as Supply and Deliver

One (1) New Pumper Fire Apparatus

_____

_____

**FA-2** The Contractor shall perform the work in accordance with the Contract Documents listed in the Tender.

**FA-3** The Owner shall pay the Contractor in accordance with the prices in the Schedule of Prices in the Tender pursuant to the Contract Documents.

**FA-4** The provisions of the Contract Documents shall endure to the benefit of and be binding upon the Contractor and the Owner and their respective heirs, legal representatives, successors and assigns.

**IN WITNESS WHEREOF** the Contractor and the Owner have executed, in the manner required by law, this Form of Agreement.

| | |
|---|---|
| _____ | _____ |
| *Signature* *Date* | *Signature* *Date* |
| Contractor<br>(Corporate Seal if required by TC-1) | Fire Chief |
| _____ | _____ |
| *Signature* *Date* | *Signature* *Date* |
| Contractor<br>(Second Signature if required by TC-1) | Treasure<br><br>_____ |
| _____ | |
| *Signature* *Date* | |
| Witness<br>(Only if required by TC-1) | |

# SECTION C

# SPECIAL PROVISIONS

# TOWNSHIP OF MUSKOKA LAKES

# SPECIAL PROVISIONS

# No. SP-C-1

## 1.0 SCOPE

**1.1** In this contract, *Owner, Township or Township of Muskoka Lakes* can be used interchangeably and means *The Corporation of the Township of Muskoka Lakes*.

**1.2** This tender is for the supply and delivery of one new pumper fire apparatus as specified. All vehicles shall come fully equipped as specified and fully ready for service upon delivery.

**1.3** The Contractor shall be a factory authorized dealer and be a licensed Motor Vehicle dealer for the Province of Ontario.

**1.4** The Contractor shall abide by all Federal, Provincial and Municipal Laws, Acts, Ordinances, Regulations, Orders-in-Council and By-laws at all times relative to the performance of the work. This shall include full compliance with the Occupational Health and Safety Act.

## 2.0 TRADE IN

**2.1** The trade-in vehicle is as follows:
**NO TRADE IN VEHICLE**

**2.2** The trade-in vehicle will be traded in “as is” condition and is not represented as being in road worthy condition, mechanically sound or maintained at any guaranteed level of quality.

**2.3** The trade-in vehicle will not include the following equipment:

The stated mileage and hours are approximate at the time of tendering and the Contractor acknowledges and accepts that the Owner may continue to use this vehicle until such time that it is traded-in and the stated mileage and hours will be subject to change.

**2.4** The trade-in vehicle value is to be included on *FT 5.2 Schedule of Prices – Summary* in the Form of Tender. The Township has sole discretion whether to proceed with the trade-in based on the best value to the Township. The trade-in vehicle shall be transferred to the Contractor upon delivery of the new vehicle if the Township opts to exercise this option.

**2.5** The trade-in vehicle will be available for viewing Monday to Thursday 7:30 am to 4:00 pm or on Fridays 7:30 am to 11:00 am and shall not occur on any Provincial and/or Federal statutory holidays (including Easter Monday and Civic Holiday). For questions regarding the trade-in and/or to arrange a viewing, please contact Ryan Murrell, Fire Chief via email at - rmurrell@muskokalakes.ca.

## 3.0 PAINT COLOUR

**3.1** Paint colours shall be as specified in the Schedule of Specifications in the Form of Tender. Final approval for all paint colours must be provided by the Owner prior to ordering. Approval by the Owner will occur within 5 business days of receiving the paint samples from the Contractor. On pages C7, C8, and C9 images of the paint schemes can be seen.

## 4.0 DELIVERY

**4.1** Delivery shall be to the **Muskoka Lakes Fire Department Station # 6 Port Carling at 1 Lee Valley Drive, Port Carling, ON, P0B 1J0.** A minimum of 48 hours' notice shall be provided to **Ryan Murrell, Fire Chief by phone at 705 646 5282 or via email at rmurrell@muskokalakes.ca .** Delivery shall occur Monday to Thursday 9:00 am to 4:00 pm local time and shall not occur on any Provincial and/or Federal statutory holidays (including Easter Monday and Civic Holiday).

**4.2** Delivery shall occur no later than December 1, 2025.

**4.3** An authorized representative of the manufacturer shall provide demonstration of the completed vehicle. One (1) day of orientation shall be provided and performed by a qualified representative of the manufacturer.

## 5.0 CONCESSIONS AND DISCOUNTS

**5.1** The Corporation of the Township of Muskoka Lakes is part of the Broader Public Service of the Province of Ontario and as such may be eligible for concessions (discounts) on vehicles included in the Ministry of Government Services Vendor of Record arrangement OSS - 00634452. Any bids shall include such discounts where possible.

## 6.0 EXTRA WORK, ADDITIONAL WORK AND/OR CHANGES IN THE WORK

**6.1** No Extra Work, Additional Work and/or Changes in the Work shall be completed without the prior written approval of the Contract Administrator.

**6.2** Extra Work, Additional Work and/or Changes in the Work must be identified as such by the Contractor when submitting the request for approval and no claims shall be made related to delays by the Contractor in requesting approval to complete Extra Work, Additional Work and/or Changes in the Work.

**6.3** Despite anything stated elsewhere in the Contract, approval from the Contract Administrator shall be received before completing any Extra Work, Additional Work and/or Changes in the Work. Failure to obtain prior written approval may result in non- payment for this portion of the work.

## 7.0 INDEMNIFICATION

**7.1** The contractor shall indemnify and hold the Corporation of the Township of Muskoka Lakes harmless from and against all claims, liability, losses, actions, demands, damages, costs and expenses, including reasonable legal fees, occasioned wholly or in part by any negligence acts or omissions, whether willful or otherwise by the contractor, its agents, officers, employees or other persons for whom the contractor is legally responsible in the performance of this agreement.

## 8.0 PAYMENT

**8.1** Payment at the contract price for the tender item shall include full compensation for all labour, equipment and materials required to complete the work as per the tender documents.

**8.2** The Township shall pay for the Work upon completion and receipt of an itemized invoice sent in by the Contractor to the Accounts Payable Department at ap@muskokalakes.ca. All invoices related to this tender shall reference the tender number and the purchase order number provided.

**8.3** The Township's standard payment term is net thirty (30) days but failure to submit an invoice with the required information could result in delay of payment.

**8.4** The Township pays the Harmonized Sales Tax (HST) where applicable and should be shown separately on the invoice. The Contractor shall include the HST Registration Number on all invoices.