



Request for Proposal

For: The purchase of a Stock Four Door Side Control Pumper meeting the following requirements or equivalent

Request #2017-005

Date: March 15, 2017

Municipality of French River

44 St. Christophe Street

P.O. Box 156

Noëlville, ON, P0M 2N0

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Confidentiality Statement

This document, and any attachments there to, regardless of form or medium, is intended only for use by the addressee(s) and may contain legally privileged and/or confidential, copyrighted, trademarked, patented or otherwise restricted information viewable by the intended recipient only. If you are not the intended recipient of this document, please respond to the originator of this message and permanently dispose any copies and any attachments. Thank you for your consideration, Municipality of French River. Please respond to mgagnon@frenchriver.ca with any questions or concerns.

Submission Details

Submission Deadlines and Methods

All submissions for responding to this request must be submitted to our office, as stated below, no later than:

April 15, 2017 -No later than 2:00pm Local Time

All Proposal will be opened on April 13, 2017 at 3pm Local Time

The use of mail for delivery of a proposal will be at the risk of the respondent. Submissions sent in electronic format will **not** be accepted.

Proposals must be submitted in a sealed envelope and shall be clearly marked with the following:

- Name and address of the Respondent
- Request Number
- Project Title

Administration staff will affix on the sealed envelope:

- Date and time of receipt

Submission Delivery Address, Submission Questions and Clarifications

You may contact the following person if you have any questions or require clarification on any topics covered in this Request for Proposal. The delivery address to be used for all submissions is:

Denis Seguin, Fire Chief
Municipality of French River
44 St. Christophe Street Suit 1
P.O. Box 156
Noëlville, ON, P0M 2N0
Tel: 705-898-2811
Fax: 705-898-2181
Email: dseguinfrenchrivier.ca

Submission Opening

Proposals will be publicly opened, and recorded on the date and time stated above at the Municipal office. Staff will review the proposal and the successful candidate will be advised.

Amendment and Withdrawal of Submission

Requests for withdrawal of a submission shall be allowed if the request is made before the closing time for the contract to which it applies. Requests shall be directed to the CAO by letter or in person, by a Senior Official of the company, with a signed withdrawal confirming the details. Telephone requests shall not be considered. The withdrawal of a submission does not disqualify a bidder from submitting another proposal on the same contract.

Introduction and Executive Summary

The Municipality of French River (herein after referred to as the Municipality) is requesting proposal for the "Purchase of One New 2016, 2017 or Demo Stock Four Door Side Control Pumper Truck".

Business Overview & Background

The Municipality of French River is a vibrant, welcoming and family-based community that is committed to positive, sustainable growth. A scenic environment, friendliness of neighbors, diversity of cultures and small town feel make French River the community of choice to live, work, visit and vacation. The Fire Department has a need to replace a fire services vehicle used for emergency response to a variety of incidents.

Assumptions & Constraints

The Municipality will not be held liable for any errors or omissions in any part of this request. The information contained herein is supplied solely as a guideline for responding vendors. The information is not guaranteed or warranted to be accurate by the Municipality, nor is it necessarily comprehensive or exhaustive. Nothing in this request is intended to relieve vendors from forming their own opinions and conclusions with respect to the matters addressed in this request. Should the Municipality be contacted, no oral explanation or interpretation will modify any of the requirements or provisions of the proposal documents. No addenda to this request will be issued.

The successful vendor will provide continuous and adequate protection of all work from damage and will protect the Municipality's property from injury or damage arising from or in connection with this work. The successful vendor will have made good any such damage or injury.

The successful vendor will employ only orderly, competent and skillful employees to ensure that the services are carried out in a confidential and respectable manner.

The successful vendor will ensure all services and products provided in respect to this proposal are in accordance with, and under authorization of all applicable authorities, municipal, provincial and/or federal legislation.

The successful vendor and its employees may have access to information confidential to the Municipality. This information may include, but is not limited to, terms of this agreement, business methods and systems, contractual terms, pricing, personal information, etc. subject to disclosure by force of law, the successful vendor agrees that it and its employees who have access to this information will not either during the term of the agreement or at any time thereafter reveal to any third party any of this confidential information or use in any way, whether on the successful vendor's behalf or on behalf of any third party, any such information

The information, reports, documentation, plans, etc. that are a product of this award by the successful vendor, will become the exclusive property of the Municipality of French River.

Terms and Conditions

Relating to the submission document:

- Costs, Deliverables & Timelines** – as set out in Schedule “A”
- Provincial and Federal Taxes (H.S.T.)** - Proposals shall include applicable H.S.T. taxes. This tax shall be shown separate from the unit price. The respondent shall include with the executed documents, at the time of submission, on company letterhead, notification to the Municipality of their H.S.T. Registration Number (if any)
- Declaration** - Signed declaration must be submitted (Page #9)
- Specification** – Ensure that the specification form is filled out Schedule “B”
- Other** - Vendors may include any addition information regarding their firm and/or services that may prove beneficial to the evaluation of the proposal. These would be provided in the form of appendices.

Relating to the Successful respondent:

- Contract** - The successful respondent may, within ten (10) days after being advised that they are the successful respondent, execute a contract in duplicate to the Municipality. A delivery date will also be agreed upon; should the agreed upon delivery date not be met, then a late fee of \$1,000.00 per week will be imposed. This late fee will be charged until the proposed truck is received and accepted by the Municipality of French River. Any/all late fees shall be paid by separate payment from the supplier.
- Notice of Acceptance** - Notice of acceptance may be made by fax or telephone, with written confirmation of same to follow, to the successful respondent at the number given by the respondent.
- Price** - The vendor shall abide by the price total price stated in the submission document. No further payments beyond the contract amount will be made for any additional services required to provide a satisfactory deliverable. If additional requirements are requested by the Municipality beyond the original scope of work described in this request, the cost of these services would be negotiated between the Municipality and the company that has been selected to perform the work. Any additional work will only be undertaken based on a request in writing from the Municipality of French River.
- Payment** - shall be made upon receipt of invoice following the receipt of the product (net 30 days) with completion of the work to the satisfaction of the Municipality.
- Termination** - The Municipality reserves the right to immediately terminate the contract for sufficient cause, including but not limited to such items as non-performance, late deliveries, inferior quality, pricing problems, etc.
- Public Record** - Any personal information required on the proposal form is received under the authority of the Municipality of French River. This information will be an integral component of the quote submission. All written proposals received by the Municipality become a public record; once a proposal is accepted by the Municipality, and a contract is signed, all information contained in it is available to the public including personal information.
- Servicing manuals** - need to be provided with the final product
- Parts and Service** – Parts and services must be available regionally within the (Sudbury or Nipissing district)

Selection Criteria

The Municipality of French River is not obligated to award the service contract to the lowest or any firm. The Municipality reserves the right to reject any or all proposals and to waive formalities as the interests of the Municipality may require without stating reasons. The Municipality will not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any vendor by reason of the acceptance or the non-acceptance by the Municipality of any proposal or by reason of any delay in the acceptance of a proposal as well Any expenses incurred by the vendor in the preparation of the proposal submission are entirely the responsibility of the vendor and will not be charged to the Municipality.

Approval for Release

Reviewed by:

Denis Seguin, Fire Chief

Date

Mike Lalonde, MFR Mechanic

Date

Tom Ng, CGA, Treasurer

Date

Marc Gagnon, CAO

Date

Declaration

To: The Municipality of French River

Sirs: I/We the undersigned acknowledge receipt of and having carefully examined the Request for Proposal, and "Specifications" set forth in schedule "B" and hereby offer to submit this proposal for the supply of one (1) 2017 Stock Four Door Side Control Pumper Truck" in accordance with, and as required by the said documents at the price set forth in "Schedule "A" hereto.

I/We understand and accept that the prices set forth in this Proposal Form include full compensation to furnish all labour, equipment, materials and supplies and transportation necessary or incidental to completing the work in strict accordance with said documents.

I/We understand that this Agreement terminates in the event that I fail to perform the work to the satisfaction of the Municipality.

I/We understand that the lowest or any proposal will not necessarily be accepted and that TO BE CONSIDERED, Proposal Forms must be in by the closing date stated herein.

GENERAL CONDITIONS

1. The respondent shall discharge all liabilities incurred by him for labour, materials and services used or reasonably required for use in the performance of this Agreement on the date upon which each becomes due and all liabilities incidental thereto.
2. The respondent understands and agrees that he is not, nor is anyone hired by him, covered by the Municipality under The Workers' Compensation Act, and he shall be responsible for, and shall pay all dues and assessments payable under The Workers' Compensation Act, The Unemployment Insurance Act or any other Act, whether Provincial or Federal, in respect of himself, his employees and operations, and shall, upon request, furnish the Municipality with satisfactory evidence that he has complied with the provisions of any such Act. If he fails to do so, the Municipality shall have the right to withhold payment of such sum or sums of money due to him/her that would be sufficient to cover his/her default and the Municipality shall have the right to same.
3. The respondent covenants and agrees with the Municipality to indemnify it and save it harmless from all claims by third parties arising out of the performance of this Agreement.
4. The price, as proposed by the respondent, includes all limits of the work project.
5. The respondent declares that he has or will pay forthwith all Provincial and Federal Taxes that apply to the said equipment.
6. Notice of acceptance may be made by fax or telephone, with written confirmation of same to follow, to the respondent at the numbers given by the respondent.
7. No facsimile of proposals are acceptable.
8. Any cost incurred due to charges being laid under the Health and Safety Act, Highway Traffic Act or the Ministry of Environment Rules and Regulations shall be the responsibility of the contractor.

Name and Address of the Respondent

Phone:

Fax:

Email:

The Respondent declares:

- No person, firm or Municipality other than the Respondent, has any interest in this proposal or in the proposed services for this proposal;
- This proposal is made without any connection, comparison of figures or arrangements with or knowledge of any other Municipality, firm or person making a proposal for the same service and is in all respect fair and without collusion or fraud;
- No member of the staff of the Municipality of French River is, or will become interested directly or indirectly; as a contracting party, partner shareholder, surety or otherwise; or in the performance of the service; or in the supplies, service or business to which it relates; or in any portion of the profits thereof; or in any of the monies to be derived there from;
- The content and requirements of this proposal document have been read and understood.
- All prices are quoted in Canadian funds.

All or any proposals not necessarily accepted.

Signed at _____ this ___ day of _____ 2017.

Print Name - Witness

Print – Respondent,

Title - Respondent

Signature - Witness

Signature – Respondent

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Schedule “A” – Price, Timetable and Deliverables

	QTY	Unit Price	Total
Base price for unit			
Freight and PDI			
Emergency Equipment			
Other (Please list)			
Subtotal:			
HST			
Total			

Price - for the supply of one (1)“Purchase of One 2017 Stock Four Door Side Control Pumper”

Timetable and Deliverables –

Delivery shall be _____ weeks from the time of order.

Please note that preferential treatment will be given to those dealers who can provide the truck in a shorter timeframe.

Schedule "B" – Specifications

INTENT

As per the specifications provided, each manufacturer is invited to submit pricing and delivery for one (1) Pumper Fire Apparatus.

Bidders shall reply to the specifications on the forms supplied.

All items in these specifications must be answered indicating compliance or noncompliance. Bidders shall state "Yes" for compliance or state the deviation. Information relating to the deviation may accompany this document including a separate cover letter and shall state the page and section for ease of reference.

The specifications shall be answered on the forms provided or the bid will be disqualified. Each bidder shall submit a set of specifications outlining the exact vehicle proposed.

Other bid forms or the submission of alternates, not detailed in the specifications, shall be cause for disqualification.

It is the intent that the specifications clearly identify the furnishing and delivery of a complete Pumper Fire Fighting Apparatus as specified.

Bids submitted will be reviewed and evaluated based on qualifications, bonding, quality programs, irregularities, delivery and price.

The purchaser shall be the sole determining organization as to the award of the bid, and the lowest price may not necessarily be accepted.

DEMONSTRATION

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.

SERVICE REQUIREMENTS

The bidder shall provide a "24 Hour", "7-Day Per Week" emergency parts and service toll free telephone number. This phone number must be listed on a separate statement included in the bid package, along with the contact name, business name, address, and phone number of the local service agency, which will service the vehicle after being placed into service.

The service agency shall be capable to perform all required service work, and shall also have at their disposal the ability to have any required subcontracting work, such as engine, transmission, etc. work performed on behalf of the apparatus manufacturer.

TESTING AND CERTIFICATION

The completed vehicle shall be tested and labeled to CAN/ULC-S515-13 by an independent third party certification organization.

The third party organization shall be accredited for testing systems on fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.

The certification organization shall not be owned or controlled by manufacturers or vendors of the apparatus being tested.

The certification organization shall be primarily engaged in certification work and shall not have a monetary interest in the product's ultimate profitability.

The certification organization shall witness all test and shall refuse to certify any test result for a system if the components do not pass the testing required by this system.

There shall be no conditional, temporary, or partial certification of test results.

Appropriate forms of data sheets shall be provided and used during testing.

Manufacturer's certification **is not** acceptable. (No exceptions)

The manufacturer shall be certified to ISO 9001

The completed vehicle shall undergo, prior to delivery, a two (2) hour road test with all applicable emergency equipment activated. A certification shall be provided to the purchaser outlining the results of this road test.

CARRYING CAPACITY PLATE

A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab.

Another warning label shall be provided in the cab within sight of the driver that the occupants must be seated and belted.

DIELECTRIC VOLTAGE TESTING

The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.

WARNING LABELS

A plate visible to the driver shall show the height, length & GVWR of the completed vehicle.

FLUID CAPACITY AND TYPE LABEL

A permanent label shall be provided and shall state the type and quantity of the following fluids used in the vehicle:

- Engine Oil
- Engine Coolant
- Chassis Transmission Fluid
- Drive Axle Fluid
- Pump Gear Case
- Primer Lubricant (If Applicable)

REQUIREMENTS OF THE APPARATUS MANUFACTURER

The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, Partnership, or that is a company 100% held in North America.

All chassis, pumps and major components must be manufactured in North America and must be able to supply parts for an emergency vehicle within 48 hours.

Proposals from any manufacturer that is fully or partially owned and/or operated by a Foreign Company, Corporation, Partnership, or that is a company under any type of ownership partnership, or any similar type of agreement will be rejected immediately and their bid disqualified.

ENGINEERING DRAWINGS

Engineering drawings shall be submitted to the purchaser prior to commencement of the manufacturing process.

These drawings shall show at a minimum the front, left, right and rear views of the vehicle, as it will look at the time of completion.

A copy of this drawings shall be signed and returned to the apparatus manufacturer and become part of the vehicle contract.

BODY MANUAL - CD

One (1) compact disc manual(s) shall be provided on operation of the complete apparatus. The CD manual(s) shall include a troubleshooting guide complete with a recommended daily, weekly and annual maintenance procedures.

The apparatus manufacturer shall supply a complete wiring diagram for the color coded wiring harness.

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CHASSIS SPECIFICATIONS

A Freightliner four door chassis shall be supplied as per the following specifications.

Vehicle Configuration		Conforms?		Substitution
001-172	M2 106 CONVENTIONAL CHASSIS	YES	NO	
004-216	MODEL YEAR SPECIFIED	YES	NO	
002-004	SET BACK AXLE - TRUCK	YES	NO	
019-002	STRAIGHT TRUCK PROVISION	YES	NO	
003-001	LH PRIMARY STEERING LOCATION	YES	NO	
General Service		Conforms?		Substitution
AA1-002	TRUCK CONFIGURATION	YES	NO	
AA6-003	DOMICILED, CANADA (OTHER THAN QUEBEC)	YES	NO	
RCE-00F	FIXED CANADIAN EXCHANGE	YES	NO	
A85-020	FIRE SERVICE	YES	NO	
A84-1EV	EMERGENCY VEHICLES BUSINESS SEGMENT	YES	NO	
AA4-002	LIQUID BULK COMMODITY	YES	NO	
AA5-002	TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS	YES	NO	
AB1-008	MAXIMUM 8% EXPECTED GRADE	YES	NO	
AB5-001	SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE	YES	NO	
995-091	MEDIUM TRUCK WARRANTY	YES	NO	

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	A66-99D	EXPECTED FRONT AXLE(S) LOAD : 12000.0 lbs	YES	NO	
	A68-99D	EXPECTED REAR DRIVE AXLE(S) LOAD : 24000.0 lbs	YES	NO	
	A63-99D	EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 36000.0 lbs	YES	NO	
Truck Service					
			Conforms?	Substitution	
	AA3-031	FIRE TANK - NO MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP	YES	NO	
	A88-99D	EXPECTED TRUCK BODY LENGTH : 0.0 ft	YES	NO	
	AF7-99D	EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in	YES	NO	
Engine					
			Conforms?	Substitution	
	101-2XE	CUM ISL 300 HP @ 2000 RPM, 2200 GOV RPM, 860 LB/FT @ 1300 RPM	YES	NO	
Electronic Parameters					
			Conforms?	Substitution	
	79A-062	62 MPH ROAD SPEED LIMIT	YES	NO	
	79B-000	CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT	YES	NO	
	79K-007	PTO MODE ENGINE RPM LIMIT - 1100 RPM	YES	NO	
	79M-001	PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED	YES	NO	
	79P-002	PTO RPM WITH CRUISE SET SWITCH - 700 RPM	YES	NO	
	79Q-003	PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM	YES	NO	
	79S-001	PTO MODE CANCEL VEHICLE SPEED - 5 MPH	YES	NO	

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	79U-007	PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND	YES	NO	
	80G-002	PTO MINIMUM RPM - 700	YES	NO	
	80J-002	REGEN INHIBIT SPEED THRESHOLD - 5 MPH	YES	NO	
Engine Equipment		Conforms?	Substitution		
	99C-015	2015 ONBOARD DIAGNOSTICS/2010 EPA/CARB/GHG14	YES	NO	
	99D-010	NO 2008 CARB EMISSION CERTIFICATION	YES	NO	
	13E-001	STANDARD OIL PAN	YES	NO	
	105-001	ENGINE MOUNTED OIL CHECK AND FILL	YES	NO	
	133-004	ONE PIECE VALVE COVER	YES	NO	
	014-1BX	SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER	YES	NO	
	124-1E1	DR 12V 200 AMP 28-SI QUADRAMOUNT PAD ALTERNATOR WITH REMOTE BATTERY VOLT SENSE	YES	NO	
	292-1D8	(2) ALLIANCE MODEL 1131, GROUP 31, 12 VOLT MAINTENANCE FREE 1900 CCA THREADED STUD BATTERIES, NON FCCC ONLY			
	290-017	BATTERY BOX FRAME MOUNTED	YES	NO	
	281-001	STANDARD BATTERY JUMPERS	YES	NO	
	282-001	SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB	YES	NO	

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	291-017	WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN	YES	NO	
	289-001	NON-POLISHED BATTERY BOX COVER	YES	NO	
	293-058	POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT	YES	NO	
	107-032	CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE	YES	NO	
	108-002	STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR	YES	NO	
	131-013	AIR COMPRESSOR DISCHARGE LINE	YES	NO	
	152-039	GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING	YES	NO	
	128-076	CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY TURBO WITH ON/OFF DASH SWITCH	YES	NO	
	016-1DC	RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES	YES	NO	
	28F-002	ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD REGENERATION AND DASH MOUNTED REGENERATION REQUEST SWITCH	YES	NO	

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239-001	STANDARD EXHAUST SYSTEM LENGTH	YES	NO	
237-022	RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90 DEGREES	YES	NO	
23U-001	6 GALLON DIESEL EXHAUST FLUID TANK	YES	NO	
30N-003	100 PERCENT DIESEL EXHAUST FLUID FILL	YES	NO	
43X-002	LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION	YES	NO	
23Y-001	STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING	YES	NO	
43Y-001	STANDARD DIESEL EXHAUST FLUID TANK CAP	YES	NO	
273-018	HORTON DRIVEMASTER ON/OFF FAN DRIVE	YES	NO	
276-002	AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT, NON ENGINE MOUNTED	YES	NO	
110-003	CUMMINS SPIN ON FUEL FILTER	YES	NO	
118-008	COMBINATION FULL FLOW/BYPASS OIL FILTER	YES	NO	
266-013	1100 SQUARE INCH ALUMINUM RADIATOR	YES	NO	
103-037	ANTIFREEZE TO -60F, ETHYLENE GLYCOL PRE-CHARGED SCA HEAVY DUTY COOLANT	YES	NO	
171-007	GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT	YES	NO	
172-001	CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES	YES	NO	

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	270-016	RADIATOR DRAIN VALVE	YES	NO	
	168-002	LOWER RADIATOR GUARD	YES	NO	
	138-011	PHILLIPS-TEMRO 1000 WATT/115 VOLT BLOCK HEATER	YES	NO	
	140-053	BLACK PLASTIC ENGINE HEATER RECEPTACLE MOUNTED UNDER LH DOOR	YES	NO	
	134-001	ALUMINUM FLYWHEEL HOUSING	YES	NO	
	132-004	ELECTRIC GRID AIR INTAKE WARMER	YES	NO	
	155-058	DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH	YES	NO	
Transmission			Conforms?		Substitution
	342-1KD	ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION	YES	NO	
Transmission Equipment			Conforms?		Substitution
	343-331	ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL EVS	YES	NO	
	84B-003	ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES	YES	NO	
	84C-023	PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY	YES	NO	

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84D-023	SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY	YES	NO	
84N-000	NEUTRAL AT STOP - DISABLED, FUELSENSE - DISABLED	YES	NO	
353-022	VEHICLE INTERFACE WIRING WITH BODY BUILDER CONNECTOR MOUNTED BACK OF CAB, NO BLUNT CUTS	YES	NO	
34C-002	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR MOUNTED BACK OF CAB	YES	NO	
362-807	CUSTOMER INSTALLED MUNCIE CS41 SERIES PTO	YES	NO	
363-001	PTO MOUNTING, LH SIDE OF MAIN TRANSMISSION	YES	NO	
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN	YES	NO	
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED	YES	NO	
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013	YES	NO	
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK	YES	NO	
346-003	TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK	YES	NO	
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)	YES	NO	

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Front Axle and Equipment		Conforms?		Substitution
400-1A6	DETROIT DA-F-12.0-3 12,000# FF1 71.5 KPI/3.74 DROP SINGLE FRONT AXLE	YES	NO	
402-050	MERITOR 16.5X5 Q+ CAST SPIDER HEAVY DUTY CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES	YES	NO	
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING	YES	NO	
419-023	CONMET CAST IRON FRONT BRAKE DRUMS	YES	NO	
427-001	FRONT BRAKE DUST SHIELDS	YES	NO	
409-021	SKF SCOTSEAL PLUS XL FRONT OIL SEALS	YES	NO	
408-001	VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL	YES	NO	
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES	YES	NO	
405-002	MERITOR AUTOMATIC FRONT SLACK ADJUSTERS	YES	NO	
536-050	TRW THP-60 POWER STEERING	YES	NO	
539-003	POWER STEERING PUMP	YES	NO	
534-015	2 QUART SEE THROUGH POWER STEERING RESERVOIR	YES	NO	
40T-001	ORGANIC SAE 80/90 FRONT AXLE LUBE	YES	NO	

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Front Suspension			Conforms?		Substitution
	620-1F0	12,000# DUAL TAPERLEAF FRONT SUSPENSION	YES	NO	
	619-005	MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION	YES	NO	
	410-001	FRONT SHOCK ABSORBERS	YES	NO	
Rear Axle and Equipment			Conforms?		Substitution
	420-265	RS-23-161 24,000# R-SERIES FIRE/EMERGENCY SERVICE SINGLE REAR AXLE	YES	NO	
	421-538	5.38 REAR AXLE RATIO	YES	NO	
	424-001	IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING	YES	NO	
	386-073	MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES	YES	NO	
	423-039	MERITOR 16.5X7 Q+ CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR HEAVY DUTY BRAKE AND SHOES	YES	NO	
	433-025	FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING	YES	NO	
	434-011	BRAKE CAMS AND CHAMBERS ON FORWARD SIDE OF DRIVE AXLE(S)	YES	NO	
	451-030	WEBB HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS	YES	NO	
	425-002	REAR BRAKE DUST SHIELDS	YES	NO	
	440-021	SKF SCOTSEAL PLUS XL REAR OIL SEALS	YES	NO	

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	426-074	HALDEX GOLDSEAL LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS	YES	NO	
	428-003	HALDEX AUTOMATIC REAR SLACK ADJUSTERS	YES	NO	
	41T-001	ORGANIC SAE 80/90 REAR AXLE LUBE	YES	NO	
Rear Suspension					
	622-1DE	27,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD FOR FIRE/EMERGENCY SERVICE	YES	NO	
	621-001	SPRING SUSPENSION - NO AXLE SPACERS	YES	NO	
	431-001	STANDARD AXLE SEATS IN AXLE CLAMP GROUP	YES	NO	
	623-005	FORE/AFT CONTROL RODS	YES	NO	
Brake System					
	018-002	AIR BRAKE PACKAGE	YES	NO	
	490-100	WABCO 4S/4M ABS WITHOUT TRACTION CONTROL	YES	NO	
	871-001	REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES	YES	NO	
	904-001	FIBER BRAID PARKING BRAKE HOSE	YES	NO	
	412-001	STANDARD BRAKE SYSTEM VALVES	YES	NO	
	46D-002	STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM	YES	NO	
	413-002	STD U.S. FRONT BRAKE VALVE	YES	NO	

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	432-003	RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE	YES	NO	
	480-009	BW AD-9 BRAKE LINE AIR DRYER WITH HEATER	YES	NO	
	479-003	AIR DRYER MOUNTED INBOARD ON LH RAIL	YES	NO	
	460-001	STEEL AIR BRAKE RESERVOIRS	YES	NO	
*	607-001	CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET BOTH RAILS OUTBOARD NEED 50" INSIDE RAIL CLEAR BOC ALSO	YES	NO	
	477-004	PULL CABLES ON ALL AIR RESERVOIR(S)	YES	NO	
Trailer Connections			Conforms?	Substitution	
	335-004	UPGRADED CHASSIS MULTIPLEXING UNIT	YES	NO	
	32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT	YES	NO	
Wheelbase & Frame			Conforms?	Substitution	
	545-587	5875MM (231 INCH) WHEELBASE	YES	NO	
	546-100	11/32X3-1/2X10-3/16 INCH STEEL FRAME (8.73MMX258.8MM/0.344 X10.19 INCH) 120KSI	YES	NO	
	552-022	1300MM (51 INCH) REAR FRAME OVERHANG	YES	NO	
	55W-005	FRAME OVERHANG RANGE: 51 INCH TO 60 INCH	YES	NO	
	AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 118.2 in	YES	NO	

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	AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 115.2 in	YES	NO	
	AE4-99D	CALC'D FRAME LENGTH - OVERALL : 311.39	YES	NO	
	AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE : 118.2 in	YES	NO	
	FSS-0LH	CALCULATED FRAME SPACE LH SIDE : 200.75 in	YES	NO	
	FSS-0RH	CALCULATED FRAME SPACE RH SIDE : 174.61 in	YES	NO	
	553-001	SQUARE END OF FRAME	YES	NO	
	587-003	REAR TOW HOOKS	YES	NO	
	550-001	FRONT CLOSING CROSSMEMBER	YES	NO	
	559-001	STANDARD WEIGHT ENGINE CROSSMEMBER	YES	NO	
	562-001	STANDARD MIDSHIP #1 CROSSMEMBER(S)	YES	NO	
	572-001	STANDARD REARMOST CROSSMEMBER	YES	NO	
	565-001	STANDARD SUSPENSION CROSSMEMBER	YES	NO	
Chassis Equipment					
			Conforms?	Substitution	
	556-1CW	THREE-PIECE 14 INCH CHROME STEEL BUMPER WITH COLLAPSIBLE ENDS AND LH WING CUTOUT FOR FEDERAL MS100/ES100/ES100C SPEAKER	YES	NO	
	558-001	FRONT TOW HOOKS - FRAME MOUNTED	YES	NO	
	574-001	BUMPER MOUNTING FOR SINGLE LICENSE PLATE	YES	NO	

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	586-024	FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS	YES	NO	
	551-007	GRADE 8 THREADED HEX HEADED FRAME FASTENERS	YES	NO	
	970-038	TANK BODY 0 TO 1500 GALLONS	YES	NO	
Fuel Tanks			Conforms?		Substitution
	204-215	50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK - LH	YES	NO	
	218-005	RECTANGULAR FUEL TANK(S)	YES	NO	
	215-005	PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS	YES	NO	
	212-007	FUEL TANK(S) FORWARD	YES	NO	
	664-001	PLAIN STEP FINISH	YES	NO	
	205-001	FUEL TANK CAP(S)	YES	NO	
	122-077	ALLIANCE FUEL FILTER/WATER SEPARATOR WITH HEATED BOWL AND PRIMER PUMP	YES	NO	
	216-020	EQUIFLO INBOARD FUEL SYSTEM	YES	NO	
	20E-004	AUXILIARY FUEL SUPPLY AND RETURN PORTS LOCATED ON LH FUEL TANK	YES	NO	
	202-016	HIGH TEMPERATURE REINFORCED NYLON FUEL LINE	YES	NO	

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Tires		Conforms?		Substitution
093-2B1	MICHELIN XZA3+ 11R22.5 14 PLY RADIAL FRONT TIRES	YES	NO	
094-0DJ	MICHELIN XDE M/S 11R22.5 16 PLY RADIAL REAR TIRES	YES	NO	
Hubs		Conforms?		Substitution
418-056	CONMET PRESET PLUS IRON FRONT HUBS	YES	NO	
450-056	CONMET PRESET PLUS IRON REAR HUBS	YES	NO	
Wheels		Conforms?		Substitution
502-524	MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 6.20 INSET 2-HAND STEEL DISC FRONT WHEELS	YES	NO	
505-524	MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 2-HAND STEEL DISC REAR WHEELS	YES	NO	
496-011	FRONT WHEEL MOUNTING NUTS	YES	NO	
497-011	REAR WHEEL MOUNTING NUTS	YES	NO	
Cab Exterior		Conforms?		Substitution
829-079	154 INCH BBC HIGH- ROOF ALUMINUM CONVENTIONAL CREW CAB	YES	NO	
650-008	AIR CAB MOUNTS	YES	NO	
678-018	LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT	YES	NO	
646-023	HOOD MOUNTED CHROMED PLASTIC GRILLE	YES	NO	
65X-003	CHROME HOOD MOUNTED AIR INTAKE GRILLE	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

644-004	FIBERGLASS HOOD	YES	NO	
690-002	TUNNEL/FIREWALL LINER	YES	NO	
726-001	SINGLE ELECTRIC HORN	YES	NO	
657-001	DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME	YES	NO	
575-001	REAR LICENSE PLATE MOUNT END OF FRAME	YES	NO	
312-038	INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL	YES	NO	
302-001	(5) AMBER MARKER LIGHTS	YES	NO	
311-001	DAYTIME RUNNING LIGHTS	YES	NO	
294-017	INTEGRAL STOP/TAIL/BACKUP LIGHTS WITH 7 EXTRA FEET OF WIRE AT END OF FRAME, BUNDLED AT MID CHASSIS	YES	NO	
300-015	STANDARD FRONT TURN SIGNAL LAMPS	YES	NO	
744-1BC	DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE	YES	NO	
797-001	DOOR MOUNTED MIRRORS	YES	NO	
796-001	102 INCH EQUIPMENT WIDTH	YES	NO	
743-204	LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS	YES	NO	
729-001	STANDARD SIDE/REAR REFLECTORS	YES	NO	
677-016	DUAL LEVEL CAB ENTRY STEPS ON BOTH SIDES	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

	768-043	63X14 INCH TINTED REAR WINDOW	YES	NO	
	661-003	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS	YES	NO	
	654-003	MANUAL DOOR WINDOW REGULATORS	YES	NO	
	663-013	TINTED WINDSHIELD	YES	NO	
	659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED	YES	NO	
Cab Interior Conforms? Substitution					
	707-1AK	OPAL GRAY VINYL INTERIOR	YES	NO	
	706-013	MOLDED PLASTIC DOOR PANEL	YES	NO	
	708-013	MOLDED PLASTIC DOOR PANEL	YES	NO	
	772-006	BLACK MATS WITH SINGLE INSULATION	YES	NO	
	694-010	IN DASH STORAGE BIN	YES	NO	
	742-007	(2) CUP HOLDERS LH AND RH DASH	YES	NO	
	680-006	GRAY/CHARCOAL FLAT DASH	YES	NO	
	860-004	SMART SWITCH EXPANSION MODULE	YES	NO	
	700-002	HEATER, DEFROSTER AND AIR CONDITIONER	YES	NO	
	701-001	STANDARD HVAC DUCTING	YES	NO	
	703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH	YES	NO	
	170-015	STANDARD HEATER PLUMBING	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

130-033	DENSO HEAVY DUTY AIR CONDITIONER COMPRESSOR	YES	NO	
702-002	BINARY CONTROL, R-134A	YES	NO	
739-034	PREMIUM INSULATION	YES	NO	
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES	YES	NO	
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM	YES	NO	
324-047	DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER	YES	NO	
655-001	CAB DOOR LATCHES WITH MANUAL DOOR LOCKS	YES	NO	
284-045	(2) 12 VOLT POWER RECEPTACLES MOUNTED IN DASH	YES	NO	
756-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009 COMPLIANT SEAT SENSOR	YES	NO	
762-1E9	SEATS INC 911 UNIVERSAL SERIES SCBA NON SUSPENSION PASSENGER SEAT WITH UNDER SEAT STORAGE AND NFPA 1901-2009 COMPLIANT SEAT SENSOR	YES	NO	
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 COMPLIANT SEAT SENSOR	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

	711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS	YES	NO	
	758-036	VINYL WITH VINYL INSERT DRIVER SEAT	YES	NO	
	761-036	VINYL WITH VINYL INSERT PASSENGER SEAT	YES	NO	
	755-022	GRAY VINYL REAR PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST	YES	NO	
	763-073	3 POINT HIGH VISIBILITY ORANGE RETRACTOR DRIVER, RH FRONT AND LH, CENTER AND RH REAR PASSENGER SEAT BELTS WITH NFPA 1901-2009 COMPLIANT SENSOR AND DASH HARNESS	YES	NO	
	532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN	YES	NO	
	540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL	YES	NO	
	765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS	YES	NO	
Instruments & Controls Conforms? Substitution					
	732-004	GRAY DRIVER INSTRUMENT PANEL	YES	NO	
	734-004	GRAY CENTER INSTRUMENT PANEL	YES	NO	
	87L-003	ENGINE REMOTE INTERFACE WITH PARK BRAKE AND NEUTRAL INTERLOCKS	YES	NO	
	870-001	BLACK GAUGE BEZELS	YES	NO	
	486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES	YES	NO	
198-003	DASH MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS	YES	NO	
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL	YES	NO	
156-007	KEY OPERATED IGNITION SWITCH AND INTEGRAL START POSITION; 4 POSITION OFF/RUN/START/ACCESSORY	YES	NO	
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED	YES	NO	
160-025	DIAGNOSTIC INTERFACE CONNECTOR, 9 PIN, SAE J1939, LOCATED BELOW DASH	YES	NO	
844-001	2 INCH ELECTRIC FUEL GAUGE	YES	NO	
148-073	ENGINE REMOTE INTERFACE FOR REMOTE THROTTLE	YES	NO	
163-001	ENGINE REMOTE INTERFACE CONNECTOR AT BACK OF CAB	YES	NO	
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE	YES	NO	
864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE	YES	NO	
830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY	YES	NO	
372-051	CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

736-998	NO OBSTACLE DETECTION SYSTEM	YES	NO	
73B-998	NO LANE DEPARTURE WARNING SYSTEM	YES	NO	
852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE	YES	NO	
679-001	OVERHEAD INSTRUMENT PANEL	YES	NO	
35M-008	SMARTPLEX HUB MODULE WITH OVERHEAD SWITCH MOUNTING, DRIVER AND PASSENGER SIDES AND CENTER CONSOLE (18 SWITCH SLOTS)	YES	NO	
749-001	ROOF/OVERHEAD CONSOLE CB RADIO PROVISION	YES	NO	
810-028	ELECTRONIC KPH SPEEDOMETER WITH SECONDARY MPH SCALE, WITHOUT ODOMETER	YES	NO	
817-001	STANDARD VEHICLE SPEED SENSOR	YES	NO	
812-001	ELECTRONIC 3000 RPM TACHOMETER	YES	NO	
162-002	IGNITION SWITCH CONTROLLED ENGINE STOP	YES	NO	
81Y-001	PRE-TRIP LAMP INSPECTION, ALL OUTPUTS FLASH, WITH SMART SWITCH	YES	NO	
44R-010	10 ON/OFF LATCHING SMARTPLEX SWITCHES	YES	NO	
44V-004	BATTERY ON SMARTPLEX INDICATOR LAMP	YES	NO	
44W-100	1-RED, 0-AMBER, 0- GREEN SMARTPLEX INDICATOR LAMPS	YES	NO	
836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY	YES	NO	

For the purchase of a Stock Four Door Side Control Pumper

	660-008	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY	YES	NO	
	304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH	YES	NO	
	27D-013	ALTERNATING FLASHING HEADLAMP SYSTEM WITH DASH SWITCH AND NO PARK BRAKE INTERLOCK	YES	NO	
	882-009	ONE VALVE PARKING BRAKE SYSTEM WITH WARNING INDICATOR	YES	NO	
	299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE	YES	NO	
	298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS	YES	NO	
Design Conforms? Substitution					
	065-000	PAINT: ONE SOLID COLOR	YES	NO	
Color Conforms? Substitution					
	980-2L4	CAB COLOR A: L2225EB CANDY APPLE RED ELITE BC	YES	NO	
	986-020	BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT	YES	NO	
Others Conforms? Substitution					
		6" Lightweight Suction Hoses x2	YES	NO	
		4" Front Intake	YES	NO	
		10" Rear Dump Valve	YES	NO	
		Portable Tank mount	YES	NO	
		Warranty on truck	YES	NO	
		Warranty on Paint	YES	NO	

SPEAKER COVER – BUMPER MOUNT

The chassis bumper shall come with a cut out for mounting the siren speaker behind. The cutout shall come with a stainless steel cover that is slotted to allow sound to pass thru.

The bumper shall be chromed after the cutout has been made (NO EXCEPTIONS)

CHASSIS WHEELS

The chassis wheels shall be painted to match the color of the completed vehicle.

CHASSIS PREPARATION

The chassis shall be carefully inspected for compliance to the required specifications and to assure that it is ready for apparatus construction.

Any components that require relocation or modification shall be done at this time.

EXHAUST SYSTEM

The chassis exhaust system shall be modified and routed to the right hand side of the apparatus ahead of the rear wheels. The end of the exhaust shall have a straight cut end which is suitable for a fire hall exhaust extraction system.

EXHAUST SYSTEM HEAT SHIELD

Where the chassis exhaust piping passes under or near a body compartment, the exhaust piping shall be shielded to prevent compartment exposure to radiant heat.

FRONT AND REAR MUD FLAPS

Four (4) heavy duty rubber rear mud flaps shall be provided and installed on the apparatus. The mud flaps shall be installed behind the front and rear wheels.

SCBA AIR BOTTLE BRACKET(S) - CHASSIS CAB

Three (4) SCBA air bottle holder bracket(s) shall be provided and installed in the chassis cab seating area.

Three (4) air bottle/air pack retaining strap(s) shall be installed in the center of the air pack bracket(s).

CHAINED IGNITION KEY

The key utilized for the ignition shall be securely chained to either the steering column or the cab dash to prevent loss or removal of the ignition key.

12V POLARIZED BATTERY INLET

A Kussmaul VW-8 12V / 15 amp wiring kit shall be provided complete with a weatherproof cover. This system shall allow the chassis batteries to be maintained at an operating level from an external charging source.

AIR INLET CONNECTION

There shall be an air inlet shoreline installed at the left cab door area and connected into the chassis air brake system. The air fitting for this inlet shall be male.

TRANSPORTATION ROAD SAFETY KIT

One (1) 2.5 lb. ABC vehicle type fire extinguisher with mounting bracket.

One (1) standard First Aid Kit shall be provided.

One (1) set of three (3) dual faced triangular warning flares to meet the Department of Transportation's Motor Vehicle Safety Standards.

4" REFLECTIVE PRIMARY STRIPING - CHASSIS CAB

There shall be a four inch wide reflective stripe applied to the left and right side of the chassis cab. The reflective stripe shall be a 3M Scotchlite product.

There shall be a one inch wide reflective stripe applied to the front of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

There shall be reflective striping applied to the interior chassis cab doors of the apparatus. The reflective stripe shall be a 3M Scotchlite product.

PUMP HOUSE

The pump house shall be a full frame module constructed from 2" x 2" x .188" and 3" x 3" x .25" (6061-T6 / 6063-T6) heavy-duty structural aluminum extrusions which shall provide maximum strength and durability.

The pump house shall be manufactured separately to allow for movement and flexibility.

The pump house shall be attached to the chassis frame with .25" thick heavy-duty mounting plates and .5" grade 8 cadmium plated bolts with self-locking nuts. A transition bracket with rubber mounts shall be installed to the chassis frame. The pump house shall then be mounted to the rubber mounts.

There shall be no exceptions to this section.

The front and rear of the pump house shall have 1/8" 3003 H14 Hi Shine checkerplate trim.

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

PUMPHOUSE FINISH

The pump house shall come with a natural aluminum finish that has been sanded.

CONTROL PANEL - SIDE

The pump operator's panel, and the right side pump panel shall be constructed from 1/8" aluminum with a black vinyl anti glare coating. Both the right side and left side pump panels shall be bolted to the pump house for ease of removal.

The pump operator's panel shall be manufactured in a two-tier design.

The bottom/lower tier (portion) shall be screwed into place and can be removable for servicing. The lower level contains all the valve controls, discharges, suctions, drains, etc. All suction and discharge ports exiting through the panels shall be laser cut to provide a smooth exact fit. No cover overlay plates shall be used.

The top tier (portion) of the panel shall be bottom hinged with a stainless steel piano hinge and shall have two (2) lift and turn twist lock latches located at the top of the panel for pump and gauge servicing. This panel shall contain all gauges and monitoring instruments.

All gauges and controls shall be symmetrically and logically laid out to easily enable the pump operator to monitor all aspects of pump operation.

All valve controls shall be made by use of heavy-duty steel rods, pivots, and Class I operators.

Auxiliary suction valve controls shall be lever controlled adjacent to the suction swivel. The auxiliary suction valve shall be installed behind the pump panel.

PUMP INSPECTION DOOR

The pump house interior shall be accessible by an inspection door on the right side. The inspection door shall be constructed from .125" aluminum high shine checker plate. The door shall be fastened to the upper portion of the pump house with stainless steel piano hinges. The locking mechanisms for the door shall be a set of two (2) lift and turn twist lock latches.

MASTER GAUGE TEST PORTS

The pump panel shall have master gauge test ports.

PUMP BYPASS CONTROL.

A bypass control shall be mounted at the pump operator panel to allow tank water to re circulate thru the pump to cool it.

AUXILLIARY HEAT EXCHANGER

There shall be an auxiliary heat exchanger mounted on the chassis. The controls for the heat exchanger shall be at the pump operator panel. The heat exchanger will allow for tank water to cool the chassis engine.

CROSSLAY HOSEBED

Two (2) crosslay hose beds shall be provided and installed transversely above the pump house and shall have vinyl hose matting flooring to allow for water drainage and air movement under the hose. A 3/16" aluminum divider shall separate the hosebeds. Each hosebed shall be sized to hold 200' of 1 3/4" hose.

CROSSLAY PLUMBING - 1.5" DISCHARGE

The plumbing on the 1.5" discharge(s) shall be heavy duty piping with Victaulic and Class 1 SBR synthetic rubber hose with stainless steel couplings.

Each discharge shall be equipped with a 90 degree swivel to allow them to be used from either side of the apparatus.

THREAD TYPE - DISCHARGE 1.5"

All 1.5" thread types shall be NPSH.

Valve - Elkhart Manual - 2"

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

CROSSLAY TARP

A heavy duty vinyl tarp cover shall be provided over the crosslay compartments and held in position with 1/4 turn fasteners. The vinyl tarp shall be red in color.

RUB RAILS - PUMPHOUSE RUNNINGBOARDS - NON SLIP

Three inch "C" channel aluminum rub rails shall be bolted into place with nylon spacers on the lower framework on the pump house running boards. The rub rail will extend to the outside edges of the running boards for protection from impact damage

The top surface of the rub rail shall have a non-slip surface meeting the requirements of NFPA 1901 for nonslip walking surfaces.

PUMP PANEL LIGHTS - LED - SIDE PANEL

There shall be a total of four (4) 6.5" x 3" Tecniq E10 clear LED dome lights, (two (2) each side) to adequately illuminate the side pump panels. The lights shall be mounted under a protective hood of the same material as the side pump panels. The lights shall be activated by a switch at the pump operator panel.

PRESSURE GOVERNOR, MONITORING, and MASTER PRESSURE DISPLAY

Fire Research In Control series TGA400-A00 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.

The following continuous displays shall be provided:

- Pump discharge; shown with four daylight bright LED digits more than 1/2" high

- Pump Intake; shown with four daylight bright LED digits more than 1/2" high

- Pressure / RPM setting; shown on a dot matrix message display

- Pressure and RPM operating mode LEDs

- Throttle ready LED

- Engine RPM; shown with four daylight bright LED digits more than 1/2" high

- Check engine and stop engine warning LEDs

- Oil pressure; shown on a dual color (green/red) LED bar graph display

- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display

- Transmission Temperature; shown on a dual color (green/red) LED bar graph display

- Battery voltage; shown on a dual color (green/red) LED bar graph display.

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.

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:

- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only).

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.

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.

WATER LEVEL GAUGE - FIRE RESEARCH TANK VISION

There shall be a Fire Research model WL2000 Tank Vision water level gauge provided on the operator panel. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright 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 aluminum, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 25%, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted on the outside of the water 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.

PUMP – HALE DSD

The pump shall be a Hale Pump, Model DSD 1250.

The pump shall be rated at : 5000 Liters per minute at 150 P.S.I.
1050 Imperial Gallons per minute at 150 P.S.I.
1250 U.S. Gallons per minute at 150 P.S.I.

The pump shall be the class "A" type and shall deliver the percentage of rated discharge at pressures indicated below.

- 100% of rated capacities at 150 PSI net pump pressure.
- 100% of rated capacities at 165 PSI net pump pressure.
- 70% of rated capacities at 200 PSI net pump pressure.
- 50% of rated capacities at 250 PSI net pump pressure.

The pump when dry shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds through 20 feet of suction hose of the appropriate size. An additional 15 seconds shall be allowed when the system includes an auxiliary 4" or larger front or rear intake pipe.

Pump Assembly

1. The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 1250 gallons per minute (U.S. GPM), NFPA-1901 rated performance.
2. The entire pump shall be assembled and tested at the pump manufacturer's factory.
3. The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.
4. The entire pump shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.
5. The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.
6. Pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.
7. Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.
8. The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
9. Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined hand ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
10. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.
11. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

Gearbox

1. Pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature..
2. The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.
3. All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust. (No exceptions.)
4. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.
5. If the gearbox is equipped with a power shift, the shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.
6. For automatic transmissions, three green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operators panel adjacent to the throttle control. For manual transmissions, one green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.

MASTER DRAIN VALVE

A Hale #DV-5 master drain valve shall be provided and plumbed at the lowest point of the plumbing.

PUMP OPERATION WARNING LABEL

There shall be a warning label mounted on the pump operators panel that states the following:

" **Warning:** Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations."

Hale Standard Gearbox

HALE AIR PUMP SHIFT

The drive unit shall be provided with a Hale #VPS air power shift system. The shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with a stainless steel shaft. An in-cab guarded electric control switch for rapid shift shall be provided that locks in to either the "road" or "pump" mode with a slight twist.

To the left of the air operated pump shift control in the cab, there shall be two indicator lights to positively show the position of the pump when the control lever is moved to the pump position. A GREEN light shall be energized when both the pump shift has been completed and the chassis

transmission is engaged in pump gear and shall be labeled "OK TO PUMP". Another GREEN indicator light shall be installed adjacent to the hand throttle on the pump operator's panel. This light shall be labeled "WARNING: DO NOT OPEN THROTTLE UNLESS LIGHT IS ON".

Hale ESP Oil Less Primer

The priming pump shall be a positive displacement, vane type and electrically driven. This primer shall be a Hale #ESP electric oil-less priming system. One (1) priming control shall both open the priming valve and start the priming motor.

The primer valve shall be connected to the top of both pump volutes making it possible to prime the pump no matter if the pump is in pressure or volume modes. If a front suction is supplied and additional line shall be connected to the highest point or points between the pump and the inlet thus insuring a complete prime.

PRIMING SYSTEM LABEL

The priming system shall be marked with a label to indicate proper operation.

6" MAIN SUCTION MANIFOLD - STAINLESS STEEL

There shall be a total of two (2) 6" main inlets on each side of the pump house.

The plumbing for the two (2) main suction inlets shall be single piece design manufactured from schedule 10 stainless steel with schedule 40 threaded fittings.

The suction manifold shall be bolted to the pump utilizing heavy duty grade 8 bolts for firm vibration free installation. A victaulic coupler is not acceptable. **(NO EXCEPTIONS)**

AUXILIARY SUCTION - ROAD SIDE

One (1) 2-1/2" gated inlet(s) shall be provided at the left side pump panel. The inlet(s) shall come complete with a chrome female swivel threaded adaptor. There shall be a chrome cap with the inlet(s) and the cap shall come with a chain that is attached to the pump operator panel.

The plumbing shall be schedule 10 stainless steel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. (No Exception).

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

SUCTION RELIEF VALVE

A 2-1/2" Elkhart model 40-20 flange mounted adjustable suction relief valve shall be provided and installed in the suction side of the pump. The discharge side of the valve shall be plumbed to the area below the running board, away from the pump operator, and shall terminate with a 2-1/2" NST male threaded adapter, marked "**INTAKE PRESSURE RELIEF OUTLET-DO NOT CAP**". The relief valve shall have an adjustable working range of 75 PSIG to 250 PSIG and be pre-set at 125 PSI..

TANK FILL LINE - PUMP TO TANK

There shall be a 2" discharge provided at the pump operator panel for a pump to tank line.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

DISCHARGE MANIFOLD - STAINLESS STEEL

All plumbing for the discharge manifold and discharge plumbing shall be schedule 10 stainless steel with schedule 40 threaded fittings. In some cases, heavy duty, high pressure, wire reinforced flexible hose with stainless steel couplings shall be utilized for plumbing connections.

Victaulic couplings shall be used on the plumbing lines to take tension off piping and to permit flexing and movement without damage to the pump and its components.

Heavy duty U-bolt clamps and bracing shall be used on all plumbing lines and connections were required for firm vibration free installation.

TANK SUPPLY LINE

A 4" tank supply line shall be installed from the tank to the pump. A 3" check valve shall be installed in the pump to eliminate the possibility of pressure expanding and damaging the tank.

Butterfly Valve

The valve shall be a 3" manually operated butterfly valve.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

2.5" DISCHARGE - LEFT SIDE

Two (2) 2.5" gated discharge(s) shall be provided at the right side pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. (No Exception).

Valve Actuator

The valve control shall be by a chrome swing handle located near the discharge.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

2.5" DISCHARGE - CURBSIDE

One (1) 2.5" gated discharge(s) shall be provided at the curbside pump panel.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the pump panel.

A rubber grommet shall enclose the plumbing coming out of the pump panel for maximum heat retention in the pump house. (No Exception).

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

3" DELUGE GUN DISCHARGE WITH SLO-CLOZ

A 3" deluge gun discharge shall be provided and installed above the pump house. The plumbing leading to the monitor standpipe shall be schedule 40 stainless steel plumbing. A threaded cap shall come with the monitor standpipe if no monitor is ordered.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

THREAD TYPE - DISCHARGE 2.5"

The threads that shall be provided for the 2.5" Discharges and 2.5" Suction Inlets shall be WCT.

2.5" DISCHARGE - REAR

One (1) 2.5" gated discharge(s) shall be provided at the rear of the apparatus.

The plumbing leading to the rear discharge shall be high pressure Class 1 hose and schedule 10 stainless steel with schedule 40 threaded fittings.

This discharge(s) shall be equipped with a chrome 30 degree adapter, chrome plated rocker lug cap, and retaining chain that is attached to the apparatus body.

Valve Actuator

The valves shall have chrome T handle actuators. For chemical and wear resistance a Lamacoid label specifying the discharge shall be inset into the T handle actuator. The label shall be color coded as per NFPA 1901 requirements.

Drain Valves

A drain shall be installed at the pump panel. The drain shall have 3/4" synflex drain lines tied to a 1/4 turn drain valve with high pressure brass fittings.

FOAM PRO 1600 FOAM SYSTEM

The vehicle shall be equipped with an electronic, fully automatic, variable speed direct injection, discharge side foam proportioning system. The system shall be capable of handling Class "A" foam concentrate. The foam system shall be a FoamPro 1600.

The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows, and pressures. The system must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards.

The system shall be equipped with a control module suitable for installation on the pump panel. Incorporated within the motor driver shall be a microprocessor that receives input from the system flow meter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A paddlewheel type flow meter shall be installed in the discharge specified to be foam capable.

The control module shall enable the pump operator to activate the foam proportioning system and select the proportioning rates from .1% to 1.0%.

A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity shall be 1.7 gpm at 200 psi. The motor shall be controlled by the microprocessor. It shall receive signals from the control module and power the 1/3 hp electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water system.

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 opening pressure check-valve shall be provided in the concentrate line.

Components of the complete proportioning system as described above shall include:

- Operator control module
- Paddlewheel flow meter
- Pump and electric motor/motor driver
- Wiring harnesses
- Low-level tank switch
- Foam injection check valve

An operations manual shall be provided for the unit.

FOAM SYSTEM DISCHARGE MANIFOLD

A brass foam discharge manifold shall be provided for the foam system.

This foam manifold shall have two (2) outlets for connection into the apparatus plumbing system.

INTEGRAL FOAM TANK

The integral foam tank shall have the following capacities:

***25 Imperial gallons
114 liters***

The foam tank shall be provided as an integral part of the booster tank and piped to the foam system. The tank shall have a separate fill tower with cover labeled ("FOAM FILL ONLY") for filling the foam tank.

Note: The main booster tank will be reduced in size in order to accommodate the integral foam tank.

INTEGRAL FOAM TANK WATER ALLOWANCE

The integral foam cell will deduct water from the specified water tank volume.

BOOSTER TANK

The booster tank shall have the following minimum capacities or greater:

***800 Imperial gallons
3,637 Liters***

This tank shall be provided with a lifetime warranty tank manufacturer.

The transverse and longitudinal swash partitions shall be manufactured of Polypropylene Copolymer material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules. All swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of .5" thick Polypropylene Copolymer and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a .25" thick removable Polypropylene Copolymer screen and a Polypropylene Copolymer hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum I.D. of 4", unless a dump chute is included in the design in which case the I.D. shall be 6". Both shall be of a design to run through the tank. The tank overflow shall be piped behind the rear wheels.

The tank cover shall be constructed of recessed .5" thick Polypropylene Copolymer, stress relieved, U.V. stabilized material. A minimum of two lifting dowels shall be drilled and tapped .5" x 2" to accommodate the lifting eyes.

There shall be one (1) sump standard per tank. The sump shall be constructed of .5" Polypropylene Copolymer and be located in the left front corner of the tank and shall meet the requirements of NFPA.

There will be two (2) standard tank outlets: one for tank to sump suction line and one for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 G.P.M.

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.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .25" x 2" and a minimum Rockwell hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and capture both front and rear as well as side to side to prevent tank from shifting during vehicle operation.

The tank shall be mounted in the apparatus body in a manner that the total outside bottom perimeter of the tank shall be supported. The bottom of the tank shall be completely isolated from the frame by heavy-duty .25" thick rubber strips. There shall be a picture frame type cradle mount system utilized for the purpose of capturing the tank. There shall be a support system across the top of the tank to prevent excessive bouncing when the tank is empty.

Although the tank is designed as a free-floating suspension unit, it is required that the tank has adequate 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 the top of the tank, halfway between the front and rear on each side of the tank.

The tank shall be completely removable without disturbing or dismantling the apparatus structure.

Warranty - Tank - Poly - Pro Poly - Lifetime

TANK DRAIN

The tank shall have a 1.5" tank drain installed in the bottom of the tank and accessible from the ground.

APPARATUS BODY

The body shall be fabricated with the highest quality components available, and acceptable to the fire service industry. Only new components shall be in the manufacturing process.

The body shall be engineered and designed to provide a low center of gravity and carry a correct load distribution.

The entire body sub frame shall be constructed of heavy-duty tubular aluminum and channels to provide a rigid body design.

The use of tubular aluminum and channels shall provide for extreme strength, maximum durability, and maximum resistance to buckling and failure.

All compartments shall be fabricated with 3/16" aluminum panels, grade 5052. The 3/16 panels will provide reinforcement to the compartment, for installation of heavy equipment. The 3/16" aluminum panels, grade 5052 panels shall provide extreme strength, rust corrosion resistance, and maximum durability.

Skilled craftsmen shall perform all welding operations on the body. All welding shall be electronically with the highest quality components.

Certified welders shall perform all welding. Proof of welder certification shall be provided with the completed vehicle.

BODY SUBFRAME

The body framework shall be assembled on a jig, and shall be clamped together and squared. The framework shall be electronically welded with digital pulse welders forming the integral superstructure.

The body frame rails shall be constructed of 6061T6/6063-T6, 3" x 3" aluminum extrusions, with a wall thickness of 1/4".

The front cross member shall be a heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability.

The two middle cross members shall be heavy duty 3" x 3" x 1/4" aluminum extrusions providing maximum strength and durability at the main section of the body.

The rear cross members shall be heavy duty 3" x 2" x 1/4" aluminum extrusions providing maximum strength and durability at the rear section of the body.

The two middle cross members shall extend the full width of the body. The cross members shall provide support for the body side compartments section.

The body sub frame and the chassis frame shall be insulated and separated by a rubberized belt.

There shall be rear drop sub frame bolted to chassis frame made from formed heavy steel rails.

The body shall be mounted to the chassis frame rails with two double flex mounts at the front, two steel channels in the middle, bolted to the chassis frame at the rear end of chassis frame and four single flex mounts at the drop frame. This shall provide for maximum mounting strength and flexibility.

CORROSION PROTECTION

All body components or attachments made from dissimilar metals shall be fastened to the body utilizing an UHMW/Polyethylene material to prevent metal-to-metal contact preventing dielectric corrosion.

All fasteners used in attaching or fastening or aluminum panels shall be installed with stainless steel hardware. Rivets shall not be acceptable.

All fasteners shall be installed in a manner, which shall involve drilling, tapping, and application of non-corrosive grease before the stainless steel bolts are installed. Self-tapping screws or screws without threads shall not be acceptable.

HOSE BED

The main hose bed shall be located above the booster tank and be sized to meet the requirements for a Pumper Fire Apparatus as specified in NFPA 1901 (Latest Edition) and ULC S515-04

The inner sides of the hose bed shall be natural finish aluminum smooth plate free of protrusions and obstructions.

There shall be three (3) Aluminum unistrut tracks for the optional hose bed divider(s), two (2) at the forward section of the hose bed, and one (1) at the rear.

The rear track shall have come with 10' of snap cover to prevent the hose couplings from catching the track. The snap cover shall be shipped loose for customer installation after the hose bed dividers have been set up.

HOSE BED PARTITION

There shall be a hose bed dunnage area at the front of the hose bed. The partition shall be manufactured from 5083-H321 1/8" salt water grade aluminum. Attached to the partition there shall be two full length horizontally mounted aluminum struts for optional adjustable hose bed dividers.

HOSE BED MATTING

The hose bed flooring shall be fitted with vinyl type matting to allow for air movement under the hose.

HOSE BED DIVIDER - ADJUSTABLE

There shall be one (1) adjustable hose bed divider provided.

The divider shall be easily adjustable in the hose bed slide tracks.

Each divider shall be constructed from 3/16" 5083-H321 salt water marine grade aluminum which shall be welded into a custom aluminum extrusion base frame.

Each hose bed divider shall have an oval handhold provided at the rear portion of the divider.

HOSE BED TARP

One (1) heavy duty vinyl hose bed tarp shall be provided with 1/4 turn fasteners for the main hose bed. The hose bed tarp shall have an end flap with velcro fasteners provided to cover the rear of the hose bed. The tarp shall be red in color.

REAR FENDERS

The rear fender outer skin shall be fabricated from 3/16" 5052 aluminum and have a painted finish. The rear fender skin shall be permanently attached to the body.

LEFT SIDE BODY COMPARTMENTS - HIGH

The following compartments shall be provided on the drivers side of the apparatus body.

One (1) compartment forward of the rear wheel measuring 36"W x 65"H x 26"D frame opening.

One (1) compartment over the rear wheel measuring 60"W x 35"H x 26"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 65"H x 26"D frame opening.

The body compartments shall be fabricated with 3/16" 5052 marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment.

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

RIGHT SIDE BODY COMPARTMENTS

The following compartments shall be provided on the curbside of the apparatus body.

One (1) compartment forward of the rear wheel measuring 36"W x 40"H x 26"D frame opening.

One (1) compartment behind the rear wheel measuring 48.25"W x 40"H x 26"D frame opening.

The body compartments shall be fabricated with 3/16" 5052 marine grade aluminum panels. These panels shall be non-corrosive, durable, and add strength and integrity to the body construction.

The interior compartment seams shall be sealed and caulked with a permanent, pliable automotive type sealer.

All compartments shall have a 1" drop on the lower edge of the door opening to accommodate the door seal, and to stop moisture from entering the compartment.

All compartments shall have sweep out floors.

All compartments shall be weatherproof.

DOOR AJAR SYSTEM

A red warning light for the door ajar system shall be provided in the cab. This light shall be activated when a compartment door on the apparatus body is open and the park brake is released. There shall be a magnetic sensor switch located in the compartment that will indicate when a door has been opened.

LADDER RACK - MANUAL FOLD DOWN

A side mounted manually operated fold down ladder rack shall be installed on the right side of the apparatus body above the body compartments. The ladder rack shall accommodate four (4) banks of ladders. There shall be two trim plates mounted to the body wall behind the ladder racks for scuff protection. The trim plates shall be manufactured from 16ga. 304 #4 finish stainless steel.

The folding rack shall be lockable in a closed position. A switch and sensor shall be provided to notify the driver if the rack is in the unlocked position when the parking brake is released as per the requirements of NFPA 1901 latest edition and ULC S515-04

The ladder rack shall be painted grey in color.

REAR BODY COMPARTMENT

The following compartments shall be provided on the rear of the apparatus body.

One (1) compartment measuring 40"W x 62"H x 30"D frame opening.

AMDOR ROLL UP DOORS

The doors shall be Amdor Roll-Up type doors to include: double wall aluminum box section slats with integral hinge joint and recessed slat seal, reusable end shoes with snap-in securement, double wall aluminum reinforced bottom rail with either Stainless Steel Lift Bar door latching system, aluminum track with side frame, sill plate, and top gutter with non-marring top seal, side seals, bottom seal, with all wear component material to be Type 6 Nylon.

The slats shall have a true box section with a flat interior surface to prevent equipment hang-up. The slats shall have a face depth of 1.0 inches and a wall thickness of 0.045 inches. Each slat incorporates a recessed slat seal to weatherproof the compartment and reduce rattle between slats.

For every inch of height an integral continuous hinge joint spans the width of the door to provide superior strength.

The door glides on non-interlocked end shoes. Each end shoe is independent and positively secured by an exclusive snap-in device. Door slats can be easily removed and replaced when required.

The Stainless Steel Lift Bar system shall be provided to keep the door securely closed. This system complements the superior strength of the bottom rail with bottom seal and integral reinforcing flange.

Wear components are constructed of Type 6 Nylon to provide maximum strength and durability. Type 6 Nylon is a naturally lubricating material, which provides exceptional temperature characteristics.

Each door is equipped with slat, top, bottom and side seals to keep moisture and dirt on the outside. The non-marring top seal provides a seal without marking the door surface.

The compartment door at the L1 location shall be Amdor roll up style.

The compartment door at the L2 location shall be Amdor roll up style.

The compartment door at the L3 location shall be Amdor roll up style.

The compartment door at the R1 location shall be Amdor roll up style.

The compartment door at the R2 location shall be Amdor roll up style.

The compartment door at the B1 location shall be Amdor roll up style.

TAIL LIGHT WIRING COVER PLATE

There shall be an aluminum cover plate mounted in the rear roadside and curbside body compartments for access to the rear tail light wiring. This plate shall be manufactured from 3/16" aluminum sheet and shall come with the same finish as the compartment interiors

COMPARTMENT VENTS

There shall be stainless steel louvered vents in each compartment. The vents shall be 5" in diameter. Each vent shall be installed to prevent water from dripping into the compartments. Each vent shall have a rubber diaphragm that minimizes outside contaminants from entering the compartment but still allow for air to evacuate.

RUB RAILS - APPARATUS BODY

Three inch "C" channel aluminum rub rails shall be bolted into place with nylon spacers on the lower framework below the apparatus body compartments. The rub rail will extend to the outside edges of the apparatus body for protection of the body from impact damage.

REAR TOW HOOKS - PAINTED

Two (2) heavy duty steel painted tow hooks shall be bolted directly to the rear frame rails.

The tow hooks shall be easily accessible from the rear of the apparatus body thru a removeable panel. The panel shall have lift and turn paddle latches. The door shall be manufactured from 3/16" 5052 - H32 aluminum.

TAILBOARD

A heavy-duty 8" deep tailboard shall be provided

The tailboard shall be covered with slip resistant 3/16" embossed checker plate. The aluminum checker plate shall be bolted to the tailboard sub frame with non-corrosive stainless steel bolts. The bolt on aluminum tread plate shall allow for easy removal for service.

The forward section of the tailboard shall be gapped to allow washing without dirt being trapped and for the drainage of accumulated water.

BODY HAND RAIL

The following handrails shall be installed on the apparatus body.

Two (2) 48" handrails mounted vertically on the curbside rear.

One (1) 42" handrail mounted horizontally on the upper rear for hose bed access.

One (1) 12" mounted on the roadside upper rear hose bed area

The body hand rail shall be 1 1/4" in diameter and shall be knurled aluminum for maximum grip and safety

The hand rail shall be installed and supported with chrome plated polished cast brackets.

The hand rail brackets shall be provided with an isolation gasket and held in place with stainless steel bolts.

CAST STEPS - CURB SIDE REAR

One (1) cast aluminum fixed cast steps shall be installed on the curb side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

CAST STEPS - ROAD SIDE REAR

Three (3) cast aluminum fixed steps shall be installed on the road side rear of the apparatus. Each steps shall come with a hand hold built into the step.

The steps shall be mounted to a 3/8" plate with stainless steel screws. The plate shall be permanently welded to the apparatus body frame.

COMPARTMENT LIGHTS - LED

All body compartments shall have LED lights activated by an automatic door switch. The LED compartment lights shall be flush mount and provide a consistent 120 degree wide beam pattern. There shall be a minimum of two strip lights installed in each compartment.

CHEVRON STRIPPING

There shall be 6" chevron stripping decals applied to the rear face of the apparatus. The chevron decals shall be made of high visibility Reflexite™ material that is red / yellow in color and shaped to form an "A" style pattern. A minimum of 50% of the rear body shall be covered with Chevron.

PIKE POLE / ATTIC LADDER STORAGE - INTERNAL

There shall be internal storage for 2 Pike Poles (Pike Poles not incl.) and 1 folding attic ladder (attic ladder not incl.) The storage compartment shall come with an aluminum door with paddle latches. The aluminum door shall come with a stainless steel hinge fastened with stainless steel fasteners. Self tapping fasteners shall not be allowed.

SUCTION HOSE STORAGE COMPARTMENTS - INTERNAL

There shall be two (2) aluminum rear slide in suction hose compartments offset to the curbside of the body that will open to the rear of the apparatus.

There shall be a hinged aluminum door on the storage compartment with a positive twist type latch.

The compartments shall have the capacity to hold a minimum of two (2) lengths of 6" x 10' suction hose.

ELECTRICAL SYSTEM - MULTIPLEXED

The manufacturer shall design the wiring system for the apparatus in accordance to the SAE, Society of Automobile Engineers.

The manufacturer shall determine the circuit loads and design the system to accommodate these loads with appropriate circuit routings and relays.

All wiring harnesses shall be properly secured and routed. All passages required for routing shall be grommeted and sealed as required.

All wiring shall be easily accessible for servicing.

All wiring shall be SAE J1128 and SAE J1292 GXL type wire, as per fire industry standards.

All exposed wiring shall be crimped and heat shrunk for added protection.

The wiring harnesses shall be pre-engineered for correct circuit loading and shall be custom made. The harnesses shall be function, number, and color coded and shall be fitted inside automotive high temperature loom. All connections to the main panel box must be made with waterproof automotive style guided pin locking connectors (NO EXCEPTIONS).

An enclosed main electrical distribution panel that provides protection against dirt, dust, oil, and water shall be installed in the upper section of the pump house.

All electrical connections to the panel shall be made through positive locking environmentally sealed connectors. The panel features a solid state power distribution board(s) with visual diagnostics.

All circuits are protected by automatic resetting circuit breakers. All breakers shall be properly sized to the circuit load and are direct plug in sockets.

All wiring shall have a strain pull test on wiring connections of 40 pounds.

BATTERY MASTER SWITCH

A 300 amp solenoid master battery switch shall be installed in the cab within reach of the driver.

ZONE A UPPER EMERGENCY LIGHTING

The zone A upper emergency lighting zone shall have the following:

A Federal Signal 53” Legend LPX LED light bar (Model: LPX53DNC-00002) warning system shall be furnished and rigidly mounted to meet the requirements of Zone A lighting as per NFPA 1901 (latest edition) and ULC S515-04

ZONE A LOWER EMERGENCY LIGHTING

The zone A lower emergency lighting zone shall have the following lights and shall be mounted to the chassis grill:

Two (2) Federal Signal Viper EXT P/N VPX802-4 intersection lights shall be installed. The lights shall have the high output Solaris LED technology. The eight red LED lights shall be encapsulated in a waterproof housing. The lense color shall be red in color. The light mounting bezel shall be chrome in color.

ZONE B UPPER EMERGENCY LIGHTING

The zone B upper emergency lighting zone shall have the following:

No emergency lights in this zone

ZONE B LOWER EMERGENCY LIGHTING

The zone B lower emergency lighting zone shall have the following:

Two (2) Federal Signal Viper EXT P/N VPX802-4 intersection lights shall be installed. The lights shall have the high output Solaris LED technology. The eight red LED lights shall be encapsulated in a waterproof housing. The lense color shall be red in color. The light mounting bezel shall be chrome in color.

ZONE C UPPER EMERGENCY LIGHTING

The zone C upper emergency lighting zone shall have the following:

No emergency lights in this zone

ZONE C LOWER EMERGENCY LIGHTING

The zone C lower emergency lighting zone shall have the following:

Two (2) Federal Signal Viper EXT P/N VPX802-4 intersection lights shall be installed. The lights shall have the high output Solaris LED technology. The eight red LED lights shall be

encapsulated in a waterproof housing. The lense color shall be red in color. The light mounting bezel shall be chrome in color.

ZONE D UPPER EMERGENCY LIGHTING

The zone D upper emergency lighting zone shall have the following:

No emergency lights in this zone

ZONE D LOWER ZONE

The zone D lower emergency lighting zone shall have the following:

Two (2) Federal Signal Viper EXT P/N VPX802-4 intersection lights shall be installed. The lights shall have the high output Solaris LED technology. The eight red LED lights shall be encapsulated in a waterproof housing. The lense color shall be red in color. The light mounting bezel shall be chrome in color.

ZONE D LOWER ZONE

The zone D lower emergency lighting zone shall have the following:

REAR WARNING LIGHTS - UPPER

Two (2) Federal halogen beacon lights (model SY12FSR) with 175FPM standard rotators shall be provided and mounted on the upper rear stanchions, one (1) each side, and controlled by a switch located in the cab. One beacon shall be red and the other beacon shall be amber in color.

HEADLIGHT WIG WAG FLASHER

The chassis high beam headlights shall be equipped with an alternating flashing , wig wag headlight system. An electronic flasher shall be used to control the lights. A control switch panel shall activate the flashing system.

ELECTRONIC SIREN

There shall be a Federal PA-300MCS electronic siren, with microphone and installed in the cab.

A wide range of features comes standard with any PA300 series siren. Included are 5 basic siren tones, TAP II (horn-ring transfer), PA, radio rebroadcast, and air horn sound with siren override. TAP II allows for effective intersection traffic clearing capability without removing your hands from the steering wheel or your eyes from the road. There is also a “Press-and-Hold” function, depressing and holding the horn ring will produce an alternate sound for as long as the operator keeps the horn ring circuit depressed. The siren’s PA volume level can be controlled with a rotary GAIN switch located on the unit’s backlit front panel, and radio rebroadcast volume is adjustable via an easily accessible rotary pot. The PA300 siren also includes a permanent noise-canceling microphone that produces high quality voice reproduction without feedback squeal, and the microphone’s push-to-talk switch will override any siren tone for instant PA use.

ELECTRONIC SIREN SPEAKER

There shall be a Federal model ES100 / 100 watt electronic siren speaker provided at the front bumper and connected into the electronic siren. The 100-watt speaker shall be of compact design and shall be 5.9" high X 5.5" long x 2.7" deep. The speaker shall be fully encapsulated with no terminals exposed and built to withstand tough conditions. The system shall contain the NS100W driver.

TAIL LIGHTS - LED

There shall be a set of LED tail lights installed the rear face of the apparatus body. These lights shall include brake, turn and clear back up lights installed in chrome trim bezels.

HAND HELD CAB SPOT LIGHT

One (1) SHO-ME 300,000 candle power hand held spot light, with a momentary type control switch, coiled cord, and bracket, shall be provided and mounted on the right side in the cab and wired into the 12 volt electrical system.

HOSEBED FLOOD LIGHT(S)

There shall be one (1) chrome Unity AG-2 halogen 12V light shall provided at the front of the hose bed. The light(s) shall be furnished with halogen flood light bulbs.

STEP LIGHTS

All steps on the body shall have adequate light for illumination. All step lights shall be LED style.

GROUND LIGHTS - LED

There shall be eight (8) Luma Bar H2O 12" LED ground lights with outward facing angle brackets installed underneath the apparatus. The ground lights shall be activated by a switch installed in the chassis cab. Ground lights that are directly underneath a door opening will turn on automatically when the door is opened.

ENGINE COMPARTMENT LIGHT

One (1) 4" clear engine compartment light shall be installed in the engine compartment area and shall be activated by a mercury switch.

CLEARANCE AND MARKER LIGHTS - LED

All clearance / marker lights, reflectors shall comply with department of transport motor vehicle safety standards. The clearance / marker lights shall be LED (light emitting diode) type.

A set of LED (light emitting diode) mid body turn signals shall be installed to comply with department of transport motor vehicle safety standards for vehicles over 30 feet in length.

BACK UP ALARM

A Federal Signal 107db back up alarm shall be installed at the rear of the apparatus body. This back up alarm shall be activated when the chassis transmission is placed into reverse.

TWO WAY RADIO POWER SUPPLY

There shall be a dedicated 12V power supply line coiled underneath the chassis dash for the future install of a customer supplied two way radio.

ANTENNA MOUNT(S)

One (1) mounts for future antenna installation shall be installed on the chassis cab roof. The antenna leads shall be wired to the chassis cab dash area for future installation of a radio.

PAINT COLOR - CHASSIS

The chassis shall be painted a single color by the chassis manufacturer. This shall be the final paint color and finish for the completed vehicle.

FINISH AND PAINTING - PPG

The painting shall be done in accordance with automotive practices using Delfleet® Evolution FBCH high solids polyurethane paint with the PPG painting process.

All painting shall be baked at 160 degrees F. for a minimum 45 minutes to provide an automotive quality finish.

After assembly, the body substructure shall be deburred and hand sanded.

All ledges inside and outside shall be cleaned and sealed.

The painting process consists of the following applications:

- a) Wash entire body with DX 440 wax and grease remover
- b) Etch primer, PPG F3963 (0.2 - 0.35 mils dry)
- c) Primer, PPG F3975 (3.0 - 6.0 mils dry)
- d) Wash entire body with DX 330 wax and grease remover
- e) Primer sealer, Epoxy PPG F399x (1.0 - 4.0 mils dry)
- f) Basecoat, Delfleet® evolution PPG FBCH (1.0 - 3.0 mils dry)
- g) Clearcoat, PPG F3906 clear (minimum of 2.0 mils)

All outside seams that are not 100 percent welded shall be sealed and caulked inside and outside.

Only after the entire painting process is completed shall the body structures be installed on the chassis.

Only after the body is painted shall the components such as doors, aluminum inlay panels, mounting brackets, handrails, pump panels, and other accessories be installed.

COMPARTMENT FINISH

The interior of all compartments of the body shall also be sealed and caulked. A natural finish shall be provided with all compartment interiors.

4" REFLECTIVE BODY PRIMARY STRIPING

There shall be a four inch wide reflective stripe applied to the left, right and rear sides of the apparatus according to the requirements of NFPA 1901 latest edition. The reflective stripe shall be a 3M Scotchlite product.