

VILLAGE OF DOWNERS GROVE
Report for the Village
12/12/2017

SUBJECT:	SUBMITTED BY:
Purchase of Replacement Vehicles	Nan Newlon Director of Public Works

SYNOPSIS

A motion is requested to authorize the purchase of the following replacement vehicles for a total of \$852,562.96:

- Four 2018 Ford Police Interceptor Utilities from Currie Motors, in the total amount of \$186,182.96
- One 2018 Ferrara Igniter Pumper from Ferrara Fire Apparatus, Inc. of Louisiana in an amount not to exceed \$608,597.00
- One 2018 Ford F-250 from Currie Motors, in the total amount of \$57,783.00.

STRATEGIC PLAN ALIGNMENT

The goals for 2017-2019 include *Exceptional Municipal Services*.

FISCAL IMPACT

The FY18 budget includes a total of \$863,000 in the Equipment Replacement Fund (Page 4-13, Line 21) for these purchases.

RECOMMENDATION

Approval on the December 12, 2017 consent agenda.

BACKGROUND

The 2018 vehicle replacement schedule provides for the replacement of 6 vehicles.

Quantity	Type of Vehicle	Make and Model	Dealer	Price each
1	Fire Engine	2018 Ferrara Igniter	AEC Fire and Safety	\$608,597.00
4	Police Squad	2018 Ford Interceptor Utility	Currie Motors	\$46,545.74
1	Pick Up Truck	2018 Ford F-250	Currie Motors	\$57,783.00

The Village's Fleet Team, consisting of representatives from the Village Manager's Office, Finance, Public Works, Police and Fire Departments evaluated the need to replace these vehicles. All Village vehicles and equipment are targeted for replacement according to useful lifecycle replacement criteria. These criteria include age, usage, condition, repair costs, fuel efficiency and environmental impact. The Fleet Team reviewed the vehicles scheduled to be replaced and determined that the criteria for replacement were met.

Police Vehicles

A typical patrol car has a useful life of 4-6 years depending on use. Beginning in December 2015 staff began recommending the Ford Interceptor Utility vehicle over the Chevrolet Tahoe for reasons of cost, design, and ability to purchase ready for use.

The following table provides additional information regarding the police vehicles scheduled to be replaced:

Veh.#	Year	Make	Model	Miles (Nov 2017)	2016-17 Repairs / Maintenance Costs (12 mo)	Life-to-Date Repairs / Maintenance Costs	Repairs / Maintenance Cost % in 2016-17
804	2013	Chevy	Tahoe	93,045	\$ 6,022.84	\$12,731.31	47.30%
805	2013	Chevy	Tahoe	113,686	\$ 6,059.63	\$19,591.76	30.93%
879	2012	Chevy	Tahoe	120,785	\$ 4,151.28	\$21,327.20	19.46%
883	2012	Chevy	Tahoe	133,300	\$ 7,180.63	\$24,243.79	29.62%

Fire Vehicle

A typical fire engine has a front line use of 10-12 years. The proposed vehicle will replace a 2007 engine as a front line response unit, moving the current unit to a reserve position. As a result, a 2000 engine will be removed from the fleet. Beginning in 2016, Fleet and Fire Department personnel evaluated several fire apparatus and determined that the Ferrara unit was best suited for the needs and considerations of both departments while providing cost efficiency. Originally this engine was scheduled to be replaced in 2017, but due to financial constraints it was deferred to FY18.

Public Works Forestry Division Vehicle

Currently the Forestry Division is using a 2005 Ford F-250, which has reached the end of its life expectancy. It burns B20 diesel fuel. The replacement vehicle will be an E-85 running engine with an XL Hybrid unit installed. This will not only increase horsepower and torque, but will increase its fuel economy by 25%. This vehicle will run on two of the Village's alternative fuels, which is in line with the Village's efforts to create a greener fleet.

Veh. #	Year	Make	Model	Miles (Nov 2017)	2016-17 Repairs / Maintenance Costs (12 mo)	Life-to-Date Repairs / Maintenance Costs	Repairs / Maintenance Cost % in 2016-17
184	2005	Ford	F-250	100,841	\$ 4,048.88	\$51,605	7.85%

These purchases are recommended to be made through cooperative purchasing contracts in accordance with the provisions of the Village Purchasing Policy. The Interceptor Utility vehicles will be purchased through the North West Municipal Council's Suburban Purchasing Cooperative. Pricing for the Ferrara Ignitor is provided through the Houston Galveston Area Council Cooperative Purchasing Program for governmental entities and the Ford F-250 will be purchased through the Suburban Purchasing Cooperative.

ATTACHMENTS

Contracts and Proposals



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

Customer Proposal

Prepared for:

Vincent Pasquinelli
Village of Downers Grove

Prepared by:

Kristen DeLaRiva
Office: 708-479-1100
Email: fleetcurrie@gmail.com

Date: 11/20/2017

Vehicle: 2018 Police Interceptor Utility Base
AWD

Quote ID: DGPD





Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 Police Interceptor Utility, Sport Utility

AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Selected Options

Code	Description	MSRP
Base Vehicle		
K8A	Base Vehicle Price (K8A)	\$32,320.00
Packages		
500A	Order Code 500A	N/C
	<i>Includes:</i> - Engine: 3.7L V6 Ti-VCT FFV - Transmission: 6-Speed Automatic - 3.65 Axle Ratio - GVWR: 6,300 lbs - Tires: P245/55R18 AS BSW - Wheels: 18" x 8" 5-Spoke Painted Black Steel Includes center caps and full size spare. - Unique HD Cloth Front Bucket Seats w/Vinyl Rear Includes driver 6-way power track (fore/aft.up/down, tilt with manual recline, 2-way manual lumbar, passenger 2-way manual track (fore/aft. with manual recline) and built-in steel intrusion plates in both front seatbacks. - Radio: MyFord AM/FM/CD/MP3 Capable Includes clock, 6 speakers and 4.2" color LCD screen center-stack Smart Display.	
Powertrain		
99R	Engine: 3.7L V6 Ti-VCT FFV	Included
44C	Transmission: 6-Speed Automatic	Included
STDAX	3.65 Axle Ratio	Included
STDGV	GVWR: 6,300 lbs	Included
Wheels & Tires		
STDTR	Tires: P245/55R18 AS BSW	Included
64E	Wheels: 18" Painted Aluminum	\$475.00
	<i>Spare wheel is an 18" conventional (Police) black steel wheel.</i>	
Seats & Seat Trim		
9	Unique HD Cloth Front Bucket Seats w/Vinyl Rear	Included
	<i>Includes driver 6-way power track (fore/aft.up/down, tilt with manual recline, 2-way manual lumbar, passenger 2-way manual track (fore/aft. with manual recline) and built-in steel intrusion plates in both front seatbacks.</i>	
Other Options		
113WB	113" Wheelbase	STD
PAINT	Monotone Paint Application	STD
STDRD	Radio: MyFord AM/FM/CD/MP3 Capable	Included
	<i>Includes clock, 6 speakers and 4.2" color LCD screen center-stack Smart Display.</i>	

Prices and content availability as shown are subject to change and should be treated as estimates only. Actual base vehicle, package and option pricing may vary from this estimate because of special local pricing, availability or pricing adjustments not reflected in the dealer's computer system. See salesperson for the most current information.



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 Police Interceptor Utility, Sport Utility

AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Selected Options (cont'd)

Code	Description	MSRP
86P	Front Headlamp/Police Interceptor Housing Only <i>Includes pre-drilled hole for side marker police use, does not include LED installed lights (eliminates need to drill housing assemblies) and pre-molded side warning LED holes with standard sealed capability (does not include LED installed lights).</i>	\$125.00
86L	Auto Headlamp	\$115.00
43L	Police Silent Mode Daytime running lamps do not disable where required by law. <i>When activated, courtesy lamps and Daytime Running Lamps disabled (user configurable).</i>	\$20.00
942	Daytime Running Lamps	\$45.00
17T	Red/White Dome Lamp in Cargo Area	\$50.00
60A	Grille LED Lights, Siren & Speaker Pre-Wiring	\$50.00
63B	Side Marker LED Sideview Mirrors Recommend using Cargo Wiring Uplift Package (67G), Ready for the Road Package (67H) or Ultimate Wiring Package (67U). <i>Includes driver side - red / passenger side - blue. Located on backside of exterior mirror housing. LED lights only. Wiring and controller not included.</i>	\$290.00
51R	Driver Only LED Spot Lamp (Unity)	\$395.00
92G	2nd Row, Rear Quarter & Liftgate Window Solar Tint <i>Deletes privacy glass.</i>	\$120.00
87R	Rear View Camera <i>Note: This option would replace the camera that comes standard in the 4" center stack area. Camera can only be displayed in the 4" center stack (standard) OR the rear view mirror (87R). Includes: - Electrochromic Rear View Mirror Video is displayed in rear view mirror.</i>	N/C
52P	Hidden Door-Lock Plunger/Rr-Door Handles Inoperable	\$160.00
18D	Global Lock / Unlock Feature <i>Door-panel switches will lock/unlock all doors and rear liftgate. Eliminates overhead console liftgate unlock switch and 45-second timer. Also eliminates the blue liftgate release button if ordered with Remote Keyless.</i>	N/C
59G	Keyed Alike - 0151x	\$50.00
90G	Ballistic Door-Panels (Level IV+) Tested and meets the requirements of NIJ Standard 0108.01 Level IV: .30-06 M2 AP 166gr (7.62 x 63 APM2 10.8g). Designed to withstand special threat rounds: 7.62 x 54R LPS 9.65g and 7.62 x 51 mm M61 9.75g (.308 Winchester 150.5gr). In addition, Level IV+ includes all of the NIJ Level III and LAPD rounds listed in footnote 2. <i>Driver and passenger front-doors only.</i>	\$4,830.00

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2018 Police Interceptor Utility, Sport Utility

AWD Base(K8A)
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Selected Options (cont'd)

Code	Description	MSRP
549	Heated Sideview Mirrors	\$60.00
47A	Police Engine Idle Feature	\$260.00
	<i>This feature allows you to leave the engine running and prevents your vehicle from unauthorized use when outside of your vehicle. Allows the key to be removed from ignition while vehicle remains idling.</i>	
60R	Noise Suppression Bonds (Ground Straps)	\$100.00
Interior Colors		
9W_01	Charcoal Black	N/C
Primary Colors		
G1_01	Shadow Black	N/C
Upfit Options		
MPP	Municipal Police Plates	\$203.00
SAE	SAE CUSTOMS, INC.	\$12,912.74

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Prepared for: Vincent Pasquinelli, Village of Downers Grove
By: Kristen DeLaRiva Date: 11/20/2017



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 Police Interceptor Utility, Sport
Utility

AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Selected Options (cont'd)

Code	Description	MSRP
	PB450L4 - WHELEN ION 1 778.74 778.74T SS-DLX6F-** Versa Star®, six LED array, black bezel, flush or bracket mount, 10-30V RED 1 61.96 61.96T SS-DLX6F-** Versa Star®, six LED array, black bezel, flush or bracket mount, 10-30V BLUE 1 61.96 61.96T SS-BB274-FISUV... Ford Interceptor SUV headlight bracket kit, mounts DLX3, DLX4, DLX6F in the headlight of 2016 Police Ford Int. SUV 1 15.21 15.21T SS-D-44-FISUV '10-'15 Ford Interceptor SUV, Cyclone speaker™ w/SPBRK-28 installed, direct Plug-n-Play, 100 watt 1 185.43 185.43T SSFFP16 Headlight Flasher with 8 Flash Patterns, Plug and Play for 2016 Ford Interceptor Utility (Requires Ford Option 60A, pre-wire option) 1 111.01 111.01T SS-1400LED-*** Phaser custom Lightbar - See spec sheet Opticom Included 1 1,890.00 1,890.00T CCSRNT5F 3 Section Control Head and 8 Push Buttons, 4-Position Slide Switch with a 7-Position Rotary Knob. Manual, Airhorn, Plus 3 Traffic Advisor Switches with CANport™ CAN BUS Interface Module for 2016-2017 Ford Interceptor Utility, 2016 Ford Interceptor Sedan and F-150, 2016 Dodge Charger, and 2016 Chevy Tahoe. 1 1,946.55 1,946.55T SA-108 Ford Center console harness assembly 1 233.75 233.75T C-VS-1308-INUT 2013-2014 Ford Interceptor Utility Police Vehicle Specific 21" Console-CON,VS,21TMS,_DG,HC,INUT,13-14, 1 390.10 390.10T C-EB40-CCS-1P 1-Piece Equipment Mounting Bracket, 4" Mounting Space, Fits Whelen Cencom CCSRN, CCSRNTA, MPC03 1 0.00 0.00T C-EB25-T81-1P 1-Piece Equipment Mounting Bracket, 2.5" Mounting Space, Fits Kenwood TK-8180, TK-7180, TK-7160, TK-8160- BRKT, EQUIP, 1PC, 2.5MS, SP, 1 0.00 0.00T C-CUP2-I-A11 Dual 11° angled Internal cup holders -CON,ACSY,CUPHLDR,IM,5.5MS,11DG,DUAL, 1 37.49 37.49T C-ARM-103 Armrest for top mount, console, large pad-CON,ACSY,ARM,EM,LPD,FLP,H-ADJT, 1 105.36 105.36T C-LP2-PS1-USB 2 Lighter Plug Outlet W/ 1 USB Cut Outs - CON, ACSY,	

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2018 Police Interceptor Utility, Sport Utility
AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Selected Options (cont'd)

Code	Description	MSRP
	C-LP2-PS1-USB 2 Lighter Plug Outlet W/ 1 USB Cut Outs - CON, ACSY, PLT, IM, 1.5MS, [2]LPO, [1]USB, 1 98.30 98.30T Computer brackets C-SM-SA-1-HD Mounting bracket complete w/ swing arm -ACTADP, OPT, SWGARM, HD, EM, 1 101.75 101.75T C-MD-204 Low Profile Tilt Swivel Motion Device-ACTADP, TS, 1.38h, SP 1 67.83 67.83T LND-OHPM-ZQ5 Overhead Printer Mount for Zebra ZQ-520 4" Printer 1 180.14 180.14T JD-475-1111 PI Utility 16+ Single Cell Package 1 2,144.63 2,144.63T JD-475-0382/GGH Dual GL3XO for Single Cell 1 455.61 455.61T SS-ULB9LDC-1 Dual color, Lineum XTM, 12' cable, 10-16V RB/WW 2 158.59 317.18T To be mounted on C-D lateral H-2209 BW CANNON 120 BLUE WHITE 1 82.80 82.80T H-2209 RW CANNON 120 RED WHITE 1 82.80 82.80T To be mounted in reverse lights SS-ULB38-TD-Fl... Rear window light, six Lineum Dual Color heads, 30" long, for Ford Interceptor Utility, 10-16V 1 396.22 396.22T SS-DLITE-* MicroStar 6-led flush mount 10-30V "Wide Optic" R/B 2 64.61 129.22T To go on under side of lift gate C-TTP-INUT-2 2013-2014 Ford Interceptor Utility Full width Trunk Bottom Plate Tray -TRNK,BTTM,PLT,INUT,13-14,SP 1 226.90 226.90T Shop Supplies Wire, Connector, Tape, Fittings, Hardware, Etc. 6 50.00 300.00T CA25 C mount no connector RG58A/U 25' 1 25.00 25.00T A1211BC 132-970 MHz Antenna BLACK 1 16.80 16.80T Shipping 1 300.00 300.00T TK-7360HV Kenwood 50 Watt, 128 Channel, VHF Mobile Radio 1 400.00 400.00T Intall Front Push ... Installation Of Front Push Bumper 2 60.00 120.00 Labor Front end w... Wiring front Grill lights, siren speaker, and HAW 3 60.00 180.00 Light bar wire, an... Wire, and install lightbar 1.5 60.00 90.00 Center Console in... Wire, and install center console with two radios, siren, and switch control 4 60.00 240.00 Camera System Install provided camera system with basic functionality 3 60.00 180.00T Radar 1.5 60.00 90.00T Computer Dock Wire and Mount Computer Dock to Vehicle 1 60.00 60.00T Printer Install printer in vehicle 1 60.00 60.00T Gun Lock Wire, and install Gun Lock to function on momentary switch located on Siren control box 1 60.00 60.00 Cage / Seat Install Install Prisoner cage and or plastic back seat 6 60.00 360.00 Item Description Qty Rate Total Rear side warning Wire, and install side warning between C, and D post 1.5 60.00 90.00 Rear HAW/Arrow... Wire rear HAW and Arrow stick 4 60.00 240.00	

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2018 Police Interceptor Utility, Sport Utility

AWD Base(K8A)
 Price Level: 815 Quote ID: DGPD

Selected Options (cont'd)

Code	Description	MSRP
	<div>\$12,912.74</div> <div>\$12,912.74</div>	
SUBTOTAL		\$52,580.74
Destination Charge		\$945.00
TOTAL		\$53,525.74

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By: Kristen DeLaRiva Date: 11/20/2017



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AWD Base(K8A)
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Warranty - Selected Equipment & Specs

Warranty

Basic

Distance	36000 miles	Months	36 months
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Powertrain

Distance	100000 miles	Months	60 months
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Corrosion Perforation

Distance	Unlimited miles	Months	60 months
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Roadside Assistance

Distance	60000 miles	Months	60 months
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2018 Police Interceptor Utility, Sport Utility
AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Pricing - Single Vehicle

	MSRP
<i>Vehicle Pricing</i>	
Base Vehicle Price	\$32,320.00
Options & Colors	\$7,145.00
Upfitting	\$13,115.74
Destination Charge	\$945.00
<i>Discount Adjustments</i>	
Discount	-\$6,980.00
Total	\$46,545.74

Customer Signature

Acceptance Date

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2018 Police Interceptor Utility, Sport Utility
AWD Base(K8A)
Price Level: 815 Quote ID: DGPD

Pricing - Multiple Vehicles (4)

MSRP

Vehicle Pricing

Base Vehicle Price	\$129,280.00
Options & Colors	\$28,580.00
Upfitting	\$52,462.96
Destination Charge	\$3,780.00

Discount Adjustments

Discount	-\$27,920.00
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Total	\$186,182.96
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Customer Signature

Acceptance Date

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2018 Police Interceptor Utility, Sport Utility

AWD Base(K8A)

Price Level: 815 Quote ID: DGPD

Major Equipment

(Based on selected options, shown at right)

3.7L V-6 DOHC w/SMPI 304hp

6 speed automatic w/OD

- * 4-wheel ABS
- * Traction control
- * Advance Trac w/Roll Stability Control
- * Tinted glass
- * Daytime running
- * Rear child safety locks
- * Variable intermittent speed-sensitive wipers wipers
- * Dual front airbags
- * Airbag occupancy sensor
- * Tachometer
- * Underseat ducts
- * 60-40 folding rear split-bench
- * Axle to end of frame: 46.5"

Exterior:Shadow Black

Interior:Charcoal Black

- * Brake assistance
- * P 245/55R18 BSW AS W-rated tires
- * Air conditioning
- * AM/FM stereo with seek-scan, single in-dash CD player, MP3 decoder
- * LED brakelights
- * Dual power remote heated mirrors
- * 18 x 8 aluminum wheels
- * Driver and front passenger seat mounted side airbags
- * Rear window defroster
- * Message Center
- * Reclining front bucket seats
- * Audio control on steering wheel

Fuel Economy

City

16 mpg



Hwy

21 mpg

Selected Options

MSRP

STANDARD VEHICLE PRICE	\$32,320.00
Order Code 500A	N/C
113" Wheelbase	STD
Monotone Paint Application	STD
Shadow Black	N/C
Charcoal Black	N/C
Auto Headlamp	\$115.00
Daytime Running Lamps	\$45.00
Police Silent Mode	\$20.00
Red/White Dome Lamp in Cargo Area	\$50.00
Driver Only LED Spot Lamp (Unity)	\$395.00
Grille LED Lights, Siren & Speaker Pre-Wiring	\$50.00
Side Marker LED Sideview Mirrors	\$290.00
2nd Row, Rear Quarter & Liftgate Window Solar Tint	\$120.00
Rear View Camera	N/C
Hidden Door-Lock Plunger/Rr-Door Handles Inoperable	\$160.00
Global Lock / Unlock Feature	N/C
Ballistic Door-Panels (Level IV+)	\$4,830.00
Heated Sideview Mirrors	\$60.00
Keyed Alike - 0151x	\$50.00

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AWD Base(K8A)

Price Level: 815 Quote ID: DGPD

Wheels: 18" Painted Aluminum	\$475.00
Noise Suppression Bonds (Ground Straps)	\$100.00
Police Engine Idle Feature	\$260.00
Front Headlamp/Police Interceptor Housing Only	\$125.00
Engine: 3.7L V6 Ti-VCT FFV	Included
Transmission: 6-Speed Automatic	Included
3.65 Axle Ratio	Included
GVWR: 6,300 lbs	Included
Tires: P245/55R18 AS BSW	Included
Unique HD Cloth Front Bucket Seats w/Vinyl Rear	Included
Radio: MyFord AM/FM/CD/MP3 Capable	Included
Electrochromic Rear View Mirror	Included
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SUBTOTAL	\$39,465.00
Destination Charge	\$945.00
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TOTAL	\$40,410.00

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By: Kristen DeLaRiva Date: 11/20/2017



2018 Ford Utility Police Interceptor AWD Contract # 152



Currie Motors Fleet

"Nice People To Do Business With"

Your Full-Line Municipal Dealer
www.CurrieFleet.com

ORDER CUTOFF: TBD





2018 Ford Utility Police Interceptor AWD

Contract # 152

\$26,456.00

3.7 TI-VCT V6 FFV
 6-Speed Automatic
 Rear recovery hooks
 Independent front/rear suspension
 Engine Oil Cooler
 18.6 gallon fuel tank
 Engine Hour Meter
 220 Amp Alternator
 78 Amp Hour Battery
 Lower black body side cladding
 Dual Exhaust
 Black spoiler
 Electric Power Assist Steering
 Acoustic laminated windshield
 18" Tires and Wheels
 Fixed glass lift gate
 Full Size Spare
 AM/FM/CD
 Roll curtain airbag
 Safety Canopy W/Roll Over
 Sensor
 Anti-Lock Brakes With Advanced Trac
 and traction control
 LED tail lamps
 2nd/3rd Row Privacy Glass
 My Ford police cluster
 Black Grill
 Headlamps-LED Low Beam
 Halogen Hi Beam
 Lift Gate Release Switch - 45
 Second Time out

Rearview Camera with Washer
 All-Wheel Drive
 Manual folding power mirror
 Fold flat 60/40 rear vinyl bench
 Single Zone Manual Climate
 Control
 Power Windows - 1 Touch
 Up/Down
 Power Locks
 Cruise Control/Tilt Wheel
 Calibrated Speedometer
 Column Shift
 Work Task Light red/white
 Simple fleet key
 Power Adjustable Pedals
 Two-Way Radio Pre-Wire
 Particulate air filter
 Power Pig tail
 Delivery within 30 Miles
 Locking Glove Box

Standard Warranty:

Basic: 3 Years/ 36,000 Miles
 Drivetrain: 5 Years/100,000 Miles
 Corrosion: 5 Years/ Unlimited
 Miles
 Emissions: 8 Years/80,000 Miles
 Roadside Assistance:
 5 Years/60,000 Miles

Order Cutoff: TBD



<input type="checkbox"/> 99T	3.5L V-6 Ecoboost® Engine (131 MPH top speed)	\$3130.00
<input type="checkbox"/> 41H	Engine block heater	\$86.00
<input type="checkbox"/> 86L	Auto Head Lamp Required With Silent Mode	\$109.00
<input type="checkbox"/> 43D	Dark car feature – Courtesy Lights Inop	\$19.00
<input type="checkbox"/> 43L	Silent Mode – Requires Day time Running Lights /Auto Lamp	\$19.00
<input type="checkbox"/> 942	Daytime Running Lights	\$42.00
<input type="checkbox"/> 17T	Dome lamp red/white cargo area	\$49.00
<input type="checkbox"/> 51Y	Spot Light Drivers Side Only - Incandescent	\$204.00
<input type="checkbox"/> 51Z	Dual Spot Lights (Driver/Passenger) Incandescent	\$334.00
<input type="checkbox"/> 51R	Spot Light Drivers Side LED Bulb - Unity	\$375.00
<input type="checkbox"/> 51T	Spot Light Drivers Side LED Bulb - Whelen	\$399.00
<input type="checkbox"/> 51S	Spot Light Dual LED Bulbs - Unity	\$589.00
<input type="checkbox"/> 51V	Spot Light Dual LED Bulbs - Whelen	\$632.00
<input type="checkbox"/> 51P	Spot Lamp Prep Kit; Driver side (does not include housing and bulb)	\$132.00
<input type="checkbox"/> 51W	Spot Lamp Prep Kit; Dual Side (does not include housing and bulbs)	\$266.00
<input type="checkbox"/> 21L	Front Auxiliary Light Red/Blue - requires option 60A	\$524.00
<input type="checkbox"/> 21W	Forward Indicator - Red/Blue Pocket Warning Light - requires option 60A(Located in Headlamp)	\$607.00
<input type="checkbox"/> 60A	Pre-wiring grill lamp, siren, speaker	\$49.00
<input type="checkbox"/> 63B	Side Marker LED - Red/Blue - Requires 60A	\$276.00
<input type="checkbox"/> 63L	Rear Quarter Glass Side Marker Lights - Red/Blue	\$546.00
<input type="checkbox"/> 92G	Glass-Solar Tint 2nd Row/Rear Quarter/Liftgate Window (Deletes Privacy Glass)	\$114.00
<input type="checkbox"/> 92R	Glass-Solar Tint 2nd Row Only, Privacy Glass on Rear Quarter and Liftgate Window	\$81.00
<input type="checkbox"/> 68Z	Roof rack side rails	\$148.00
<input type="checkbox"/> 76D	Deflector Plate (Eco Boost Only)	\$292.00
<input type="checkbox"/> 87R	Rear View Camera - Includes Electrochromic Rear View Mirror (replaces standard camera in center stack area)	N/C
<input type="checkbox"/> 53M	Sync® Basic – includes USB port and aux input jack	\$280.00
<input type="checkbox"/> 61R	Remappable (4) switches on steering wheel (less Sync)	\$148.00
<input type="checkbox"/> 61S	Remappable (4) switches on steering wheel (with Sync)	\$148.00
<input type="checkbox"/> 18W	Rear window power delete	\$24.00
<input type="checkbox"/> 68L	Rear-Door Handles Inoperable / Locks Operable	\$33.00
<input type="checkbox"/> 68G	Rear-Door Handles Inoperable / Locks Inoperable	\$33.00
<input type="checkbox"/> 52H	Hidden Door-Lock Plunger w/Rear-door Handles Op	\$132.00
<input type="checkbox"/> 52P	Hidden Door-Lock Plunger w/Read-door Handles Inop	\$153.00
<input type="checkbox"/> 16C	1st & 2nd Row Carpet Floor Covering (includes mats)	\$119.00
<input type="checkbox"/> 18D	Global Lock/Unlock (Disables Auto Lock on Rear Hatch)	24.00
<input type="checkbox"/> 87P	Power Passenger Seat (6-way) w/ manual recline/lumbar	\$309.00
<input type="checkbox"/> 85D	Front Console Plate-Delete (N/A w/ 67G, 67H, 67U, 85R)	N/C
<input type="checkbox"/> 85R	Rear Console Plate (N/A with 65U, 85D)	\$30.00



<input type="checkbox"/>	90D	Ballistic Door Panels – Level III Driver Front Only	\$1506.00
<input type="checkbox"/>	90E	Ballistic Door Panels – Level III Driver/Passenger Front	\$3012.00
<input type="checkbox"/>	90F	Ballistic Door Panels – Level IV Driver Front Only	\$2294.00
<input type="checkbox"/>	90G	Ballistic Door Panels – Level IV Driver/Passenger Front	\$4588.00
<input type="checkbox"/>	96W	Visor Light (requires rear console mounting plate N/A with interior Upgrade Package)	\$1159.00
<input type="checkbox"/>	96T	Rear Spoiler Traffic Light (requires 85R Rear Console Plate)	1330.00
<input type="checkbox"/>	55B	BLIS® Blind spot monitoring (includes manual heated mirrors)	\$517.00
<input type="checkbox"/>	19L	Lockable Gas Cap	\$17.00
<input type="checkbox"/>	549	Mirrors – Heated Sideview	\$58.00
<input type="checkbox"/>	593	Perimeter Anti-Theft Alarm – Requires key Fob (595)	\$114.00
<input type="checkbox"/>	55F	Keyless-4 Fobs (N/A with keyed alike)	\$322.00
<input type="checkbox"/>	76R	Reverse Sensing	\$261.00
<input type="checkbox"/>		Keyed Alike Code _____ Specify Current Key Alike Code	\$49.00
<input type="checkbox"/>	65L	18” 5-spoke full face wheel covers w/ metal clips	\$58.00
<input type="checkbox"/>	64E	18” painted aluminum wheels	\$451.00
<input type="checkbox"/>	17A	Aux Air Conditioning (N/A with 63V)	\$579.00
<input type="checkbox"/>	16D	Badge Delete	N/C
<input type="checkbox"/>	63V	Cargo Storage Vault - includes lockable door/compartiment light (N/A with 17A)	\$232.00
<input type="checkbox"/>	55D	Scuff Guards	\$67.00
<input type="checkbox"/>	60R	Noise Suppression Bonds (Ground Straps)	\$95.00
<input type="checkbox"/>	18X	100 Watt Siren/Speaker (includes bracket and pigtail)	\$285.00
<input type="checkbox"/>	43S	My Speed Fleet Management - allows admin to lower max vehicle speed and max audio volume / allows VMAX speed to be set in 5mph increments	\$58.00
<input type="checkbox"/>	52B	Enhanced PTU Cooler – requires EcoBoost® Engine	\$2779.00
<input type="checkbox"/>		Rustproof & Undercoating	\$395.00
<input type="checkbox"/>	47A	Engine Idle Control	\$385.00
<input type="checkbox"/>		4 Corner LED Strokes (aftermarket using 86P)	\$895.00
<input type="checkbox"/>		CD-Rom service manual	\$325.00
<input type="checkbox"/>		License and title fees M_____MP_____ (Includes Shipping)	\$203.00
<input type="checkbox"/>		Delivery greater than 50 miles of dealership	\$150.00

Optional Maintenance & Warranty Coverage:

<input type="checkbox"/>	ESP Extended Warranty Extra Care 5-Year 60,000 miles	\$1,620.00
<input type="checkbox"/>	ESP Extended Warranty Base Care -3 year/100,000 miles	\$1,215.00
<input type="checkbox"/>	ESP Extended Warranty Powertrain –6 year/100,000miles	\$1075.00
<input type="checkbox"/>	ESP Extended Warranty Base Care – 6 year/100,000miles	\$1255.00



Equipment Groups

<input type="checkbox"/> 47C	Police Wire Harness Connector Kit – Front For connectivity to Ford PI Package solutions includes: <ul style="list-style-type: none"> • (2) Male 4-pin connectors for siren • (5) Female 4-pin connectors for lighting/siren/speaker • (1) 4-pin IP connector for speakers • (1) 4-pin IP connector for siren controller connectivity • (1) 8-pin sealed connector • (1) 14-pin IP connector 	\$100.00
<input type="checkbox"/> 21P	Police Wire Harness connector Kit – Rear For connectivity to Ford PI Package solutions includes: <ul style="list-style-type: none"> • (1) 2-pin connector for rear lighting • (1) 2-pin connector • (6) Female 4-pin connectors • (6) Male 4-pin connectors • (1) 10-pin connector 	\$123.00
<input type="checkbox"/> 65U	Police Interior Upgrade Package Includes: 1st & 2nd Row Carpet Floor Covering, Rear Cloth Seats, Center Floor Console less shifter- includes console Deletes the standard console mounting plate Note: Not available with options 67G, 67H, 67U	\$371.00
<input type="checkbox"/> 66A	Front Headlamp Lighting Solution Includes: Base LED low beam/halogen high-beam with wig-wag function, 2-white LED side warning lights, wiring, LED lights included, controller NOT included. Note: Not available with 67H; recommend using 67G or 67U	\$809.00
<input type="checkbox"/> 86P	Front Headlamp Housing Only Pre-drilled side marker holes (does not include lights) Pre-molded side warning holes with twist lock capability (does not include lights)	\$119.00
<input type="checkbox"/> 66B	Tail Lamp Lighting Solution Includes: Base LED lights plus 2-rear integrated white LED side warning lights, wiring, controller NOT included, N/A with 67H	\$404.00
<input type="checkbox"/> 66C	Rear Lighting Solution Includes two backlit flashing LED lights (mounted to inside lift gate glass), two lift gate flashing LED lights (not available with Police Interceptor package 67H)	\$433.00
<input type="checkbox"/> 86T	Tail Lamp Housing Only Pre-existing holes with standard twist lock-sealed capability, does NOT include LED lights. N/A w/66B and 67H	\$53.00
<input type="checkbox"/> 67U	Ultimate Wiring Package (n/a with Interior Upgrade Package) Includes the following: <ul style="list-style-type: none"> • Rear console mounting plate (85R)-contours through 2nd row; channel for wiring 	\$524.00



	<ul style="list-style-type: none"> • Pre-wiring for grille LED lights, siren and speaker (60A) • Wiring harness I/P to rear (overlay) • (2) light cables-supports up to (6) LED lights (engine compartment/grille) • (2) 50-amp battery and ground circuits in RH rear-quarter • (1) 10-amp siren/speaker circuit engine cargo area • Rear hatch/cargo area wiring-supports up to (6) rear LED lights <p>N/A with 65U, 67G, 67H</p>	
<input type="checkbox"/> 67G	<p>Cargo Wiring Upfit Package (n/a) with Interior Upgrade Package</p> <ul style="list-style-type: none"> • Rear Console Mounting Plate • Wiring overlay harness w/lighting & siren interface connections • Vehicle engine harness: 2-light connectors, 2-grill light connectors, 2-50 amp battery ground circuits in power junction box, 2-10 amp siren/speaker circuit • Whelen lighting PCC8R control head • Whelen PCC8R Light Relay Center • Whelen specific cable connects PCC8R to control head • Pre-wiring for grill lights siren and speaker <p>(not available with 65U 67H and 67U)</p>	\$1,272.00
<input type="checkbox"/> 67H	<p>Ready for the Road Package-not available with Interior Upgrade Package</p> <p>All-in Complete Package-Includes Police Interceptor Packages 66A 66B 66C plus</p> <ul style="list-style-type: none"> • Whelen Cencom light controller • Whelen Cencom relay center/siren amp with traffic advisor • Light controller/relay Cencom wiring • Grille LED Lights • 100 Watt Siren/Speaker • (9) I/O digital Serial Cable (console to cargo) • Hidden door lock plunger & rear door handles inop • Rear console mounting plate <p>(not available with 66A 66B 66C 67G 67U 65U)</p>	\$3,244.00

Vinyl Options

<input type="checkbox"/> 91A	<p>Two-Tone Vinyl Wrap - Package #1</p> <p>Roof & Right/left, front/rear doors vinyl - white only</p> <p>(Not available with: 91C, 91D, 91E, 91F, 91G, 91H, 91J)</p>	\$797.00
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<input type="checkbox"/> 91C	Two-Tone Vinyl Wrap - Package #3 Roof & Right/left front doors only vinyl - white only (Not available with: 91A, 91D, 91E, 91F, 91G, 91H, 91J)	\$665.00
<input type="checkbox"/> 91H	Two-Tone Vinyl – Roof white only (Not available with: 91A, 91C)	\$466.00
<input type="checkbox"/> 91J	Two-Tone Vinyl – LH/RH Front Doors white only (Not available with: 91A, 91C, 91D, 91E, 91F, 91G)	\$290.00
<input type="checkbox"/> 91D	Vinyl Word Wrap - POLICE (Non-Reflective) White (YZ) lettering located on LH/RH sides of vehicle Not available with: 91A, 91C, 91E, 91F, 91G, 91J	\$755.00
<input type="checkbox"/> 91E	Vinyl Word Wrap - POLICE (Reflective) Black lettering located on LH/RH sides of vehicle Not available with: 91A, 91C, 91D, 91F, 91G, 91J	\$755.00
<input type="checkbox"/> 91F	Vinyl Word Wrap - POLICE (Reflective) White lettering located on LH/RH sides of vehicle Not available with: 91A, 91C, 91D, 91E, 91G, 91J	\$755.00
<input type="checkbox"/> 91G	Vinyl Word Wrap - SHERIFF (Non-Reflective) White lettering located on LH/RH sides of vehicle Not available with: 91A, 91C, 91D, 91E, 91F, 91J	\$755.00

Options – Exterior

<input type="checkbox"/> BU	Medium Brown Metallic
<input type="checkbox"/> E3	Arizona Beige Metallic Clearcoat
<input type="checkbox"/> G1	Shadow Black
<input type="checkbox"/> HG	Smokestone Metallic
<input type="checkbox"/> J1	Kodiak Brown Metallic
<input type="checkbox"/> JL	Dark Toreador Red Metallic
<input type="checkbox"/> KR	Norsea Blue Metallic
<input type="checkbox"/> LK	Dark Blue
<input type="checkbox"/> LM	Royal Blue
<input type="checkbox"/> LN	Light Blue Metallic
<input type="checkbox"/> MM	Ultra Blue Metallic
<input type="checkbox"/> FT	Blue Metallic
<input type="checkbox"/> TN	Silver Grey Metallic
<input type="checkbox"/> UJ	Sterling Grey Metallic
<input type="checkbox"/> UX	Ingot Silver Metallic
<input type="checkbox"/> YG	Medium Titanium Metallic
<input type="checkbox"/> YZ	Oxford White
<input type="checkbox"/> E4	Vermillion Red

Options – Interior

<input type="checkbox"/>	Charcoal Black w/vinyl rear	N/C
<input type="checkbox"/>	Charcoal Black w/cloth rear	\$51.00



Please enter the following:

Title Information :

Contact Name

Phone Number

Purchase Order Number

Fleet Identification Number

Tax Exempt Number

Total Dollar Amount

Total Number of Units

Delivery Address

***Orders Require Signed Original Purchase Order and Tax Exempt Letter**

*Currie Motors Fleet
9423 W. Lincoln Hwy
Frankfort, IL 60423
PHONE: (815)464-9200
Tom Sullivan Curriefleet@gmail.com
Kristen De La Riva Fleetcurrie@gmail.com*

**Fleet Status is accessible by registering at www.fleet.ford.com. Please provide FIN Code at time of order*

SAE Customs Inc.

27764 Volo Village Rd Office: 855-SAE-CUST
Suite F 723-2878
Volo, Illinois 60073 Fax: 855-230-1214

Estimate

Date	Estimate #
11/6/2017	1557

Name / Address
Downers Grove PD 825 Burlington Avenue Downers Grove, IL 60515

Rep	Account #	Project
	340	

Item	Description	Qty	Rate	Total
	New Car for DGPD Car must be ordered with following options: -60A Grille pre-wire -63B factory installed Mirror lights -86P Headlamp housings holes only -51Y Incandescent DS spot light -60R Noise sup. Ground Straps Customer will provide: -Camera system with all parts -Dock with cables -Printer with cables -Radar with brackets and cables			
SET-BK2019ITU16	PB450L4 - WHELEN ION	1	778.74	778.74T
SS-DLX6F-**	Versa Star®, six LED array, black bezel, flush or bracket mount, 10-30V RED	1	61.96	61.96T
SS-DLX6F-**	Versa Star®, six LED array, black bezel, flush or bracket mount, 10-30V BLUE	1	61.96	61.96T
SS-BB274-FISUV...	Ford Interceptor SUV headlight bracket kit, mounts DLX3, DLX4, DLX6F in the headlight of 2016 Police Ford Int. SUV	1	15.21	15.21T
SS-D-44-FISUV	'10-'15 Ford Interceptor SUV, Cyclone speaker™ w/SPBRK-28 installed, direct Plug-n-Play, 100 watt	1	185.43	185.43T

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LIMITATION OF LIABILITY: To the maximum extent permitted by applicable law, in no event and under no legal theory shall SAE or any other person who has been involved in the production or delivery of the services described herein be liable to customer or any other person for any general, direct, indirect, special, incidental, consequential, cover or other damages of any character arising out of the use of, or inability to use, the vehicle and/or Products, including but not limited to, personal injury, failure of the finished vehicle to operate with any other aftermarket products, business interruption, or any and all other damages or losses of whatever nature, even if Contractor has been informed of the possibility of such damages.

SAE reserves the right to: (i) cancel this order at any time; (ii) take pictures of the vehicle through all stages of the build; and (iii) place one or more decals on the vehicle and/or consoles. The price herein is subject to change with addition of parts, materials and/or equipment not specified above. Cancellation of the order by the customer after signing this estimate will require payment to SAE for all ordered materials and equipment and the customer shall not be entitled to delivery of said items. The customer, by signing here acknowledges and agrees to all of the terms set forth herein, accepts the quoted price and authorizes SAE to provide the quoted labor and Products for the vehicle. Payments made after the due date (as stated above) shall accrue interest at 1.5% per month. In the event of any action to enforce the terms herein, customer agrees to pay upon demand all of SAE costs and expenses, including attorneys' fees and court costs.

Subtotal

Sales Tax (0.0%)

Total

Signature

SAE Customs Inc.

27764 Volo Village Rd Office: 855-SAE-CUST
 Suite F 723-2878
 Volo, Illinois 60073 Fax: 855-230-1214

Estimate

Date	Estimate #
11/6/2017	1557

Name / Address

Downers Grove PD
 825 Burlington Avenue
 Downers Grove, IL 60515

Rep	Account #	Project
	340	

Item	Description	Qty	Rate	Total
SSFFP16	Headlight Flasher with 8 Flash Patterns, Plug and Play for 2016 Ford Interceptor Utility (Requires Ford Option 60A, pre-wire option)	1	111.01	111.01T
SS-1400LED-***	Phaser custom Lightbar - See spec sheet Opticom Included	1	1,890.00	1,890.00T
CCSRNT5F	3 Section Control Head and 8 Push Buttons, 4-Position Slide Switch with a 7-Position Rotary Knob. Manual, Airhorn, Plus 3 Traffic Advisor Switches with CANport™ CAN BUS Interface Module for 2016-2017 Ford Interceptor Utility, 2016 Ford Interceptor Sedan and F-150, 2016 Dodge Charger, and 2016 Chevy Tahoe.	1	1,946.55	1,946.55T
SA-108	Ford Center console harness assembly	1	233.75	233.75T
C-VS-1308-INUT	2013-2014 Ford Interceptor Utility Police Vehicle Specific 21" Console-CON,VS,21TMS,_DG,HC,INUT,13-14,	1	390.10	390.10T
C-EB40-CCS-1P	1-Piece Equipment Mounting Bracket, 4" Mounting Space, Fits Whelen Cencom CCSRN, CCSRNTA, MPC03	1	0.00	0.00T
C-EB25-T81-1P	1-Piece Equipment Mounting Bracket, 2.5" Mounting Space, Fits Kenwood TK-8180, TK-7180, TK-7160, TK-8160- BRKT, EQUIP, 1PC, 2.5MS, SP,	1	0.00	0.00T
C-CUP2-I-A11	Dual 11° angled Internal cup holders -CON,ACSY,CUPHLDR,IM,5.5MS,11DG,DUAL,	1	37.49	37.49T
C-ARM-103	Armrest for top mount, console, large pad-CON,ACSY,ARM,EM,LPD,FLP,H-ADJT,	1	105.36	105.36T

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LIMITATION OF LIABILITY: To the maximum extent permitted by applicable law, in no event and under no legal theory shall SAE or any other person who has been involved in the production or delivery of the services described herein be liable to customer or any other person for any general, direct, indirect, special, incidental, consequential, cover or other damages of any character arising out of the use of, or inability to use, the vehicle and/or Products, including but not limited to, personal injury, failure of the finished vehicle to operate with any other aftermarket products, business interruption, or any and all other damages or losses of whatever nature, even if Contractor has been informed of the possibility of such damages.

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Subtotal
Sales Tax (0.0%)
Total

Signature

SAE Customs Inc.

27764 Volo Village Rd Office: 855-SAE-CUST
Suite F 723-2878
Volo, Illinois 60073 Fax: 855-230-1214

Estimate

Date	Estimate #
11/6/2017	1557

Name / Address
Downers Grove PD 825 Burlington Avenue Downers Grove, IL 60515

Rep	Account #	Project
	340	

Item	Description	Qty	Rate	Total
C-LP2-PS1-USB	2 Lighter Plug Outlet W/ 1 USB Cut Outs - CON, ACSY, PLT, IM, 1.5MS, [2]LPO, [1]USB,	1	98.30	98.30T
C-SM-SA-1-HD	Computer brackets Mounting bracket complete w/ swing arm	1	101.75	101.75T
C-MD-204	-ACTADP,OPT,SWGARM,HD,EM, Low Profile Tilt Swivel Motion Device-ACTADP, TS, 1.38h, SP	1	67.83	67.83T
LND-OHPM-ZQ5	Overhead Printer Mount for Zebra ZQ-520 4" Printer	1	180.14	180.14T
JD-475-1111	PI Utility 16+ Single Cell Package	1	2,144.63	2,144.63T
JD-475-0382/GGH	Dual GL3XO for Single Cell	1	455.61	455.61T
SS-ULB9LDC-1	Dual color, Lineum X™, 12' cable, 10-16V RB/WW To be mounted on C-D lateral	2	158.59	317.18T
H-2209 BW	CANNON 120 BLUE WHITE	1	82.80	82.80T
H-2209 RW	CANNON 120 RED WHITE To be mounted in reverse lights	1	82.80	82.80T
SS-ULB38-TD-FL...	Rear window light, six Lineum Dual Color heads, 30" long, for Ford Interceptor Utility,10-16V	1	396.22	396.22T
SS-DLITE-*	MicroStar 6-led flush mount 10-30V "Wide Optic" R/B To go on under side of lift gate	2	64.61	129.22T

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LIMITATION OF LIABILITY: To the maximum extent permitted by applicable law, in no event and under no legal theory shall SAE or any other person who has been involved in the production or delivery of the services described herein be liable to customer or any other person for any general, direct, indirect, special, incidental, consequential, cover or other damages of any character arising out of the use of, or inability to use, the vehicle and/or Products, including but not limited to, personal injury, failure of the finished vehicle to operate with any other aftermarket products, business interruption, or any and all other damages or losses of whatever nature, even if Contractor has been informed of the possibility of such damages.

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Subtotal

Sales Tax (0.0%)

Total

Signature

SAE Customs Inc.

27764 Volo Village Rd Office: 855-SAE-CUST
Suite F 723-2878
Volo, Illinois 60073 Fax: 855-230-1214

Estimate

Date	Estimate #
11/6/2017	1557

Name / Address
Downers Grove PD 825 Burlington Avenue Downers Grove, IL 60515

Rep	Account #	Project
	340	

Item	Description	Qty	Rate	Total
C-TTP-INUT-2	2013-2014 Ford Interceptor Utility Full width Trunk Bottom Plate Tray -TRNK,BTTM,PLT,INUT,13-14,SP	1	226.90	226.90T
Shop Supplies	Wire, Connector, Tape, Fittings, Hardware, Etc.	6	50.00	300.00T
CA25	C mount no connector RG58A/U 25'	1	25.00	25.00T
A1211BC	132-970 MHz Antenna BLACK	1	16.80	16.80T
Shipping		1	300.00	300.00T
TK-7360HV	Kenwood 50 Watt, 128 Channel, VHF Mobile Radio	1	400.00	400.00T
Intall Front Push ...	Installation Of Front Push Bumper	2	60.00	120.00
Labor Front end w...	Wiring front Grill lights, siren speaker, and HAW	3	60.00	180.00
Light bar wire, an...	Wire, and install lightbar	1.5	60.00	90.00
Center Console in...	Wire, and install center console with two radios,siren, and switch control	4	60.00	240.00
Camera System	Install provided camera system with basic functionality	3	60.00	180.00T
Radar		1.5	60.00	90.00T
Computer Dock	Wire and Mount Computer Dock to Vehicle	1	60.00	60.00T
Printer	Install printer in vehicle	1	60.00	60.00T
Gun Lock	Wire, and install Gun Lock to function on momentary switch located on Siren control box	1	60.00	60.00
Cage / Seat Install	Install Prisoner cage and or plastic back seat	6	60.00	360.00

Upon payment in full, SAE Customs Inc. ("SAE") provides a limited warranty (the "Limited Warranty") covering SAE's workmanship for as long as the customer owns the vehicle and no tampering with the parts, materials and/or equipment installed by SAE ("Products") is evident. This Limited Warranty covers SAE's labor only, and does not cover the Products. Customer's sole recourse for warranty claims related to the Products is with the manufacturer of the Products. EXCEPT AS SET FORTH HEREIN, SAE MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MECHANABILITY AND FITNESS FOR PARTICULAR PURPOSE, AND BUYER ACKNOWLEDGES THAT NO REPRESENTATIONS, WARRANTIES, PROMISES OR STATEMENTS HAVE BEEN MADE BY SAE WITH RESPECT TO THE SERVICES AND/OR PRODUCTS PROVIDED BY SAE, OR ANY PART OR PORTION THEREOF, FOR ANY PURPOSE, NOR ANY WARRANTY WHICH EXTENDS BEYOND THE LIMITED WARRANTY.

LIMITATION OF LIABILITY: To the maximum extent permitted by applicable law, in no event and under no legal theory shall SAE or any other person who has been involved in the production or delivery of the services described herein be liable to customer or any other person for any general, direct, indirect, special, incidental, consequential, cover or other damages of any character arising out of the use of, or inability to use, the vehicle and/or Products, including but not limited to, personal injury, failure of the finished vehicle to operate with any other aftermarket products, business interruption, or any and all other damages or losses of whatever nature, even if Contractor has been informed of the possibility of such damages.

SAE reserves the right to: (i) cancel this order at any time; (ii) take pictures of the vehicle through all stages of the build; and (iii) place one or more decals on the vehicle and/or consoles. The price herein is subject to change with addition of parts, materials and/or equipment not specified above. Cancellation of the order by the customer after signing this estimate will require payment to SAE for all ordered materials and equipment and the customer shall not be entitled to delivery of said items. The customer, by signing here acknowledges and agrees to all of the terms set forth herein, accepts the quoted price and authorizes SAE to provide the quoted labor and Products for the vehicle. Payments made after the due date (as stated above) shall accrue interest at 1.5% per month. In the event of any action to enforce the terms herein, customer agrees to pay upon demand all of SAE costs and expenses, including attorneys' fees and court costs.

Subtotal

Sales Tax (0.0%)

Total

Signature

27764 Volo Village Rd Suite F
Volo, Illinois 60073

Office: 855-SAE-CUST
723-2878
Fax: 855-230-1214

Date	Estimate #
11/6/2017	1557

Name / Address
Downers Grove PD 825 Burlington Avenue Downers Grove, IL 60515

Rep	Account #	Project
	340	

[illegible]

Upon payment in full, SAE Custom Inc. ("SAE") provides a limited warranty (the "Limited Warranty") covering SAE's workmanship for as long as the customer owns the vehicle and not tampering with the parts, materials and/or equipment installed by SAE ("Products") is evident. This Limited Warranty covers SAE's labor only, and does not cover the Products. Customer's sole recourse for warranty claims related to the Products is with the manufacturer of the Products. EXCEPT AS SET FORTH HEREIN, SAE MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, AND BUYER ACKNOWLEDGES THAT NO REPRESENTATIONS, WARRANTIES, PROMISES OR STATEMENTS HAVE BEEN MADE BY SAE WITH RESPECT TO THE SERVICES AND/OR PRODUCTS PROVIDED BY SAE, OR ANY PART OR PORTION THEREOF, FOR ANY PURPOSE, NOR ANY WARRANTY WHICH EXTENDS BEYOND THE LIMITED WARRANTY.

LIMITATION OF LIABILITY: The maximum extent permitted by applicable law, in no event and under no legal theory shall SAE or any other person who has been involved in the production or delivery of the services described herein be liable to customer or any other person for any general, direct, indirect, special, incidental, consequential, cover or other damages of any character arising out of the use of, or inability to use, the vehicle and/or Products, including but not limited to, personal injury, failure of the finished vehicle to operate with any other aftermarket products, business interruption, or any and all other damages or losses of whatever nature, even if Contractor has been informed of the possibility of such damages.

SAE reserves the right to: (i) cancel this order at any time; (ii) take pictures of the vehicle through all stages of the build; and (iii) place one or more decals on the vehicle and/or consoles. The price herein is subject to change with addition of parts, materials and/or equipment not specified above. Cancellation of the order by the customer after signing this estimate will require payment to SAE for all ordered materials and equipment and the customer shall not be entitled to delivery of said items. The customer, by signing here acknowledges and agrees to all of the terms set forth herein, accepts the quoted price and authorizes SAE to provide the quoted labor and Products for the vehicle. Payments made after the due date (as stated above) shall accrue interest at 1.5% per month. In the event of any action to enforce the terms herein, customer agrees to pay upon demand all of SAE costs and expenses, including attorneys' fees and court costs.

Subtotal	\$12,912.74
Sales Tax (0.0%)	\$0.00
Total	\$12,912.74

Signature



A Joint Purchasing Program For Local Government Agencies

August 10, 2017

Currie Motors
Mr. Tom Sullivan
9423 West Lincoln Highway
Frankfort, IL 60423

Dear Mr. Sullivan:

This letter is to request a rollover from Ford Motor Company on the 2018 Ford Interceptor Utility SPC Contract #152 with Currie Motors, Frankfort, IL along with the second of three (3) possible one-year contract extensions from November 9, 2017 through November 8, 2018. The SPC reserves the right to extend the contract for one more year upon mutual agreement of the both the vendor and the SPC on a negotiated basis.

With acceptance of the 2018 model year roll over and contract extension, Currie Motors, Frankfort, IL agrees to all terms and conditions set forth in the specifications contained within the Request for Proposals to which you responded.

Currie Motors, Frankfort, IL will handle all billing. Each vehicle purchased will be assessed a \$120.00 administrative fee per vehicle which shall be paid directly by the vendor to the SPC on a quarterly basis.

The SPC looks forward to a productive year working with Currie Motors, Frankfort, IL. Please sign and date this agreement below, retaining copies for your files and returning the original to my attention.

Sincerely,

Ellen Dayan
Purchasing Director
Northwest Municipal Conference

08/10/17

Name: Ellen Dayan Date
Northwest Municipal Conference

9-12-17

Name: Tom Sullivan Date
Currie Motors

*DuPage Mayors &
Managers Conference*
1220 Oak Brook Road
Oak Brook, IL 60523
Suzette Quintell
Phone: (630) 571-0480
Fax: (630) 571-0484

*Northwest Municipal
Conference*
1600 East Golf Rd., Suite 0700
Des Plaines, IL 60016
Ellen Dayan, CPPB
Phone: (847) 296-9200
Fax: (847) 296-9207

*South Suburban Mayors
And Managers Association*
1904 West 174th Street
East Hazel Crest, IL 60429
Ed Paesel
Phone: (708) 206-1155
Fax: (708) 206-1133

*Will County
Governmental League*
3180 Theodore Street, Suite 101
Joliet, IL 60435
Cherie Belom
Phone: (815) 729-3535
Fax: (815) 729-3536

**AGREEMENT BETWEEN THE VILLAGE OF DOWNERS GROVE AND
FERRARA FIRE APPARATUS, INC. FOR THE PURCHASE OF A FIRE APPARATUS**

This Agreement is made this 7th day of December 2017 by and between Ferrara Fire Apparatus, Inc. ("FFA") of Holden, Louisiana and the Village of Downers Grove, Illinois, an Illinois municipal corporation with offices at 801 Burlington Avenue, Downers Grove, Illinois 60515, ("Village").

WHEREAS, the Village became a member of the Houston-Galveston Area Council ("H-GAC"), which is a regional planning commission and political subdivision of the State of Texas; and

WHEREAS, H-GAC has instituted a cooperative purchasing program which includes many contractors from which to purchase goods and services; and

WHEREAS, FFA is an approved H-GAC contractor; and

WHEREAS, the Village wishes to purchase a fire apparatus from FFA through the H-GAC cooperative purchasing program; and

WHEREAS, FFA is willing to manufacture and sell to the Village the below specified fire apparatus for compensation and in accordance with the terms and conditions described in this Agreement.

NOW, THEREFORE, in consideration of the mutual benefits that will result to the parties in carrying out the terms of this Agreement, it is agreed as follows:

1. Recitals. The provisions set forth in the recitals are incorporated into and made a part of this Agreement.

2. Scope. FFA shall manufacture and sell to the Village a Ferrara Igniter Custom Side Mount Pumper ("Apparatus") in accordance with the specifications attached hereto and incorporated herein as Exhibit A.

3. Payment. The Village shall pay to FFA Six Hundred Eight Thousand Five Hundred Ninety-seven Dollars and No Cents (\$608,597.00) for the Apparatus. Any additional work performed that will increase the agreement price in excess of this amount must be approved in writing by both parties. The Village shall pay FFA the full purchase price within thirty (30) days of execution of this Agreement. The Village is exempt from Illinois sales or use tax for direct purchases of materials and supplies.

4. Delivery. Delivery of the Apparatus shall be F.O.B. Downers Grove, Illinois within 300 calendar days after receipt of the approved signed off pre-construction changes. FFA shall not be held liable for damages for failure to make delivery as a result of fire, flood, riots, strikes, chassis shortages, or delays caused by its suppliers, any act of God, or any other circumstances beyond the control of FFA.

5. Inspection. During the manufacturing of the Apparatus, the Village shall have a right to inspect, by its authorized representative, any material, components or workmanship as herein specified. Materials, components or workmanship that have been rejected by the Village as not in accordance with the terms of the contract specifications shall be replaced by FFA at no cost to the Village. The Village shall then inspect the completed Apparatus upon delivery and shall give written notice of any defects within ten (10) business days. The Apparatus shall be deemed accepted if the Village fails to give such notice.

6. Performance Bond. FFA shall provide a Performance Bond, in a form approved by the Village, to the Village in an amount equal to the full purchase price prior to receiving payment from the Village. The Village agrees that the bond shall be deemed fully released upon the Village's acceptance of the Apparatus and the warranty period shall commence to cover the apparatus.

7. Warranties. The Apparatus and all its components shall be warranted as set forth in the specifications attached as Exhibit A. In addition to said warranties, in the event the Apparatus is out of service, through no fault of the Village, for fifty percent (50%) or more of the time within eighteen (18) months from the date of delivery to the Village, the Village shall have the option to return the apparatus to FFA and FFA shall be required to accept the return of the Apparatus and reimburse the Village for the full purchase price within thirty (30) days of a demand therefor.

8. Copyright or Patent Infringement. FFA agrees to indemnify, defend, and hold harmless the Village against any suit, claim, or proceeding brought against the Village for alleged use of any equipment, components, systems, or services provided by FFA that constitutes a misuse of any proprietary or trade secret information or an infringement of any patent or copyright.

9. Indemnification. FFA shall indemnify and hold harmless the Village and its officers, employees and agents from any and all liability, losses or damages the Village may suffer as a result of claims, demands, suits, actions or proceedings of any kind or nature in any way resulting from or arising out of negligent action on the part of FFA under this Agreement. This provision shall survive termination of this Agreement.

10. Equal Employment Opportunity. During the performance of this Agreement, the Consultant agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if it hires additional employees in order to perform this Agreement or any portion thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

11. Sexual Harassment. FFA, as a party to a public contract, certifies that it has a written sexual harassment policy.

12. Drug Free Work Place. FFA, as party to a public contract, certifies and agrees that it has a drug free workplace policy and will provide a drug free workplace.

13. Non-Discrimination. Consultant, its employees and subconsultants, agree not to

commit unlawful discrimination and agree to comply with applicable provisions of the Illinois Human Rights Act, the Public Works Employment Discrimination Act, the U.S. Civil Rights Act and Section 504 of the Federal Rehabilitation Act, and rules applicable to each. The equal opportunity clause of the Department of Human Rights rules is specifically incorporated herein.

The Americans with Disabilities Act (42 U.S.C. 12101) and the regulations thereunder (28 CFR 35.130)(ADA) prohibit discrimination against persons with disabilities by the State, whether directly or through contractual arrangements, in the provision of any aid, benefit or service. As a condition of receiving this Agreement, the undersigned vendor certifies that services, programs and activities provided under this Agreement are and will continue to be in compliance with the ADA.

14. Campaign Disclosure Certificate. FFA shall comply with the Campaign Disclosure Certificate attached hereto and incorporated herein by reference as Exhibit B.

15. Patriot Act Compliance. FFA represents and warrants to the Village that neither it nor any of its principals, shareholders, members, partners, or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. FFA further represents and warrants to the Village that FFA and its principals, shareholders, members, partners, or affiliates, as applicable are not, directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Agreement on behalf of any person or entity named as a Specially Designated National and Blocked Person. FFA hereby agrees to defend, indemnify and hold harmless the Village, and its elected or appointed officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities and expenses(including

reasonable attorney's fees and costs) arising from or related to any breach of the foregoing representations and warranties.

16. Cooperation with FOIA Compliance. FFA acknowledges that the Freedom of Information Act may apply to public records in possession of the Consultant. Consultant shall cooperate with the Village in its efforts to comply with the Freedom of Information Act. 5 ILCS 140/1 et. seq.

17. Governing Law. This Agreement will be governed by and construed in accordance with the laws of the State of Illinois. Venue is proper only in the County of DuPage, Illinois.

18. Successors and Assigns. The terms of this Agreement will be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that neither party will assign this Agreement in whole or in part without the prior written approval of the other.

19. Waiver of Contract Breach. The waiver by one party of any breach of this Agreement or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof will be limited to the particular instance and will not operate or be deemed to waive any future breaches of this Agreement and will not be construed to be a waiver of any provision except for the particular instance.

20. Amendment. This Agreement will not be subject to amendment unless made in writing and signed by both parties.

21. Severability of Invalid Provisions. If any provisions of this Agreement are held to contravene or be invalid under the laws of any state, country or jurisdiction, contravention will not invalidate the entire Agreement, but it will be construed as if not containing the invalid provision and the rights or obligations of the parties will be construed and enforced accordingly.

22. Notice. Any notice will be in writing and will be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party at the party's place of business. Notices shall be addressed to designated representatives of both parties as follows:


**Village Manager
Village of Downers Grove
801 Burlington Ave.
Downers Grove, IL 60515**

Ferrara Fire Apparatus, Inc.

Holden, LA

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date indicated above.

Ferrara Fire Apparatus, Inc.

By: 

Title: VP / General Manager

Date: 12/7/17

Village of Downers Grove

By: _____

Title: _____

Date: _____

Exhibit B **Campaign Disclosure Certificate**

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing this Agreement, Consultant agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

Under penalty of perjury, I declare:

☒ Consultant has not contributed to any elected Village position within the last five (5) years.


Signature

Donald Bert McCutcheon
Print Name

☐ Consultant has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: _____
(company or individual)

To whom contribution was made: _____

Year contribution made: _____ Amount: \$ _____

Signature

Print Name

Suspension or Debarment Certificate

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement for goods or services equal to or in excess of \$100,000.00. Contractors receiving individual awards for \$100,000.00 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, the Bidder certifies to the best of its knowledge and belief, that the company and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal, state or local governmental entity, department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, or convicted of or had a civil judgment against them for a violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification: and
4. Have not within a three-year period preceding this application/proposal/contract had one or more public transactions (Federal, State or local) terminated for cause or default.

If the Bidder is unable to certify to any of the statements in this certification, Bidder shall attach an explanation to this certification.

Company Name: Ferrara Fire Apparatus, Inc.

Address: PO Box 249

City: Holden, LA Zip Code: 70744

Telephone: (225) 567-7100 Fax Number: ()

E-mail Address: Bert M @ FerraraFire.com

Authorized Company Signature: 

Print Signature Name: Donald Bert McCutcheon Title of Official: VP / General Manager

Date: 12/7/17

Downers Grove Fire Department

Downers Grove, Illinois 60515

INTENT OF PROPOSAL SPECIFICATIONS

It is the intent of these PROPOSAL specifications to cover the furnishing and delivery, to the Downers Grove Fire Department a complete pumper apparatus equipped as hereinafter specified.

These proposal specifications exceed the minimum requirements of the Fire Department and are intended to provide details of construction and materials, and where not otherwise specified are left to the discretion of Ferrara Fire Apparatus, Inc.

Ferrara Fire Apparatus, Inc. shall be solely responsible for the design and construction of all non-specified features. The apparatus shall conform to the current edition of the National Fire Protection Association's Pamphlet.

Ferrara Fire Apparatus, Inc. is an established manufacturer with a certainty of being capable of furnishing parts, service and technical assistance for the next TWENTY (20) Years.

Ferrara Fire Apparatus, Inc. ("FFA") is furnishing satisfactory evidence of its ability to construct the specified apparatus and certifies that the location of the factory where the apparatus is to be built is at 27855 James Chapel Road, Holden, LA 70744.

The manufacturer's specifications consist of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract must conform.

QUALITY AND WORKMANSHIP

The design of the apparatus proposed shall embody the modular design and construction technique as outlined.

The workmanship is of the highest quality in its respective field. Special consideration has been given to the following points: accessibility of the various components, which require periodic maintenance operations for ease of operation, including both pumping and driving operations and symmetrical proportioning of the overall apparatus.

Construction utilized shall be rugged and safety factors have been provided to carry loads as specified and to meet the road requirements and speed conditions as set forth under "Performance Tests and Requirements".

Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the removal of major component parts for service and/or repair. This includes but is not limited to the following: compartment doors, hinges, fender liners, running boards, hosebeds, and pump panels, etc.

APPARATUS STABILITY

The height of the fully loaded apparatus center of gravity shall not exceed the chassis manufacturer maximum.

The front to rear weight distribution of the fully loaded apparatus shall be within the limits set by the chassis manufacturer. The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer, under full load and all other loading conditions.

Difference in weight on the end of each axle, from side to side, when the apparatus is fully loaded and equipped shall not exceed 7%.

Downers Grove Fire Department

Downers Grove, Illinois 60515

PERFORMANCE TEST AND REQUIREMENTS

The apparatus will meet the performance requirements at elevations of 2000 feet (610m) above sea level.

The apparatus will meet the performance requirements while stationary on any grade of up to and including 6% in any direction.

From a standing start, the apparatus will attain a true speed of 35 mph (56 km/h), within 25 seconds on a level road.

The apparatus will obtain a minimum top speed of 50 mph (80 km/h) on a level road.

The apparatus will be able to maintain a speed of at least 20 mph (32 km/h), on any grade up to and including 6%.

The apparatus will be tested and approved by Underwriters Laboratories Incorporated in accordance with the standard practices for pumping engines.

ROAD TEST

Each manufacturer will conduct road test to verify that the complete apparatus is capable of compliance:

The test will be conducted on a dry, level, paved road that is in good condition. The engine will not operate in excess of the maximum no load governed speed.

Acceleration test will consist of two runs in opposite direction over the same route.

The apparatus will attain a true speed of 35 mph (56 km/h) from a standing start within 25 seconds.

The apparatus will attain a minimum top speed of not less than 50 mph (80 km/h).

If the apparatus is equipped with an auxiliary braking system, the apparatus manufacturers will road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer.

The service brakes will bring the fully laden apparatus to a complete stop from an initial speed of 20 mph (32 km/h) in a distance not exceeding 35 feet (10.7M) by actual measurement, on a substantially hard, level surface road that is free of loose material, oil, or grease.

FAILURE TO MEET TESTS

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the Ferrara Fire Apparatus, Inc. within thirty-(30) days of the date of the first trials.

Such trials shall be final and conclusive and failure to comply with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty (30) days after notice is given to FFA of such changes shall also be cause for rejection of the apparatus.

Downers Grove Fire Department

Downers Grove, Illinois 60515

Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the Fire Department during the above-specified period with the permission of FFA shall not constitute acceptance on the part of the Purchaser.

PRODUCT LIABILITY INSURANCE

Due to the high cost of replacement of said apparatus and to protect the Purchaser of its full rights, FFA carries garage liability insurance equal to or in excess of \$1,000,000.00.

SERVICE

FFA has an authorized dealer and service center within 50 miles of the Downers Grove Fire Department.

The authorized dealer shall employ Fire Apparatus technicians to insure the Purchaser that service shall be provided.

The dealer certifies that they shall stock at least one replacement part for all valves, primers, door latches, pump impellers, gauges, or any replacement part that might go wrong with this truck when it is in warranty. This shall insure the Purchaser that it shall get quick service on any warranty problem.

INFORMATION SUPPLIED AT TIME OF DELIVERY

Information required at time of delivery to be supplied by Ferrara Fire Apparatus, Inc. shall include:

- (1) The manufacturer's record of apparatus construction details, including the following information:
 - (a) Owner's name and address
 - (b) Apparatus manufacturer, model, and serial number
 - (c) Chassis make, model, and serial number
 - (d) GVWR of front and rear axles
 - (e) Front tire size and total rated capacity in pounds (kilograms)
 - (f) Rear tire size and total rated capacity in pounds (kilograms)
 - (g) Chassis weight distribution in pounds (kilograms) with water and manufacturer-mounted equipment (front and rear)
 - (h) Engine make, model, and serial number, rated horsepower, related speed and governed speed
 - (i) Type of fuel and fuel tank capacity
 - (j) Electrical system voltage and alternator output in amps
 - (k) Battery make, model, and capacity in cold cranking amps (CCA)
 - (l) Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
 - (m) Pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
 - (n) Pump transmission make, model, serial number, and gear ratio
 - (o) Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number
 - (p) Water tank certified capacity in gallons or liters
 - (q) Foam tank (if provided) certified capacity in gallons or liters
 - (r) Paint manufacturer and paint number(s)

Downers Grove Fire Department

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- (s) Company name and signature of responsible company representative
- (2) Certification of slip resistance of all stepping, standing, and walking surfaces
- (3) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability
- (4) If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications
- (5) If the apparatus has a fire pump or an industrial supply pump, the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed
- (6) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of the hydrostatic test
- (7) If the apparatus has a fire pump or an industrial supply pump, the certification of inspection and test for the fire pump or the industrial supply pump
- (8) If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source
- (9) If the apparatus is equipped with an air system, test results of due air quality, the SCBA fill station, and the air system installation
- (10) Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)
- (11) Written load analysis and results of the electrical system performance tests required in NFPA 1901 Chapter 13
- (12) When the apparatus is equipped with a water tank, the certification of water tank capacity

The fire apparatus manufacturer will also provide documentation of the following items for the entire apparatus and each major operating system or major component of the apparatus:

- (1) Manufacturer's name and address
- (2) Country of manufacture
- (3) Source for service and technical information
- (4) Parts replacement information
- (5) Descriptions, specifications, and ratings of the chassis, pump (if applicable), and aerial device
- (6) Wiring diagrams for low voltage and line voltage systems to include the following information:
 - (a) Pictorial representations of circuit logic for all electrical components and wiring
 - (b) Circuit identification
 - (c) Connector pin identification
 - (d) Zone location of electrical components
 - (e) Safety interlocks
 - (f) Alternator-battery power distribution circuits
 - (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems

Downers Grove Fire Department

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- (7) Lubrication charts
- (8) Operating instructions for the chassis, any major components such as a pump or aerial device, and any auxiliary systems
- (9) Precautions related to multiple configurations of aerial devices, if applicable
- (10) Instructions regarding the frequency and procedure for recommended maintenance
- (11) Overall apparatus operating instructions
- (12) Safety considerations
- (13) Limitations of use
- (14) Inspection procedures
- (15) Recommended service procedures
- (16) Troubleshooting guide
- (17) Apparatus body, chassis, and other component manufacturer's warranties
- (18) Special data required by NFPA 1901 standard
- (19) Copies of required manufacturer test data or reports, manufacturer certifications, and independent third-party certifications of test results
- (20) A material safety data sheet (MSDS) for any fluid that is specified for use on the apparatus
- (21) One (1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide

The Fire Apparatus Manufacturer shall deliver with the apparatus all manufacturers' operations and service documents supplied with components and equipment that are installed or supplied.

LIABILITY

FFA shall defend any and all suits assume all liability for the use of any patented process, advice or article forming a part of the apparatus or any appliance furnished under contract.

APPARATUS PURCHASE

The specified apparatus will be purchased off the HGAC contract.

PENALTY CLAUSE

Each day the apparatus exceeds the contracted delivery date a \$100.00 per day, per unit penalty clause shall be assessed.

PAYMENT TERMS

100% of the purchase amount shall be paid at awarded of the contract, within thirty (30) calendar days after the pre-construction meeting.

Downers Grove Fire Department

Downers Grove, Illinois 60515

Pre-Payment Terms-

Proposed delivery timeframe after receipt / acceptance of contract (or purchase order) will not begin until payment amount is received by Ferrara Fire Apparatus, Inc.

If pre-payment is late and if the Fire Department elects not to have the delivery extended, **\$95.00** per unit, per calendar day will be deducted from the pre-payment discount at time of final invoice.

PERFORMANCE BOND

FFA shall furnish a Performance Bond equal to one hundred (100%) percent of the total contract amount. The Performance Bond shall insure the prompt and complete performance of this contract.

SINGLE SOURCE MANUFACTURER

To provide the Purchaser with a single point of contact for service, warranty, and parts, proposals shall only be accepted from manufacturers who assemble the complete apparatus in their own facility.

VIRTUAL MANUFACTURING

The manufacturer shall have a web site available for the customers to 'watch' their unit being produced. The "Trucks in Production" shall be updated a minimum of three (3) times per week.

The web site shall also include documentation of cab and body crash tests, take a virtual tour of the production facility, videos of both current and new innovative products, updates on trade shows, photos of new deliveries and the opportunity to include customer 'Action Photos'.

Purchaser shall be able to access the web site without the requirement of a password.

PRINCIPAL DIMENSIONS

The apparatus shall have the following dimensions:

Overall Length: 32' – 11-1/4"

Overall Height: 10' – 1-1/2"

Wheelbase: 196"

Cab to Axle: 134"

CERTIFIED WELDERS

The manufacturer shall employ individuals that are certified aluminum and stainless steel welders. The welders shall be certified by an outside testing laboratory. The certifications shall be available for viewing through the Human Resources office upon request.

BODY WEIGHT DOCUMENTATION

The manufacturer shall weigh each body prior to mounting on the chassis. The information shall be included in the

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documentation of the finished apparatus. Each body produced by the manufacturer shall be weighed, not just one body per model.

DRAWING, PROPOSAL

There shall be a proposal drawing submitted to the Fire Department. This drawing shall be a visual interpretation of the apparatus proposed.

DRAWING, APPROVAL

Prior to construction, FFA shall provide three (3) approval drawings of the apparatus for the Fire Department's review. The drawings shall show such items as the chassis being utilized, lights, horns, sirens, pump panels, and all compartment locations and dimensions. The blueprint shall be a visual interpretation of the unit as it is to be constructed. The Purchaser shall sign all drawings. One (1) print shall be retained by the Fire Department, the dealer/sales representative shall retain one (1) print, and one (1) print shall be returned to the manufacturer.

DRAWINGS, REVISED APPROVAL

The original set of drawings, after being reviewed by the fire department, shall be revised to reflect any changes made by the fire department.

DRAWING, PUMP PANEL

A detailed drawing, to scale, of the pump panels shall be provided for the purpose of illustrating the standard location(s) of controls and discharges on the pump operator's panel. The drawing shall not be meant as an approval, or final construction drawing, rather it shall be used as an illustration drawing of a standard panel layout. This drawing shall include all of the gauges and controls located on the pump operator's panel. There shall also be a drawing of the pump panel for the driver and passenger side that will depict the final location of all pump panel components and shall be signed by both Ferrara and purchaser prior to apparatus manufacture.

PRE-CONSTRUCTION CONFERENCE

A pre-construction conference will be held at the factory prior to the actual construction of the apparatus. The conference will be held in the manufacturer's facility with four (4) representatives of the Fire Department and appropriate representatives of the manufacturer.

Transportation, lodging and meals will be the responsibility of the manufacturer.

INSPECTION TRIP, MID POINT

There will be a mid-point inspection for three (3) representatives of the Fire Department at the facility where the apparatus is being constructed. The Purchaser shall specify when the inspection will occur. Factory and Sales representatives will be available at the time of inspection.

Transportation, lodging and meals will be the responsibility of the manufacturer.

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INSPECTION TRIP, FINAL

There will be a final inspection for four (4) representatives of the Fire Department at the facility where the apparatus is being constructed. The inspection trip will be completed when the apparatus is complete. Factory and Sales representatives will be available at the time of inspection.

The final inspection will include as a minimum:

- Full access to the build file and factory personnel to provide answers for any issues found.
- Unit will be placed on a lift that will allow full inspection of the undercarriage.
- Road test shall be accommodated.
- Unit will be taken to pump test area where the pump and plumbing can be inspected while flowing water.
- General apparatus orientation and operation shall be provided at the pump test pit.

Transportation, lodging and meals will be the responsibility of the manufacturer.

TRANSPORTATION

To insure proper break-in of all components while still under warranty, the apparatus shall be delivered over the road under its own power (Rail and/or truck freight shall not be acceptable).

DELIVERY TIME

The apparatus shall be delivered within Three Hundred (300) calendar days after receipt of the approved signed off pre construction changes.

The manufacturer shall not be held liable for changes arising from its failure to make or delay in making delivery because of fire, flood, strike, riot, chassis shortage, accidents, acts of God, or any circumstances beyond our control.

APPARATUS FAMILIARIZATION & DEMONSTRATION

Familiarization and demonstration of the apparatus shall be by a competent and qualified person as defined in the current standard of NFPA 1901.

Familiarization of the apparatus shall include the following:

How to locate gauges or indicators and check all fluid levels and operational issues of the apparatus

How to tilt the chassis cab or hood assembly for access to the engine, fire pump, or aerial control, or any other device to allow access to fluids or for required maintenance

Interior cab controls, instruments, mirrors, safety devices or alarms, brake operations, transmission control, pump controls, exhaust regeneration (if provided), seat adjustments, warning light engagement, and other operational equipment

If the apparatus is provided with a fire pump system, the following minimum instructions:

- a) Setting of parking brake, proper transmission gear, and fire pump engagement operations
- b) Throttle control

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- c) Primer and tank-to-pump operation
- d) Use of pressure control devices
- e) Tank refilling operations
- f) Proper operation of discharge controls
- g) Proper shutdown and draining of system

If the apparatus is provided with a generator, the following minimum instructions

- a) Proper engagement if driven by the chassis
- b) Startup, operation, and shutdown of generator
- c) Monitoring of controls and instruments

If the apparatus is provided with a foam system, the following minimum instructions:

- a) Startup, operation, and shutdown of foam system
- b) Setting of foam percentages and other operational settings
- c) Proper flushing and draining of the system

If the apparatus is provided with a water tower or aerial device, the following minimum instructions:

- a) Positioning and locating the apparatus for safe operations
- b) Chassis parking brakes and engagement of hydraulic system
- c) Deployment of stabilization devices and use of ground pads
- d) Operation of elevation, extension, and rotation of the aerial device
- e) Operation of waterway, nozzle, and other firefighting devices of aerial device
- f) Operation and use of breathing air system (if provided)
- g) Specific aerial device maintenance and service areas for operators
- h) Shutdown and return to service operations
- i) Operation of tip controls and platform controls
- j) General familiarization and demonstration of aerial device
- k) Review of all safety devices, interlocks, and operational Hazards

MANUFACTURER SERVICE CONTACTS

The manufacturer must have a 24 hour/ 7 day a week, toll-free emergency hot line. The manufacturer must be capable of providing both in-house and on-site service for the apparatus. The service technicians shall be EVT certified in compliance with NFPA 1071 classifications F2 through F6. On-site service and maintenance shall be the primary function, to eliminate the apparatus having to leave the fire department jurisdiction. Copies of the certifications shall be made available through the Human Resources office.

SERVICE VEHICLES

The manufacturer shall have a minimum of 10 full time, company owned, service vehicles. The vehicles shall be available 24 hours a day, seven days a week to respond to customer needs. The Service Vehicles shall be operated by full time EVT Certified Technicians.

REPLACEMENT PARTS

Replacement parts shall be available directly from the manufacturer, as well as the dealer and/or service centers.

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SERVICE CENTER

WIRFS Industries, Inc.
4021 W. Main St.
McHenry, Illinois 60050
(815) 344-0464

Certified Fleet Services
560 N. Michigan St.
Elmhurst, Illinois 60126
(630) 279-8083

CUSTOM CHASSIS

It is the intent of the technical specifications contained herein to ensure the custom cab and chassis specified shall be engineered, designed, and manufactured exclusively for heavy-duty continuous use in extreme environments and rigorous adverse conditions.

Each custom cab and chassis shall be manufactured in strict compliance with all applicable requirements as set forth in the current edition of the NFPA (National Fire Protection Association) pamphlet 1901 with maximum safety as the key focus throughout the design and development phase of each fire and rescue chassis.

FRONT BUMPER

There shall be a 100,000 psi high tensile strength painted steel bumper provided fabricated from 10-1/2" x 3-1/2" x .375" steel channel bolted to the chassis frame rails utilizing grade 8 hardware protecting the front of the apparatus during head-on or angled collisions.

The bumper shall be painted job color.

The bumper shall be sprayed with F Shield #450 red then painted job color red over the F Shield (see #80-D2-2220).

RECESSED BUMPER POCKETS

The front bumper ends shall have recessed pockets to allow for mounting of warning lights.

TOW HOOKS, FRONT

Two (2) chrome plated tow hooks shall be mounted to the bottom of the front bumper frame extension rails. The tow hooks shall be attached with Grade 8 bolts.

FRONT BUMPER EXTENSION

There shall be a twenty-four inch (24") frame extension provided. The extension shall be made from heavy-duty steel in both C-channel and tubular shapes. The frame rail extension material shall measure 7" high x 3-1/2" wide x .375" wall thickness.

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The extension rails shall be bolted to the chassis frame rails through reinforcement plates, backed by the engine mounting crossmember. Fasteners utilized shall be Grade 8 bolts.

GRAVELSHIELD

A gravelshield constructed of 1/8" (.125") embossed aluminum tread plate shall be installed above the frame extension between the bumper and the front face of the cab.

BUMPER COMPARTMENT, DRIVER'S SIDE

There shall be a compartment provided in the front bumper gravelshield, driver's side, fabricated of 1/8" (.125) smooth aluminum plate with drain holes to allow drainage.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

COVER, DRIVER'S SIDE FRONT BUMPER COMPARTMENT

The driver's side bumper compartment shall have a hinged aluminum tread plate cover to secure the contents. The cover shall be secured in the closed position with a stainless steel latch.

BUMPER COMPARTMENT, CENTER

There shall be a compartment provided in the front bumper gravelshield, centered between the frame rails fabricated of 1/8" (.125) smooth aluminum plate with drain holes to allow drainage.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

Shall accommodate 50' of soft suction 5" and 100' of 1 3/4"

STRAP(S), CENTER FRONT BUMPER COMPARTMENT

The center bumper compartment shall have one (1) restraining strap with quick release buckle to secure the contents.

SPEAKER, PASSENGER'S SIDE

There shall be one (1) speaker installed through the front face of the bumper passenger side outboard.

The speaker shall be a Cast Products SA2401, 100-watts wired to the electronic siren.

AIR HORN, PASSENGER'S SIDE

There shall be one (1) 24" long Grover air horn installed in compliance with NFPA through the front bumper, passenger's side, outboard of the frame rail. The air horn shall be plumbed to the chassis, air supply system through an air protection valve, and manufactured from spun brass material with an easily separated die cast sounding unit for serviceability.

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AIR HORN, DRIVER'S SIDE

There shall be one (1) 24" long Grover air horn installed in compliance with NFPA through the front bumper, driver's side, outboard of the frame rail. The air horn shall be plumbed to the chassis, air supply system through an air protection valve, and manufactured from spun brass material with an easily separated die cast sounding unit for serviceability.

MECHANICAL SIREN

One (1) Federal Signal Q2B siren model Q2B-012NNSD electro-mechanical siren shall be installed through the front bumper, driver's side outboard. The Q2B siren shall be a streamlined, chrome plated siren designed to provide reliable and long-life operation. The electro-mechanical siren shall produce the distinctive Q2B sound that is a registered trademark of Federal Signal, and shall be provided with a heavy duty clutch and an electric brake.

The Q2B siren shall measure 10.5" high x 14" long x 10" deep and shall produce 123 decibels at ten feet. The siren shall operate off the apparatus' 12V system. The Q2B siren shall be recess mounted in the front of the apparatus.

Position Siren Switch Brake within easy reach of the Driver & Officer.

SIREN WIRING

The siren activation switch shall be wired through the chassis park brake and operate in the "Response Mode" only.

SIREN FOOT SWITCHES

Two (2) foot operated switches shall be installed, one (1) on each side on the driver and officer's side wired to the mechanical siren.

The switches shall be mounted on the forward vertical wall at the floor. Shall be toe kicked type switch.

AIR HORN CONTOL, LANYARD

There shall be one (1) lanyard air horn control installed in the cab between the driver and the officer. The lanyard shall be wired to the air horn(s).

AIR HORN WIRING

The air horns shall be active in both the "Scene" and "Response Mode".

SWITCH, HORN/AIR HORN SELECTOR

A driver controlled horn/air horn selector switch shall be installed in the cab and operate either air horn(s) or chassis electric horn through the horn ring button.

FRONT AXLE

The front axle shall be a Meritor MFS-18 with an 18,000-pound rating equipped with oil seals and transparent cover for oil level inspection.

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CHASSIS WHEELBASE

The chassis wheelbase shall be 196 inches.

CHASSIS FRAME RAILS

The chassis frame rails shall be constructed of 110,000-PSI minimum yield steel that has been formed into a "C" channel shape with dimension of 10.50" x 3.50" x .375 inches.

An inner frame liner of 110,000 Pound minimum yield with dimension of 9.69" x 3.13" x .313" shall be provided for additional strength and to reduce deflection. The frame liner shall run from centerline of front axle to rear of the mainframe rail. This liner shall be mitered at 45 degrees at the front axle.

The resulting frame system shall have a minimum section modulus of 30.38 cubic inches with a resisting bending moment of 3,342,000-inch pounds per rail.

The frame rails shall be powder coated in order to insure superior paint adhesion. Frame cutouts for the engine shall be made with a plasma torch in order to minimize the heat-affected zone caused by the cut.

All frame-mounted components shall be secured with flanged head bolts. Huck bolts shall not be acceptable.

PAINT, FRAME RAIL

The chassis frame rails, cross members, fuel tank and air reservoirs shall be completely encapsulated in a ruggedized, protective coating. The air reservoirs, reservoir hanger straps and fuel tank shall all be treated separately prior to assembly. The frame, cross members, bumper backing reinforcement plate, radiator skid plate, spring hangers, cab lock mounts and required bolts shall all be in place prior to treatment to ensure complete coverage.

F-Shield, a 100% solids, state-of-the art, VOC-free, plural-component, pure polyurea elastomeric membrane. This seamless system exhibits extraordinary performance characteristics. F-Shield is based on amine-terminated polyether resins, amine chain extenders and MDI pre-polymers. This membrane achieves an extremely tough, flexible, chemical and abuse resistant finish. F-Shield shall be used in specified areas for maximum protection.

This corrosion prevention system is designed to repel deicing agents commonly used on winter roadways. Moving parts, such as steering linkages, cab locks, spring suspensions, axles, etc., shall not be coated with this material, but shall be painted with high quality gloss black paint.

The color of the F-Shield shall be black.

STEERING SYSTEM

The steering system shall be a package certified by TRW for the application. All components between the steering column and the front axle shall be manufactured by TRW.

The steering system shall use a single TRW TAS-85 steering gear with the capacity to static steer the chassis loaded to 18,000 pounds with 315-size tires without exceeding 88% of the rated torque output of the gear. The use of two-(2) smaller gears or a single gear with an assist cylinder shall not be acceptable.

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CHASSIS ALIGNMENT

The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer. Cramp angle is set to achieve the greatest turning radius possible with the selected components of the apparatus. Each front wheel is set to zero degrees. The wheel is then turned until it reaches the steering stops. This measurement is the cramp angle.

FRONT SUSPENSION

The front suspension shall be parabolic (taper leaf) spring type, with three (3) leaves with an 18,000 pound serving rating. The leaves shall be a minimum of 4" wide x 54" long (flat), with grease fittings for lubrication installed in the spring pins. Axle stops with energy absorbing jounce bumpers shall be supplied on the spring top pad. Double acting Koni shock absorbers shall be provided on the front suspension.

FRONT BRAKES

The front axle shall be equipped with EX-225 air operated disc brakes and ventilated rotors.

CRAMP ANGLE

The cramp angle of the front axle shall be 45 degrees.

FRONT TIRES

The front tires shall be Goodyear 315/80R22.5 L/20 Ply- G670RV all-weather treads.

The load capacity shall be 18,000 pounds with a speed rating of 75 miles per hour when properly inflated to 130 pounds per square inch with steel or aluminum wheels.

WHEELS, FRONT ALUMINUM

The front wheels shall be Alcoa Aluminum model 89U631DB. The wheels shall be 22-1/2" x 9" ten stud, hub piloted polished aluminum disc type with Dura Bright finish.

Each wheel shall have a maximum load of 10,000-pounds.

WHEEL TRIM, FRONT WHEELS

The aluminum disc front wheels shall be provided with bright nut covers and hub caps.

MUD FLAPS, FRONT

The front axle mud flaps shall be constructed from hard black rubber and installed behind the tires.

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REAR AXLE

The rear axle shall be a Meritor RS-25-160 with a 27,000-pound service rating. The axle shall be equipped with oil seals.

REAR SUSPENSION

The rear axle suspension shall be leaf spring type rated at 27,000 pounds capacity. The main spring pack shall have fourteen (14) leaves with a four (4) leaf auxiliary pack. The suspension shall be a torque leaf, variable rate, self-leveling slipper type.

REAR AXLE DIFFERENTIAL

The Meritor RS series rear axle shall have a standard differential.

APPARATUS TOP SPEED

The rear axle shall be geared for a top speed of 65-68 MPH at governed engine speed.

REAR BRAKES

The rear axle shall be equipped with EX-225 disc brakes up to 27,000 pounds.

REAR TIRES

The rear tires shall be Goodyear 12R22.5 Load Range "H" G622 RSD all season traction treads.

The load capacity shall be 27,000 pounds with a speed rating of 75 miles per hour when properly inflated to 120 pounds per square inch with steel or aluminum wheels.

WHEELS, REAR ALUMINUM

The rear wheels shall be Alcoa Aluminum model 883672DB. The wheels shall be 22-1/2" x 8-1/4" ten stud, hub piloted polished aluminum disc type with Dura Bright finish.

Each wheel shall have a maximum load of 7,400-pounds.

WHEEL TRIM, REAR WHEELS

The rear axle wheels shall be trimmed with stainless steel "Lincoln Hat" hub covers and lug nut covers.

TIRE PRESSURE MONITORING SYSTEM

Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap with an LED tire alert to indicate tire pressure conditions. The LED shall flash when the tire drops 8 psi below the factory setting.

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HOSE AND HARNESS ROUTING

Battery cables, hydraulic hoses and air lines shall be routed through the vertical face of the chassis frame rails using bulkhead connectors. The use of grommets through frame rails, as well as running hoses or cables under, over or ahead of the chassis frame rails to achieve positive connections shall not be acceptable.

For ease of maintenance, the wiring harnesses, hydraulic hoses and air hoses shall be divided down each frame rail. The hydraulic and air hoses shall be run, primarily, down the inside of the right side frame rail, while the electrical harnesses shall be run, primarily, down the left side frame rail. Harnesses and hoses shall be mounted using rubber coated, stainless steel holders and, where necessary, heat resistant zip loom.

AIR BRAKE SYSTEM

The air brake system shall meet the requirements of FMVSS-121. The system shall consist of three-(3) reservoirs with a total capacity of 5100 cubic inches. The system shall be of dual circuit and quick build up design powered by an engine mounted gear driven air compressor. The system shall be protected by a heated air dryer with heated automatic moisture ejector on the wet tank and quarter turn brass drain valves on the other tanks.

The entire chassis air system shall be plumbed utilizing reinforced nylon air lines in conformance to SAE J 844-94, Type B and USDOT standards. All of the airlines shall be color coded to correspond with an air system schematic and shall be adequately protected from heat and chafing.

Color coding shall be as follows:

Blue: Supply Lines

Green: Primary Lines

Red: Secondary Lines

Orange: Park Brake Lines

Yellow: Accessory Lines

Purple: Pump Shift - Supply Line

White: Pump Shift / Road Mode Line

Black: Pump Shift / Pump Mode Line

The compressor discharge shall be plumbed with stainless steel braided hose lines with a Teflon lining.

The system shall be plumbed using color-coded nylon airlines with brass push-lock fittings.

COMPRESSOR

Air compressor shall be a Wabco brand, minimum of 18.7 cubic feet per minute capacity. Air brake system shall be the quick build up type. The air compressor discharge line shall be stainless steel braid reinforced Teflon hose.

A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi (552 kPa).

The chassis air system shall meet NFPA 1901 latest edition for rapid air pressure build-up within sixty (60) seconds from a completely discharged air system. This system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the sixty (60) seconds build-up time.

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ANTI-LOCK BRAKES W/ATC & ELECTRONIC STABILITY CONTROL

The apparatus shall have a Wabco ABS-based Electronic Stability Control (ESC), which offers another level of apparatus control. This automatic braking management system reduces the possibility of a side rollover and assists in the directional stability of the apparatus. Upon reaching critical lateral acceleration thresholds, the system intervenes to regulate the apparatus' deceleration and braking functions. Reducing the engine's RPM by overriding the foot throttle input and applying the engine retarder (if equipped) to slow the apparatus giving the driver added control and maneuverability. The ESC shall also apply braking power to selective wheel of the front and rear axles to assist in stabilizing the apparatus to its intended direction. This selective braking application and reduction of speed and torque reduces the possibility of spinouts and side rollovers even in adverse conditions.

A Wabco 4-channel Anti-Lock Braking System shall be installed which includes four (4) wheel sensors and four (4) modulators to control and compensate braking force at each wheel. This system shall monitor all wheel ends regardless of suspension type, and which axle it sees braking forces first.

An ABS warning light shall be installed on the driver's dash that remains illuminated until the apparatus is moving at least four-(4) miles per hour. An ABS test switch shall be installed in the "Diagnostic Information Panel" that when pressed, sends the system into diagnostic mode causing the ABS light to blink (I/O) indicating a flash code. A listing of flash code definitions is included in the Wabco Owner's Manual.

Automatic Traction Control (ATC) shall be installed to sense wheel slip, apply air pressure to brakes, and reduce engine torque to provide improved traction. An ATC indicator light shall illuminate when the system is active.

A mud and snow switch shall be provided. When the switch is in the "ON" position, it shall allow momentary wheel slip to obtain traction under extreme mud and snow conditions.

The system also includes a Steering Angle Sensor (SAS), which informs the system of the degree in which the steering is turned to one side or the other. Along with the SAS, an ESC module is mounted mid-frame at the rear of the chassis cab to detect roll, pitch, and yaw angles and computes which wheel(s) brake(s) shall be acted upon.

AIR DRYER

The air system shall include a Bendix AD-9 air dryer with integral 12-volt heated moisture ejector. The air dryer shall have a desiccant cartridge and incorporate an integral turbo cutoff valve. The turbo cutoff allows the air dryer to purge water and contaminants without any loss of turbo boost or engine horsepower.

AUXILIARY AIR INLET

An air inlet shall be located inside the driver's door and incorporate a check valve.

ENGINE

The apparatus shall be equipped with an EPA17 Cummins L9 450 turbocharged diesel engine.

Model: L9

Number of Cylinders: Six

Bore and Stroke: 4.49 x 5.69

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Displacement Liter: (Cu. In.) 8.9 (543)
Rated BHP: 450 @ 2100 RPM
Torque: 1250 ft.lb. @ 1400 RPM
Governed RPM: 2200
Oil Capacity / Type 7.3 gallons / SAE CJ-4
Fuel Requirement Ultra low sulfur diesel (15 ppm max.)

Standard equipment on the engine shall include the following:

Selective Catalytic Reduction (SCR) after treatment
Cooled Exhaust Gas Recirculation system
Charge air cooling
High Pressure, Common Rail Fuel System
Fuel Filter with Check Valve and Water Separator
Fuel Strainer
Governor – Electronic, interact system
Injectors – Electronically controlled full authority injection
Lube Oil Cooler – Integral
Lube Oil Filter – Full Flow
Turbocharger – Variable geometry type
Air Compressor – Wabco 18.7 CFM

The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip.

A heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.

TRANSMISSION

The chassis shall be equipped with an Allison 3000 EVS automatic transmission. It shall have 4th gear operating controls and programmed for Fire Apparatus vocation. An electronic oil level indicator shall be provided as well as a diagnostic reader port connection. The transmission shall be geared to provide one-to-one ratio in fourth gear for fire pump applications. This dedicated "lockup" circuit is provided for pump operation. The transmission fifth gear shall be an overdrive ratio, permitting the apparatus to reach its top speed at the governed engine speed.

The transmission shall be equipped with an automatic neutral feature. Applying the parking brake shall command the transmission to neutral, regardless of drive range requested on the shift selector which shall require re-selecting the drive range to shift out of neutral.

The transmission shall be equipped with dual PTO ports with engine speed capabilities. The transmission shall be cooled by the radiator-mounted heat exchanger. The transmission fluid shall meet Allison specification TES-295.

TRANSMISSION SHIFTER, PUSH BUTTON

The transmission shall be controlled by an Allison push button shifter internally illuminated for night operation. The

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shifter shall be mounted on the dash to the right of the steering column. The transmission shall be capable of five (5) speed operation.

The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level on the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.

DRIVELINES

The chassis shall be equipped with Neapco 1710 series driveshaft with full round yokes and universal joints. The driveshaft tubing shall be a minimum of 4.00" diameter with .134" wall thickness. The drivelines shall be balanced at a minimum of 3000 RPM.

FIRE PUMP MOUNTING

Extra heavy-duty mounting brackets shall be bolted to the chassis frame rails for the installation of the fire pump. The mounting brackets shall be positioned aligning the pump insuring the angular velocity of the driveline joints are the same at each end allowing for full capacity performance with minimal vibration.

ENGINE COMPRESSION BRAKE

The engine shall be equipped with a Jacobs "C-Brake" compression brake controlled by two (2) switches located in the cab, an on/off and low/medium/high. The compression brake shall interface with the anti-lock brake controller to prevent engine brake operation during adverse braking conditions.

A pump shift, interlock circuit shall be provided to prevent the engine brake from activating during pumping operation.

ENGINE COOLING SYSTEM

The engine cooling system shall have the capacity to cool the engine according to the engine manufacturer's requirements.

RADIATOR

The engine radiator shall be of a bolted design and have a minimum core area of 1570 square inches. The top and bottom tanks shall be stamped 11-gauge steel. The tanks shall be attached to the header assemblies with a minimum of fifty (50) 5/16" bolts. The spacing between fasteners shall not exceed 2.00 inches in order to minimize the possibility of leaks.

The header plates shall be made of 16-gauge brass while the tubes shall be .0068-inch thick brass and .076 by .625 inches in size. The tubes shall have a smooth bore with welded seams which allows for cleaning of the radiator.

The radiator shall contain three rows of tubes with a minimum of 98 tubes per row for a total of not less than 294 tubes. The tubes shall be arranged in an inline profile across the core. Louvered serpentine fins constructed of copper with a density not greater than 16 fins per inch shall be used in the construction of the radiator.

The radiator tubes shall be attached to the header plates with a Beta-Weld dual bonding process. The coolant side connection shall be welded, while the airside shall be soldered.

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The top tank shall include an integral deaeration tank, which removes air from the engine water. The top tank shall include a sight glass for coolant level inspection without removing the radiator cap. A low coolant warning shall be incorporated to alert the driver.

The bottom tank of the radiator shall incorporate oil to water plate-type cooler for the transmission. The cooler is designed to cause a turbulent flow of the transmission oil through the core to force heat transfer. The cooler shall be sufficient to cool an Allison Transmission without output retarders.

To minimize stress from road and engine vibrations on the radiator, a shock mount shall be used. This mounting system shall consist of .375" outside diameter long threaded rods, washers and bolts plus heavy rubber shock absorbers.

A high efficiency fan shall be surrounded by a formed welded fan shroud. The sweep of the fan shall not exceed the width of the radiator core. Fan diameters that exceed the width of the radiator core shall not be acceptable.

CHARGE AIR COOLER

The charge air cooler shall be constructed of aluminum with cast, aluminum side tanks. The cooler shall have a frontal core area of not less than 1033 square inches.

The exterior fins shall be louvered serpentine design constructed of .006-inch thick aluminum and have a density no greater than seven (7) fins per inch. The internal fins shall be designed to create air turbulence in order to increase heat transfer efficiency.

The charge air cooler shall be mounted directly ahead of the radiator and to the radiator headers. Rubber isolators shall be used at the mounting points to reduce transmission of vibrations.

The piping between the charge air cooler and engine shall use four-(4) ply silicone woven Nomex hoses with stainless steel bands. The bands are used to maintain the shape of the hose during changing turbo boost pressures. The hoses shall be attached with stainless steel constant tension hose clamps.

A Coolant Overflow shall be provided as standard.

SKID PLATE, RADIATOR

The radiator installation shall include a heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis. The skid plate shall be designed so the angle of approach is not affected.

The skid plate shall be integral with the chassis frame and constructed from 3/8" thick steel plate.

COOLING SYSTEM FAN

The engine cooling system shall incorporate a thermostatically controlled fan clutch. When the fan clutch is disengaged, the apparatus shall have improved apparatus performance, cab heating in cold climates, and fuel economy, while eliminating the potential dangers associated with a fan going from non-rotating to rotating as found with other style fan clutches.

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The fan shall automatically lock-up when the apparatus is placed in pumping mode.

A shroud and recirculation shields system shall be used to ensure that once air has passed through the radiator, the same air is not drawn through again.

RADIATOR COOLANT, LONG LIFE

The coolant system shall contain a mixture to keep the coolant from freezing to a temperature of -34 degrees F.

The coolant supplied shall be Long Life Coolant compatible with the engine manufacturer's requirement.

COOLANT HOSES

The chassis shall be equipped with silicone hoses for the radiator and heater circuits.

COOLANT HOSE CLAMPS

Constant tension hose clamps shall be provided for all coolant and heater hoses of 1/4" diameter and greater.

AUXILIARY ENGINE COOLER

The cooling system shall have a tube and bundle engine cooler mounted in the upper radiator water pipe. Water from the fire pump shall be circulated through 1/2" tubing to the cooler. A valve located on the pump panel shall control the cooling circuit.

FUEL TANK

The chassis shall be equipped with a 50-gallon rear mounted fuel tank. The tank shall be constructed of stainless steel with stainless steel mounting straps and rubber isolators secured to the bottom flange of the chassis frame rails. The tank shall be baffled to prevent sloshing, vented, and have a drain plug installed on the bottom. A 240-33 ohm fuel-sending unit shall be provided and broadcast across the SAE J1939 data link.

The tank shall be certified to meet FMCSR 393.65 and 393.67.

FUEL LINES

The fuel lines shall be wire braid reinforced fuel grade hose. They shall have reusable fittings and be routed along the inside of the frame rails. Fuel lines shall be protected against chaffing by non-conductive, frame mounted standoff fasteners and, where necessary, with heavy-duty plastic zip loom.

FUEL SHUTOFF VALVE

One (1) fuel shutoff valve shall be installed in the suction side of the fuel lines near the fuel filters to prevent the loss of prime during fuel filter maintenance.

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FUEL FILTER, SECONDARY

The Cummins engine shall be supplied with a secondary fuel filter mounted to the engine.

FUEL/WATER SEPARATOR, PRIMARY FILTER

The Cummins ISL engine shall be supplied with a primary fuel water separator with a bottom drain valve mounted in the chassis frame. The LMC will display "WATER IN FUEL" and an alarm will sound when the water needs to be drained from the fuel water separator.

EXHAUST SYSTEM

The apparatus shall contain a single module device that houses a particulate filter and SCR (Selective Catalytic Reduction) downstream of the engine's turbo. This single module device is required to maintain US 2017 Emissions Certification. This filter and SCR device replaces the conventional style filter. The location has been engineered, tested, and set to allow for proper regeneration. Therefore, this filter cannot be removed, altered, or relocated.

A LMC (Lightbar Message Center) shall include lights for this system and shall be located in the cab informing the driver of the system's status. At times a forced regeneration may be required, which would be indicated by a combination of illuminating and/or flashing lights depending on the engine model.

A dual momentary switch labeled "REG. INHIBIT / NORMAL / REG. FORCED" shall be located within reach of the driver's seated position. The momentary REG. FORCED position initiates the forced regeneration if a regeneration is required. The momentary REG. INHIBIT position prevents the apparatus from having the ability to regenerate. Once the inhibit feature has been activated the ignition switch must be cycled off/on to return the apparatus to normal regen. All vehicles equipped with pumping applications shall allow for passive regeneration whenever the system requires and the engine is at its proper parameters unless inhibited by the DPF inhibit switch. In no way shall this feature affect the RPM of the engine being controlled by the pump operator.

The engine exhaust system shall be horizontal in design using stainless steel tubing mounted under the frame rail right side extending forward of the rear wheels.

An exhaust temperature mitigation device shall be installed. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet.

HEAT SHIELDS EXHAUST SYSTEM

Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF. Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer.

All harnesses and cables, in proximity to exhaust system components, shall be protected with insulation.

DPF REGENERATION PROCESS

NFPA 12.2.6.7.1 the regeneration process shall be activated by two methods:

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1) Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8km/hr) whether the apparatus is in motion or is operating in stationary pump mode with an engine rpm sufficient to register 5 mph (8 km/hr) on the speedometer.

2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment.

There shall also be an inhibit switch placed near the driver to inhibit an automatic Regen.

The LMC shall include the following three lights. HIGH EXHAUST TEMP, REGEN INHIBIT and DIESEL PART FILTER.

The dual momentary switch labeled "REG. INHIBIT / NORMAL / REG. FORCED" shall be installed to the right of the steering column, momentary up shall be Regen Inhibit, middle shall be Normal, and momentary down shall be Reg. Forced. The LMC will light up indicating the regeneration is inhibited whenever the Inhibit has been selected.

TAIL PIPE ADAPTER

There shall be a Plymovent tailpipe adapter (non-magnetic) installed on the apparatus. The apparatus exhaust system shall be modified to accept the collar.

ALTERNATOR

The alternator shall be a Delco Remy model 55SI 430 amp. The alternator shall be engine driven via a poly-groove power belt with an automatic tensioner. The alternator shall be a brushless design. The alternator shall meet all current applicable NFPA 1901 Edition requirements for performance.

BATTERY SYSTEM

The battery system shall be a single system consisting of six (6) Interstate model 31-LHD Group 31, 12-volt DC, heavy-duty, high cycle automotive batteries. The battery bank shall have a group rating of 4500 cold cranking amperes (CCA) and a reserve of 1080 minutes at zero degrees Fahrenheit.

All battery wiring shall be welded battery cable capable of handling 125% of the actual load. It shall be run through a heat resistant flexible nylon "HTZL" loom rated at a minimum of 300 degrees Fahrenheit. All cable connections shall be machine crimped and soldered.

BATTERY BOXES

The chassis batteries shall be mounted in welded and bolted stainless steel battery box. The battery hold-downs shall be made of structural, stainless steel angle. Painted carbon steel battery boxes shall not be acceptable.

SWITCH, MASTER BATTERY DISCONNECT

The chassis batteries shall be wired in parallel to a single 12-volt electrical system, controlled through a heavy-duty, Guest brand rotary type, master disconnect switch. The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab. All electrical circuits shall be disconnected when the switch is in the "OFF" position.

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TOTAL SYSTEM LOAD MANAGER W/HIGH IDLE

The apparatus shall be equipped with a Class 1 Total System Manager (TSM) for performing electrical load management. The TSM shall have two (2) modes of operation, a "Calling Right of Way" and a "Blocking Right of Way". The "Blocking Right of Way" mode is activated only when the park brake is set. Load shedding shall "only" occur when the apparatus is in the "Blocking Right of Way" mode or when the battery voltage level reaches your programmed shed level.

Outputs 1-12 shall be independently programmable to sequence on with the ignition or master warning switch. Outputs 1-12 shall also be programmable to be activated during the "Calling Right of Way" mode and/or the "Blocking Right of Way" mode. Output 13 is user configurable output and is programmable for activating between 10.5 and 15 volts. Output 14 shall provide a low voltage warning for an isolated battery. Output 15 shall be designated to activate a fast idle system. Output 16 shall provide a low voltage alarm that activates at the NFPA required 11.8 volts.

The Total System Manager shall have an internal digital display to indicate systems voltage is in normal operation mode and indicates the output configuration during programmable mode.

The Total System Manager shall be protected against reverse polarity and shorted outputs, and be enclosed in a metal enclosure to enhance EMR/RFI protection.

BATTERY CHARGER

A Kussmaul Auto Charge 1200 series model 091-187-12-Remote shall be mounted in the apparatus to maintain the chassis electrical system.

The onboard automatic battery charger shall sense battery voltage drop and recharge the batteries to full capacity. The state of charge shall be indicated by the bar graph located on the front of the unit.

The charger shall have the following operational specifications:

Input:	120 volts, 60 Hz, 10 amps
Output:	12 volts DC, 40 Amps
Input Fuse:	15 amps, Fast Acting
Voltage Sense:	Remote Electronic

The battery charger shall supply a 'single battery bank' with automatic operation and with an aluminum enclosure. The system shall have a built-in sense circuit to check battery voltage 120 times a second; the system shall compensate for voltage drop in charging wires and provide quick recharging with no overcharging. The unit shall include front panel connections for a remote display.

SUPER AUTO-EJECT, 20 AMP

There shall be provided one (1) super auto-eject type receptacle model 091-55-20. A solenoid wired to the apparatus starter is energized when the engine is started. This instantaneously drives the plug from the receptacle. The receptacle shall be provided with a weatherproof cover. The cover shall be spring loaded to close, preventing water from entering when the shoreline is not connected. The super auto eject receptacle shall be mounted in a location specified by the Fire Department and is designed to accept a 120V AC from a shoreline plug.

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The UL maximum allowable amperage draw on receptacles is generally 80% of their listed rating, for example, the 20-amp receptacle should not carry more than 16-amp continuous load. When adding the different amperage draws of the components being installed on the chassis, be sure to figure in whether the components shall draw a continuous load or intermittent load.

Change to the New Kussmaul Cover that has the Bar Graph when it comes out.

The Auto Eject cover shall be a Kussmaul 091-55RD, red in color.

SHORE POWER INLET PLATE

A shore-power "Inlet Plate" shall be permanently affixed at or near the power inlet.

The plate shall indicate the following:

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

DISPLAY, BAR GRAPH

The charger shall include a model 091-199-001 remote digital display.

CUSTOM CAB

The cab shall be an engine forward extended, medium four-door, (raised roof) full tilt. The cab shall be an "Open Interior" roll cage design requiring no inner walls or vertical interior supports. The cab roof shall be raised 8 inches providing additional headroom above the crew area. The raised portion shall start midway over the driver and officer seats. The cab's seating capacity for emergency personnel shall be six (6).

All storage areas inside the cab shall fully comply with NFPA 1901 restraint requirements of 9G's.

CRASH TEST

The cab shall exceed the strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R. The test shall consist of an impact load test and a vertical load test to the cab.

The cab shall have a frontal impact test via pendulum, with an impact load in excess of 127% of the ECE-29R Standard. The estimated speed of the 3736-lb (1698-kg) pendulum shall be a minimum of 18.2 mph. The cab doors shall be closed during the impact test but be able to open after impact. There shall be no passenger intrusions or any structural component failures. The cab shall meet or exceed all criteria of this portion of the test.

In conjunction with the frontal impact test, a vertical load test shall be implemented to the cab. The cab roof shall be loaded with a minimum of 65,979 lbs. (29.53 metric tons). There shall be no failure to the cab structure or mountings, any passenger compartment intrusion or degradation of occupant survival space, or any other structural failure. The cab shall meet or exceed all criteria of this portion of the test.

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A complete photographic, video, data, and dimensional record of these tests shall be available and placed on record for customer evaluations.

CAB MATERIALS

The cab shall be constructed entirely of aluminum alloy extrusions and 3/16" (.188) thick, 5052-H32 alloy, marine grade aluminum sheets. The corner posts, door slam posts, roof rails and doorframes shall be made of custom extrusions designed specifically for this cab with slots for inserting the skin. The rear wall and roof shall be reinforced with a grid of rectangular extrusions, which are welded to the overall cab extrusion framework. The front corner caps shall consist of castings designed specifically for this cab with relief areas cast in place for attachment of roof skin and intersecting structural extrusions. Overlapping formed corner caps are not acceptable.

CAB DIMENSIONS

- Overall width skin to skin: 100 inches
- Overall apparatus width: 120 inches (w/standard mirrors)
- Overall length: 136 inches
- Cab Height Front: 87 inches
- Cab Height Rear: 95 inches
- Center of front axle to back of cab: 62 inches
- Windshield area: 4200 square inches
- Front grill opening: 470 square inches
- Side grill opening: 105 square inches
- Cab full tilt angle: 45 degrees
- Cab full tilt height: 187 inches
- Floor to ceiling in front: 60 inches
- Floor to ceiling in rear: 66 inches
- Engine cover height: not to exceed 27-1/2" front-to-back and side-to-side
- The Driver shall have no less than 24-1/4" of hip room
- The Officer shall have no less than 23-1/4" of hip room

DOUBLE WALL CAB FACE

The cab front shall be of double wall construction resulting in a sealed firewall. The inner and outer walls shall both be formed from 3/16" thick, 5052 H32 alloy aluminum with structural aluminum reinforcements. This design provides for increased structural integrity, crew safety, and reduced road noise in the passenger area. The outer wall is used for mounting forward lighting, grill and windshield wipers. The inner portion shall be treated with a heavy black undercoating material for corrosion prevention.

SEALED ENGINE TUNNEL

The engine tunnel shall be a structural part of the passenger cab, constructed from welded 3/16" aluminum plate and reinforced with aluminum extrusions. The rear of the engine tunnel shall be no less than 57" inches from the rear wall of the cab, allowing maximum legroom for forward facing passenger. After welding, the seams shall be completely sealed with silicone caulking.

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Engine enclosures that are not an integral part of the cab structure are not acceptable.

The interior of the engine tunnel shall be insulated with 1" thick foil backed insulating foam, attached with stud and button method. A cross-section analysis of the insulation shall reveal a 1/8" thick barrier material for additional noise and heat insulation.

CAB FLOORS

Cab floors shall be constructed from an aluminum extruded frame and 3/16" thick aluminum plate. Floor mats and insulation are detailed later in this specification.

The forward cab floor shall be as large as possible for both the driver and officer. Floorboards shall extend in width from the side of the engine tunnel, all the way to the cab door inner panel. They shall extend forward from the seat riser to the inner portion of the double wall cab face. The officer shall have approximately 28" of foot room.

The entire rear floor of the cab, to reduce trip and fall hazards, shall be a single plane. In applications requiring the use of a top-mounted PTO, a raised area in the floor may be required.

For maximum crew comfort and elimination of leg fatigue during emergency responses, the floor beneath the rear facing jump seats shall be large enough for a seated firefighter to rest both feet side-by-side. Cab floor designs that are wide enough for only one foot shall not be accepted.

CAB CORROSION PROTECTION

A corrosion preventative material shall be applied during cab construction. A ten-(10) year warranty against corrosion perforation shall be provided for the cab.

WHEEL WELL LINERS

Full wheel well liners shall be installed beneath the cab to protect the bottom of the cab from road splash. The liners shall be constructed of aluminum and be full width.

The wheel well liners shall be attached with threaded fasteners and be easily removable for service.

FENDERETTES

Bright polished stainless steel fenderettes shall be installed at the wheel well openings. A rubber gasket shall be installed between the fenderette and cab to eliminate contact of dissimilar metals.

WINDSHIELD

The windshield shall have approximately 4200 square inches of unobstructed viewing area. It shall be a two-(2) piece design with tinted automotive safety glass, with a wraparound design. A .030-inch thick vinyl layer shall separate the laminated glass.

All other cab glass shall be tinted and tempered.

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INTERMITTENT WINDSHIELD WIPERS

Two electric "Pantograph" style windshield wipers shall be installed on the front face of the cab. The motors shall operate through a 72-degree sweep and include 24-inch blades to give superior wiper coverage. A washer reservoir of not less than 70 ounces shall be mounted to a latched door recessed in the officer's step.

A switch located on the turn signal control arm shall operate the intermittent wipers.

EXTERIOR GRAB HANDLES

Stainless steel handrails with a knurled, slip-resistant finish shall be positioned behind each cab door. Grab rails shall be minimum 24" in length. Molded rubber gaskets shall be mounted between the grab handles and the cab in order to prevent corrosion due to dissimilar metals being in contact.

EXTREME DUTY CAB INTERIOR

Cab floors shall be covered with a pebble grain rubber matting with barrier type insulation. Edges of the insulation shall be trimmed with a cast aluminum foot plate for a pleasing appearance.

An insulated covering shall be fitted over the engine tunnel. Made from the same material as the cab floor insulation, this covering shall insulate the cab from engine heat and noise. A Cast Products aluminum door on top of the engine tunnel shall provide access for fluid checks.

The back side of the engine cover, as well as a 2" to 3" return on the top side, shall be covered with a sprayed aluminum panel and be of sufficient strength to allow for 9G resistant mounting of any optional hand lights, entry tools, or other fire rescue equipment specified by the Purchaser.

The cab shall have a custom built, smooth aluminum plate dashboard, overhead console, glove box, instrumentation panel and switch panel. The front overhead console shall include room for the three sun visors and the door open indicator light.

The front door posts shall be trimmed with styled aluminum covers that conceal any wiring, as well as including a mounting area for rubberized grab handles. The center windshield post shall be covered with F-Shield paint finish.

Prior to installing the headliner and rear wall padding, minimum R-7 insulation, shall be installed between the interlocking extrusions.

These covers serve to finish the interior, cover wiring harnesses and insulate the interior from sound and heat.

CAB STEPS

All cab steps shall be of a stationary, fixed design that use no moving parts and requires no periodic maintenance other than cleaning.

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There shall be an open-grip, bright finish step at each cab door opening. The area under the step shall be enclosed to prevent road dirt from entering the cab. There shall be provisions made at the front of the step for easily flushing out any dirt accumulation.

At each door opening there shall also be an intermediate cab step. Intermediate steps shall be full width of the doorstep area and overlaid with embossed aluminum tread plate.

CAB STEP HEIGHTS

The distance from level ground to the first cab step shall be 19-21 inches without using swing-down style or under-cab "stirrup" auxiliary steps.

The distance from first cab step to intermediate step shall be approximately 12.5 inches front and rear.

The distance from intermediate step to cab floor shall be approximately 9.5 inches in the front and 12 inches in the rear.

UREA STORAGE TANK

There shall be a 10-gallon urea tank located under the extended portion on the cab. A urea level gauge shall be provided in the cab on the main instrument panel.

There shall be a DEF fuel fill assembly mounted in the left crew cab extension. The fill assembly shall have cast aluminum door and fuel fill cap with retention ring. The assembly shall be properly labeled "DIESEL EXHAUST FLUID ONLY".

Paint Door to match Primary Color Red.

CAB DOORS

All cab doors shall be full length, designed to cover the step well area. Each cab door shall be flush type with a minimum opening of 85 degrees.

The front doors shall be approximately 40" wide by 78-1/2" tall. The doors shall have a two-piece window, one operational and one fixed. The combined viewing area shall be no less than 796 square inches. For added safety, the front door windows shall slant down for maximum visibility.

The rear doors shall be approximately 34" wide by 86-1/2" tall. The doors shall have a two-piece window, one operational and one fixed. The combined viewing area shall be no less than 913 square inches. The crew area windows shall have a dark tint.

The doors shall include a bulb style rubber seal around the perimeter of each door frame ensuring a weather tight fit.

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with a chrome plated finish. The interior latch shall be cast aluminum, oversized for easy access with a gloved hand.

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UPPER DOOR PANELS, INTERIOR

There shall be four (4) interior upper front and rear door panels installed covered with "F-Shield" extending from the window down to the lower kick plate. The color of the panels shall match the interior of the cab unless otherwise specified.

"F-Shield" is a 100% solids, state-of-the art, VOC-free, plural-component, pure polyurea elastomeric membrane. This seamless system exhibits extraordinary performance characteristics. F-Shield is based on amine-terminated polyether resins, amine chain extenders and MDI pre-polymers. This membrane achieves an extremely tough, flexible, chemical and abuse resistant finish. F-Shield shall be used in specified areas for maximum protection.

LOWER DOOR PANELS, INTERIOR

There shall be four (4) interior lower front and rear door panels installed covered with "F-Shield" extending from bottom of the upper panel to the bottom of the door. The color of the panels shall match the interior of the cab unless otherwise specified.

DOOR HINGES

Each cab door shall be attached to the cab with two concealed automotive style hinges with restraining strap.

CAB DOOR LOCKS

The door locks shall be electric over manual with an individual master controls at each door. Each rocker switch shall control all locks on all cab doors. There shall be individual twist type door locks at each door handle.

In accordance with FMVSS 206, all exterior door locks shall be keyed alike.

An unlabeled switch shall be located on the Pump Operator's Panel to unlock the cab doors.

CAB DOOR WINDOWS, ELECTRIC

All cab door windows shall be electrically operated. The driver's door shall contain four (4) switches to control the operation at each door. All remaining doors shall contain one (1) heavy-duty switch to control the window operation located on top of the door panel.

FIXED CAB WINDOW, LEFT SIDE

A window of not less than 16-1/2" wide by 33-1/2" high shall be installed in the left sidewall of the cab between the front and rear door. The glass shall be tempered, dark tinted and retained with one-piece triple locking rubber lacing.

FIXED CAB WINDOW, RIGHT SIDE

A window of not less than 16-1/2" wide by 33-1/2" high shall be installed in the right sidewall of the cab between the front and rear door. The glass shall be tempered, dark tinted and retained with one-piece triple locking rubber lacing.

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CAB TILT LOCK

The cab shall be supported at four points. At the front, there shall be two center bonded bushings. At the rear, there shall be two hydraulic locking latches.

The cab shall tilt 45 degrees by means of a pair of hydraulic cylinders driven by the electric pump. The tilt system geometry shall be designed in such a way that the maximum hydraulic pressure in the system does not exceed one-half the pressure rating of the cylinders or pump when the cab is empty. This allows the Fire Department to leave some equipment in the cab when maintenance is required (although this equipment must be secured).

Once the cab is fully tilted, a safety latch shall automatically engage and act as a positive lock. The lock is released by a pull cable. The hydraulic cylinders shall be equipped with velocity fuses to prevent the cab from falling, should the hydraulic system fail.

The front of the cab pivots and rides on the center bonded bushings by means of lubricated pivot pins that retain the cab yoke in the bushings. The bushings allow limited movement of the cab, and isolate the cab from noise and vibration.

The rear mounts consist of a pair of hydraulic cab latches mounted on rubber cushioned mounting brackets. Latches release when the pressure in the tilt system exceeds 500 PSI.

An ignition interlock system shall be installed for cab tilt operation. Cab tilt operation requires the master battery switch to be in the on position with the parking brake applied.

CAB TILT PUMP

An electric over hydraulic cab lifting pump shall be provided to tilt the cab for engine and transmission service. The pump shall be operated by a remotely wired control box with coiled cord, weather resistant plug, and receptacle. An interlock shall be provided preventing the cab from inadvertently rising until the transmission is placed in the neutral position and the parking brake is set.

CIRCULATION FANS, FRONT

Two (2) 6" circulation fans shall be mounted on the front overhead console, one (1) driver and one (1) officer side of the apparatus.

HEATING/AIR CONDITIONING SYSTEM

The climate control system shall use three (3) heater-air conditioner units.

The front circuits shall use two (2) heater-air conditioning units, mounted under the dash on the driver's side and under the officer's side. These units are each rated at 14,700 BTU heating and 19,200 BTU cooling. The units shall blow up toward the windshield through adjustable vents in the dash. Additionally, there shall be two (2) adjustable vents each side to direct air at the lower portion of the driver and officer seating areas. Two switches, including low/med/high and heat/off/ac, shall control the front system.

A blend air switch shall be installed to operate both the front heating and cooling systems. This provides hot and dry air for defogging purposes.

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The two front systems shall combine to put out a total of 688 CFM air flow.

The rear circuit shall use one large heater-air conditioner unit with a rating of 34,150 BTU cooling and 36,000 BTU heating. It shall be mounted under the forward facing rear seats. Ducting shall run up the rear wall to adjustable vents (minimum of six) running along the center of the ceiling toward the front of the cab. Two (2) switches including high/med/low and heat/off/AC shall control the unit. In addition to the rear control switches, there shall be an ON/OFF switch located near the driver to disable the rear unit if needed.

The rear system shall put out a total of 640 CFM air flow.

The total system shall have a capacity of 72,550 BTU cooling, 65,400 BTU heating and a total in-cab air flow of 1,328 CFM.

The entire roof and back wall shall be heavily insulated with 1" foam to enhance the cooling system.

Both heaters shall be plumbed with a shut off valve at the engine.

The air conditioning system shall be powered through two (2) engine driven 9-1/2 cubic inch compressors.

Two (2) roof top condensers, each rated at 38,700 BTU, shall be provided.

The two (2) roof top condenser housings shall be black in color.

SEAT MATERIAL

The seats shall be covered with Valor XD Cordura 1000 material.

SEAT COLOR

The cab seats shall be gray in color.

SEAT BELTS, ABTS w/DUAL RETRACTORS

The seats shall be equipped with a red integrated 3-point shoulder harness with lap belt, and a dual retractor belt configuration with ready reach built into the seat assembly.

BRACKETS, SCBA SEATS

There shall be one (1) IMMI Smartdock SCBA Locking System provided with each SCBA seat. The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. A patented spring loaded release mechanism within the docking system allows the occupant to disengage the SCBA from the seat by simply standing with SCBA on their back. NFPA 1901, 2016 compliant and third party tested to exceed NFPA 9G standard. Smartdock fits most SCBAs with only minor adjustments.

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NO FILLER PANELS REQUIRED

No SCBA seat filler panels shall be provided with the apparatus.

DRIVER'S SEAT

The driver's seat shall be a USSC Valor air suspension, race back bucket seat. The seat shall have a contoured and padded seat cushion with adjustable lumbar support. The seat shall have a 150 mm horizontal slide adjustment, and 63 mm vertical height adjustment with back recline. The seat air suspension shall be pneumatically controlled from a switch on the forward lower edge of the seat.

OFFICER'S SEAT

The officer's seat will be a USSC Valor fixed base NON-SCBA seat. The seat will have a contoured and padded 20" seat cushion.

CREW SEAT, DRIVER'S SIDE REAR FACING

The outboard rear facing seat installed behind the driver shall be a USSC Valor fixed base SCBA seat. The seat will have a contoured and padded 20" seat cushion. The seat shall include a SCBA storage area with integral headrest. The seat shall be equipped with magnetic SCBA strap holders which secure the SCBA straps.

CREW SEAT, OFFICER'S SIDE REAR FACING

The outboard rear facing seat installed behind the officer shall be a USSC Valor fixed base SCBA seat. The seat will have a contoured and padded 20" seat cushion. The seat shall include a SCBA storage area with integral headrest. The seat shall be equipped with magnetic SCBA strap holders which secure the SCBA straps.

COMPARTMENT, CREW CAB INTERIOR STORAGE

There shall be a storage compartment situated in the crew cab area. It shall run from the rear of the engine cover to the rear wall. The width shall be no wider than the engine cover. The lower portion of this compartment shall be on a slide out (with a lockable door). The upper portion shall have three (3) shelves (with two (2) dividers for each shelf) and pegboard for storage of various pieces of equipment. There shall be three (3) seat belt style straps to retain loose equipment and two (2) pieces of unistrut for each shelf. Height shall be determined depending on cab layout, and further details shall be discussed at the pre-construction meeting. It shall provide storage for various pieces of firefighting gear, including, but not limited to: helmets, halligan tools, flashlights, and gloves. The construction of this compartment shall be designed to keep these items from shifting during transit.

Match West Chicago (H-5815) except with Cargo Webbing, no roll up door.

A 12 Volt Outlet and 120 Volt Outlet shall be installed in this cabinet.

LIGHTED CUSTOM FRONT GRILLE

The front grille shall be a cast aluminum assembly with 430 square inches of open area. The grille shall be backed with an aluminum honeycomb mesh to protect the radiator. The front grille shall be personalized that reads ENGINE 3 with backlit red LED lights activated by the battery on/off switch.

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INTAKE GRILLE, RIGHT SIDE W/EMBER SEPARATOR

A right stainless steel grille shall be installed approximately 70" above ground level on the right side of the cab between the front and rear cab doors. The grille shall have a minimum open area of not less than 119 square inches serving as an air intake and warm air dispersant system.

An Ember Separator shall be installed between the stainless steel grill and the air filter system allowing fresh air to pass through to the engine while preventing particles of .039 inches (1.0 mm) or larger from entering the system in accordance with the latest version of NFPA easily accessible through the exterior stainless steel grille.

The grille shall be notched to allow easy access without removing the cab handrail.

HEATED/REMOTE CAB MIRRORS

Two (2) Lang-Merka 300 series AERO side-mounted rear view mirrors shall be installed with a 14-1/2 x 7" mirror head and a separate 6" x 8" parabolic mirror. The mirror head shall be heated and remotely adjustable by the driver. The mirrors shall be aerodynamically designed to reduce wind buffeting and resultant vibration.

The mirrors support tubes shall be 7/8" stainless steel, with breakaway mounting brackets.

Match H-6042.

The cab mirror rear housings shall be black in color.

EXTERIOR TRIM, REAR CAB STEP WELL

The rear cab door stepping surfaces shall be trimmed with aluminum tread plate. There shall be tread plate covers that provide access to the chassis battery system.

CAB CORROSION PROTECTION AND SOUND DEADENING

The apparatus cab shall be completely covered in one of two types of paint, prior to installation of any interior or exterior components, including insulation and floor mats. This process shall be required to guard against corrosion as well as to keep the cab as quiet as possible for firefighters.

The entire underside and double wall area at the front of the cab shall be cleaned, primed and sprayed with black F-Shield as a finish coat. This shall include any areas that are not normally visible after the cab is complete.

The entire cab interior shall be sprayed with F-Shield, as described later in these specifications. F-Shield shall be sprayed over the ceiling, floor, side walls, forward fire wall, rear wall, dash, engine tunnel, interior cab doors and both sides of the cab door panels.

The cab exterior shall be completely finish painted as described later in these specifications. This shall include the areas under any optional rear wall or cab roof diamond plate overlays.

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The Fire Department shall, through the Virtual Manufacturing feature described earlier in these specifications, have the ability to see these areas covered with F-Shield prior to installation of items such as engine tunnel insulation, cab interior insulation and headliners, engine tunnel covering, floor mats, cab inner door panels, etc.

As a result of these cab corrosion protection measures, a ten-(10) year warranty against cab corrosion shall be provided to the Fire Department.

INTERIOR CAB FINISH

The interior of the cab shall be painted with a dark gray "F-Shield". The cab metal finish shall be covered with a coat of adhesion promoting primer.

The headliner (front and rear) and rear wall (if applicable) shall be covered with heavy-duty gray vinyl.

FLOOR MATS/ENGINE TUNNEL COVERING

The floor mats and engine tunnel shall be covered with gray pebble grain vinyl with 1/4" (.250") foam backing. The edges of the floor mats shall be trimmed with a cast aluminum foot plate for a pleasing appearance.

CAB GRAB HANDLES, INTERIOR

Two (2) interior grab handles installed in the cab on the "A" posts, one (1) each side. The grab handles shall be constructed of rubberized steel.

Four (4) interior grab handles installed in the cab, one (1) each side on top of the front door panels adjacent to fixed window and one (1) each side on the rear door panels. The grab handles shall be constructed of 1-1/4" knurled stainless steel. The grab rails shall be mounted with chrome plated end stanchions.

There shall be one-(1) interior grab handle installed on the inside of each rear cab door. The handles shall extend horizontally with width of the window just above the window sill. The grab handles shall be constructed of bright stainless steel.

The horizontal grab rail on the rear interior doors shall be F-Shield Black.

GLOVE BOX

The glove box shall be an integral part of the welded aluminum dashboard assembly and located on the officer side of the cab. The storage area of the glove box shall bolt in place for easy service access. The door shall be drop down style and constructed from brushed stainless steel with a recessed latch. The area above the glove box shall be flat for a work surface or optional MDT mounting.

SUN VISORS

The cab shall be equipped with three (3) sun visors. The visors shall be installed on the overhead panel and provide approximately 90 percent coverage across the width of the cab. The visors shall be approximately 26" wide and 6" tall.

A retaining mechanism shall be provided to prevent the Sun Visors from dropping down.

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REFLECTIVE STOP SIGNS

There shall be four (4) "STOP" signs installed in the cab, one-(1) on the lower door panel of each cab door.

EQUIPMENT MOUNTING PLATE, ENGINE TUNNEL

There shall be one (1) equipment mounting plate installed on the engine tunnel with 45-degree bends on the driver and officer sides constructed of 3/16" smooth aluminum plate covered with "F-Shield".

INSTRUMENTATION

For easy viewing, gauges shall be white faced with black lettering and adjustable intensity LED backlighting. The gauges shall meet SAE J-1939 protocol to eliminate redundant sending units. The gauge crystal shall be flat glass with rubber o-ring seal. The panels shall be divided into groups of instruments that make identification sensible and easy to view.

The following instruments shall be included in the gauge panel in front of the driver:

Left Side-

An all in one gauge that contains; dial type tachometer, dial type engine oil pressure with warning light and alarm and dial type engine coolant temperature with warning light.

Center-

- Driver information display panel with alarm output for gauge warning lights
- Dial type transmission temperature gauge with warning light
- Panel light dimmer control knob
- Dial diesel fuel/DEF level gauge with low level indicators

Right Side-

An all in one gauge that contains; dial type speedometer, dial type primary air pressure gauge with warning light and dial type secondary air pressure gauge with warning light.

The following indicator lights shall be provided in the gauge panel:

- Air cleaner restriction light
- High beam indicator
- Parking brake indicator
- Turn signal indicators
- Low primary air
- Low secondary air
- Battery voltage error
- Door ajar
- Auto chassis lubrication system (if equipped)
- Emergency engine shutdown (if equipped)
- Diagnostic indicators for airbag (if equipped), engine, transmission, and ABS

The lower dash to the left of the steering column shall contain the ignition, start and headlight switches. When a multiplexed electrical system is used with a display screen the headlight switch will be located in this screen.

The lower dash to the right of the steering column shall contain the regeneration and traction control switches.

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The electronic diagnostic connections for the engine, transmission, and ABS brakes shall be located in the lower left firewall.

SERVICE ACCESS

The driver's instrumentation area shall be made of textured black non-glare panels affixed to the aluminum dash. There shall be a single gauge panel, secured with a bottom hinge and four (4) quarter-turn fasteners. Access to the gauge clusters shall be accomplished simply by releasing the latches and pulling the panel outward. Other gauge access designs are not acceptable.

The chassis electrical panel shall be located in the center of the aluminum dash, between the switch panel and the windshield. There shall be a lift up cover, with two (2) recessed lift-and-turn latches for quick access to the panel. The apparatus load manager shall be located in this panel. The opening to the electrical shall measure approximately 15" wide near the switch panel and 37" wide toward the windshield.

DRIVER'S INFORMATION DISPLAY

There shall be a 10.8" x 2.44" display panel on the driver's gauge cluster that will illuminate various caution and warning indicator lamps. This display also contains a 340 x 90 monochrome LCD for display of specific and user selectable data. The display unit reads data from the J1939-11 powertrain communications network. Display will be capable of but not limited to the following features:

- Auto Self-Test
- Viewing the state of each digital or analog input to the unit
- Viewing the state of each output
- Allows users ability to set service reminders by distance or hours of operation
- Allows users ability to set data screens in various formats i.e. bar graph / text
- Viewable active and stored powertrain ECU fault data
- Diagnostics screen allows user to select and view a specific source such as engine / transmission
- Display is selectable between English and metric readings
- Messages and Icons will pop up in display when a condition exists such as: transmission oil life, filter or other service needed as reported by the Allison Transmission ECU engine conditions: low oil pressure, high coolant temperature, low coolant level, water in fuel, check / stop engine, regeneration needed, high exhaust temperature

Indicator lights may also accompany pop up messages:

Door ajar indicator will also pop up a "Do Not Move Vehicle, Check all doors and Items that Raise or extend beyond apparatus cab or body" message

CHASSIS ELECTRICAL SYSTEM

The chassis shall include a single starting electrical system which shall include a 12 volt direct current system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311 degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 257 degree Fahrenheit minimum high temperature flame retardant loom.

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CHASSIS COLOR CODED WIRING

All chassis wiring shall be type "GXL" in accordance with S.A.E. J1128 and NFPA-1901. ALL wiring shall be **COLOR CODED** and continuously marked with the circuit number and function.

A battery "loop back" ground circuit shall be supplied for the EDS system to reduce the possible effects of Electromagnetic and Radio Frequency Interference.

The chassis cab, engine and transmission shall be electrically bonded to the chassis frame rails with braided ground straps.

MAIN CENTER DASH

The main center dash area shall include three (3) removable panels located one (1) to the right of the driver position, one (1) in the center of the dash and one (1) to the left of the officer position. The center panel shall be within comfortable reach of both the driver and officer. The panel shall be constructed of 5052-H32 Marine Grade, 1/8 inch thick aluminum plate.

SWITCH PANEL, DRIVER'S SIDE

The driver's side panel shall be constructed of 5052-H32 Marine Grade, 1/8 inch thick aluminum plate. The dash panel shall include the following:

The left side of the panel shall have nine (9) switch positions, five (5) upper and four (4) lower. The upper positions shall be ENGINE BRAKE control (lighted rocker switch), ENG BRK LEVEL control (non-lighted rocker switch), DEFOG control (lighted rocker switch), HEAT/OFF/AC control (non-lighted rocker switch) and BLOWER SPEEDS control (non-lighted rocker switch). The lower positions shall be SPARE (lighted rocker switch), SPARE (non-lighted rocker switch), MIRROR HEAT control (lighted rocker switch) and MIRROR CONTROL (joystick type).

The center of the panel shall house the pump shift control.

The right side of the panel shall house the transmission shifter, OK TO PUMP green light and PUMP ENGAGED green light.

SWITCH PANEL, CENTER

The center panel shall be constructed of 5052-H32 Marine Grade, 1/8 inch thick aluminum plate. The dash panel shall include the following:

The left side of the panel shall have ten (10) switch positions, five (5) upper and five (5) lower. The upper positions shall be EMERGENCY MASTER control (lighted rocker switch), LIGHTBAR control (lighted rocker switch), FRONT WARNING control (lighted rocker switch), SIDE WARNING control (lighted rocker switch) and REAR WARNING control (lighted rocker switch). The lower positions shall have five (5) BLANK panels.

The center of the panel shall house the electric siren control head in the upper portion and parking brake control in the lower portion.

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The right side of the panel shall have ten (10) switch positions, five (5) upper and five (5) lower. The upper positions shall be COMPARTMENT LIGHT control (lighted rocker switch), WORK LIGHT control (lighted rocker switch), SPARE (lighted rocker switch), SPARE (lighted rocker switch) and SPARE (lighted rocker switch). The lower positions shall have five (5) BLANK panels.

The Emergency Master Switch shall be Red.

SWITCH PANEL, OFFICER'S SIDE

The officer's side panel shall be constructed of 5052-H32 Marine Grade, 1/8 inch thick aluminum plate. The dash panel shall include the following:

The panel shall be blank, unless items are added later in the specification.

VEHICLE DATA RECORDER

The apparatus shall be equipped with a Class1 "Vehicle Data Recorder and Seat Belt Warning System" (VDR/SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and antilock brake (ABS) modules mounted on the apparatus. The VDR/SBW will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train's J1939 data and 14.1.3.10 (Seat Belt Warning) using the Class1 "Seat Belt Input Module" for seat occupied and belt status information.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class 1/ O.E.M. supplied reporting software.

There shall be a seat belt indicator system supplied in the cab. The indicator system shall indicate seat belt use for each individual seating position when the seat is occupied, the seat belt remains unfastened and the parking brake is released.

A display panel shall be supplied in the dash area. The panel shall have an audible indicator and a red light display to indicate that a seat belt has not been fastened.

SEAT BELT WARNING SYSTEM

Mounted in the overhead console in the driver's area the indicator system shall indicate seat belt use for each individual seating position when the seat is occupied, the seat belt remains unfastened and the parking brake is released.

The audible alarm for the Seat Belt Warning System shall have a distinct sound difference from the Door Ajar Warning System.

STEERING COLUMN

The steering column shall be a Douglas Autotec tilt and telescope. A lever mounted on the side of the column shall control the tilt and telescope features. A Signal-Stat (self-canceling) turn signal switch shall be mounted to the column. The steering shaft from the column to the meter box shall have a rubber boot to cover the shaft slip and a second rubber boot to seal the passage hole in the floor.

The steering wheel shall be 18 inches in diameter.

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The Signal-Stat turn signal switch shall include the following functions:

- Left and right turn signals
- High beam dimmer control
- Hazard warning switch
- Two speed with intermittent windshield wiper control
- Windshield washer control

SWITCH, MANUAL FAST IDLE

There shall be a manual fast idle switch located in the cab. When activated, the switch shall increase the engine idle speed to approximately 1200 RPM to allow the alternator to supply additional charging of the apparatus battery system. The fast idle switch shall only operate if all interlocks are met. Apparatus transmission must be in neutral with the parking brake set and the fire pump (if equipped) must not be engaged.

12-VOLT FUSE BLOCK

There shall be one (1) Blue Sea fuse block 5025 installed in a location determined by the Purchaser. The unit shall include six (6) 12 volt constant power supply ports and grounding buss with easily changeable fuses. The unit shall have a 100 amp total operating range.

CHARGING PORTS, 12-VOLT DUAL USB

There shall be two (2) Kussmaul model 019-219-4, 12-volt USB dual charging ports provided in the cab. The charging ports shall be equipped with two (2) 2.1 amp connections with built in LED indicator that indicates when the device(s) are powered.

The charging ports shall be wired to direct battery power with the appropriate wire size and fuse.

The charging ports shall be located in the emergency switch panel or another location to be determined by the Fire Department.

CUSTOM CONSOLE

A custom console shall be fabricated and installed on the engine tunnel. The layout of the console shall be determined by the Fire Department. The console shall be constructed of smooth aluminum painted with F-Shield to match the interior of the cab.

RADIO

A Jensen radio with weather band, AM/FM stereo receiver, compact disc (CD) player, and rear iPod input pigtail connector, satellite radio capability, a front panel mini stereo input jack, and four (4) speakers shall be installed in the cab. The CD player shall be compatible with CD-R, CD-RW and MP3 format discs. The radio shall be installed in the left hand overhead position. The speakers shall be installed inside the cab with two (2) speakers recessed within the headliner of the front of the cab just behind the windshield and two (2) speakers on the upper rear wall of the cab.

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A small antenna shall be located on the left hand side of the cab roof for AM/FM and weather band reception.

Location: Same as H-6042.

RADIO INSTALLATION

One (1) radio supplied by the Fire Department shall be installed in the cab by the apparatus body builder. The siren must be new in the manufacturer's supplied package.

The items must be sent to the manufacturer in advance, and marked with name and shop order number for identification.

RADIO ANTENNA MOUNT

There shall be one (1) standard antenna-mounting base, model MNO, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The mount shall be located on the cab roof, just to the rear of the light bar. The cable(s) shall be routed under the officer's seat.

RADIO POWER CIRCUIT

A 50 amp switched battery power circuit with manual reset shall be installed centered in the dash to activate the radio.

POWER AND GROUND STUDS

The electrical distribution panel shall include two (2) power studs. The studs shall be size #10 and each of the power studs shall be circuit protected with a fuse of the specified amperage. One (1) power stud shall be capable of carrying up to a 40 amp battery direct load and one (1) power stud shall be capable of carrying up to a 20 amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud.

12-VOLT POWER OUTLET(S)

There shall be two (2) 12-volt cigar lighter style power outlets provided in the cab.

Location: Crew Cab Interior Compartment.

The power outlet(s) shall be wired to direct battery power with the appropriate wire size and fuse.

ELECTRONIC SIREN

One (1) Federal Signal PA300 Series Model 690010 electronic siren shall be provided. The siren shall be 200W/12V, shall measure 2.3" high x 6.1" long x 7.6" deep and shall meet SAE and Class A requirements. The PA300 siren shall provide wail, yelp, and hi-lo siren tones, as well as the Tap II feature, public address (PA), radio rebroadcast and air horn sound.

The siren shall be protected against failure modes (including reversed polarity) by a replaceable fuse. The PA300 siren shall be provided with a noise-canceling microphone which shall be wired-in to prevent loss or theft. The microphone shall provide high quality voice reproduction without feedback "squeal". The microphone push-to-talk switch shall

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override any siren signal for instant PA use. The PA and radio volume shall be adjustable by means of a front panel GAIN control feature.

HORN, ELECTRIC

A single electric horn activated by the steering wheel horn button shall be provided.

BACK-UP ALARM

There shall be one (1) Whelen model WBUA107, 107 dB, electronic back-up alarm installed at the rear of the apparatus. The alarm shall be wired to the transmissions output signal and is automatically activated when the transmission is shifted into reverse.

LIGHTS, CAB DOME

Four (4) Whelen 6" Round Super-LED model 60CREGCS shall be provided in the cab's headliner. The steady burn 12v interior light shall incorporate six (6) red and six (6) clear Super-LEDs and a clear non-optic translucent hard coated polycarbonate lens for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and foam in place gasket shall provide additional protection against environmental elements. The 60CREGCS includes Hi/Low intensity mode standards and On/Off dual switch function. The solid state interior light shall be vibration resistant. The interior light is covered by a five year factory warranty.

The Red LED lights shall be activated when any cab door is in the open position automatically switching off all white lights currently on and reactivated when the door is closed.

LIGHTS, DOOR COURTESY

One (1) Whelen TIR6 LED courtesy light shall be mounted on the lower portion of each door panel. The lights shall activate when the door is opened.

LIGHT, DOOR AJAR

A Whelen model TIR3 door ajar light shall be located on the cab's ceiling. This light shall be a self-contained flashing light that activates when any of the apparatus doors are open. The lens color shall be red.

An audible alarm shall be installed in conjunction with the door-ajar warning light system. The panel only operates when the ignition switch is in the "On" position and the parking brake released.

A silence switch shall be provided for door ajar light.

MULTIPLE DOOR AND SAFETY WARNING INDICATOR PANEL

There shall be a door ajar and safety warning light system with indicator panel located in the cab. The panel is mounted to the ceiling between the driver and the officer. The indicator panel has multiple LED lights that activate under one or all of the following conditions:

- Cab door is open

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- Compartment door is open

An audible alarm shall be installed in conjunction with the door-ajar warning light system. The panel only operates when the ignition switch is in the "On" position and the parking brake released.

LIGHTS, STEP WELL

Six (6) TecNiq D04 Linear Dragon LED lights shall be provided, two (2) in each front cab step well and one (1) in each rear cab step well. Each light shall activate when the cab door is opened.

LIGHTS, ENGINE MAINTENANCE

Two (2) white 4" LED round lights shall be mounted under the cab. The lights shall automatically activate when the cab is tilted.

FRONT LIGHTING

The headlamps, turn signals, front warning and intersection lights shall be located within chrome warning light modules, one (1) each side front of the apparatus.

HEADLIGHTS

Four (4) JW Speaker LED rectangular headlights shall be installed in the warning light modules, two (2) each side. The headlights shall be mounted in the upper positions of the module.

Condensation is a naturally occurring condition that can affect any light. It does not suggest a defect in a product, as opposed to what happens when a leak occurs, in which case there is water ingress that could lead to a system failure.

Condensation is the change of water from a gaseous form (vapor) into liquid water. It appears as small droplets of moisture inside the light. Condensation does not cause a problem with normal operation of the light and is, therefore, NOT considered to be a defect or warrantable condition.

J.W. Speaker lamps are designed to allow moisture to escape and not reenter, but it takes time for the moisture to evaporate (the amount of time will depend upon whether or not the light is turned on).

ALTERNATING FLASHING HEADLIGHTS

A solid state-alternating flasher shall be installed on the high beam side of the headlamps. A rocker switch located in the cab shall control the module. If high beam lights are required, activating the headlight dimmer switch shall automatically over-ride the flasher when the headlight switch is in the "On" position.

TURN SIGNALS, FRONT

Two (2) Whelen 600 series 5mm LED model 60A00TAR turn signal lamps shall be installed, one (1) each side directly below the low beam headlights in the warning light modules. The turn arrow light shall incorporate 92 amber 5mm-LED and a clear non-optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated 5 mm-LED populated arrow shaped PC board and foam in place

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gasket shall provide additional protection against environmental elements. The solid state turn arrow light shall be vibration resistant. The light shall have 6 Scan-Lock™ flash patterns including steady burn default. The turn arrow light is FMVSS108 certified. An installation kit including mounting hardware and rubber gasket shall be provided for surface mounting. The 60A00TAR will contain a 12" non-terminated pigtail. The turn arrow light is covered by a five year factory warranty.

LIGHTS, TURN SIGNAL/MARKER

Two (2) Whelen 400 series model 40A00AAR amber LED lights shall be mounted, one (1) each side outboard of the turn signal at a 45-degree angle off the front of the cab. The lights shall be part of the warning light module and are visible from both the front and sides of the apparatus.

LIGHTS, LED CORNING

Two (2) Whelen 400 series model 40R02Z*R flashing LED cornering lights shall be mounted, one (1) each side below the marker lights in the warning light module. The lights shall be mounted at a 45-degree angle off the front of the cab and are visible from the sides and front of the apparatus. The warning light shall incorporate four red Super-LED, an optic hard coated polycarbonate lens, and utilize a metalized reflector with integrated TIR hybrid optics for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and with the lens fitted with foam in place gasket assembly shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 25 Scan-Lock™ flash patterns including synchronize feature and steady burn. An installation kit including mounting hardware and rubber gasket shall be provided for surface mounting. The 40R02Z*R will contain a 12" non-terminated pigtail. The warning light is covered by a five year factory warranty.

LIGHTS, FRONT DOT

There shall be five (5) Whelen OS series LED marker lights installed on the cab's roof located as high as practical and spaced per DOT guidelines.

LIGHTS, ZONE A LOWER

Two (2) Whelen M6 Series Super-LED model M6*C lights shall be installed, one (1) each side front of the apparatus. The warning light shall incorporate Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M6FC chrome flange and hardware for horizontal mounting.

The left front light shall be red with a clear lens, the right front light shall be green with a clear lens.

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LIGHTS, CAB GROUND

There shall be one (1) Whelen 2G Series model 20C0CDCD 4" LED light mounted under each cab door illuminating the area below providing a safe entrance and exit for cab occupants. All cab ground lights shall automatically activate when any cab door is opened and by a switch located on the dash.

The 12v steady burn light(s) shall incorporate 12 clear LED and a clear optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated coated PC board and lens fitted with foam in place gasket assembly shall provide additional protection against environmental elements. The solid state light shall be vibration resistant. The 20C0CDCD will contain 350 usable lumens. An installation kit including mounting hardware and rubber gasket shall be provided. The 20C0CDCD will contain a 12" terminated pigtail with a waterproof Deutsch® connector. The light is covered by a five year factory warranty.

HEADSET INTERCOM SYSTEM

A Sigtronics Intercom system shall be installed to provide noise suppression while providing clear voice communications for four (4) seated positions in the cab. There shall be an optional connection for the installation of a pump panel station.

Communications are provided by four (4) SE-8 under the helmet headsets. This system includes:

- One (1) Power Cord
- Six (6) Headset Jacks
- Four (4) Headset Hooks
- Two (2) Push-to-Talk Switches

The driver and officer headsets include the intercom and two-way radio communication functions, while the crew headsets are capable of intercom communications and radio communications listening.

MASTER INTERCOM STATION

One (1) Sigtronics master station shall be provided and installed in the cab. The system shall have the capability of installing up to eight-(8) positions (Plus exterior positions). This unit shall have mobile radio compatibility. This system contains voice activated on/off system, master volume control, two headset jacks with listen level controls, power input connector, and two remote output connectors.

MOBILE RADIO INTERFACE CORDS

The intercom system shall be provided with interface cables between the Departments radio and the SIGTRONICS system for the specified location.

Purchaser must specify make and model radio.

Interior Headset Jacks

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DRIVER'S HEADSET STATION

There shall be a model SE-8 headset provided for the driver position. The headset shall provide a single plug under helmet radio transmit headset. It shall have a (PTT) "Push to Talk" located on the dome. The headset shall come with an adjustable volume, noise canceling electric microphone, adjustable head strap, and flexible style boom for rotation of right or left dress. High clarity speakers shall be provided with fully shielded cabling to maximize performance. The headset shall have high impact ear cups and provide noise reduction.

The headset shall have a one-(1) year warranty.

OFFICER'S HEADSET STATION

There shall be a model SE-8 headset provided for the officer position. The headset shall provide a single plug under helmet radio transmit headset. It shall have a (PTT) "Push to Talk" located on the dome. The headset shall come with an adjustable volume, noise canceling electric microphone, adjustable head strap, and flexible style boom for rotation of right or left dress. High clarity speakers shall be provided with fully shielded cabling to maximize performance. The headset shall have high impact ear cups and provide noise reduction.

The headset shall have a one-(1) year warranty.

CREW POSITION HEADSET STATIONS

There shall be two (2) model SE-8 headsets provided for the seated crew positions. The headsets shall provide a single plug under helmet radio transmit. It shall have a (PTT) "Push to Talk" located on the dome. The headsets shall come with an adjustable volume, noise canceling electric microphone, adjustable head strap, and flexible style boom for rotation of right or left dress. High clarity speakers shall be provided with fully shielded cabling to maximize performance. The headset shall have high impact ear cups and provide noise reduction.

The headsets shall have a one-(1) year warranty.

HEADSET HOOKS

There shall be four (4) headset hooks installed one for each station.

PUMP PANEL BELT STATION

There shall be a pump panel, model 900107 for a single plug located at the pump panel. The adapter contains PTT switch and listen level control.

This system includes:

- Standard headset jack with belt clip
- 30' jumper cord
- 5 prong jack with weather cover

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BACK UP CAMERA SYSTEM

One (1) Federal Signal model CAMSET-70 color camera system shall be installed on the apparatus. The system shall be wired to the apparatus' 12 volt electrical system. The 7" LCD color monitor shall be installed in cab in easy reach of the driver while in the seated position. The color camera shall be installed facing rearward giving a clear and unobstructed view behind the apparatus. The system shall activate when the transmission is shifted in the reverse position. A switch located on the monitor shall activate the system regardless of the transmission's shifted position.

This system shall consist of the following components:

- One 7" CAMLCD color monitor installed in the cab
- One color camera model CAMCCD-REARNTSC with night vision and audio installed high at the rear of the apparatus
- 65.5 feet of camera-to-monitor extension cable (CAMCABLE-20)
- Multiple camera control box (CAMBOX-4NTSC/CAMBOX-PAL)
- Mounting bracket and hardware (CAMLCD-BRACKET)

CAB PAINT FINISH, TWO TONE

The apparatus cab shall be painted with AkzoNobel Sikkens brand paint. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces. Cab doors and any hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on cab, door jambs and door edges.

Paint process shall feature AkzoNobel Sikkens high solid BTLV products and be performed in the following steps:
Corrosion Protection - all aluminum surfaces shall be treated with the AkzoNobel Sikkens LV 260 Epoxy coating to provide superior corrosion resistance and excellent adhesion of the base coat.

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

AkzoNobel Sikkens High Solid BTLV650 (Base coat) - a lead-free, chromate-free high solid polyurethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.

AkzoNobel Sikkens High Solid BTLV650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

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

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After the paint process is complete, the gloss rating of the unit shall be tested with a 60 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

UPPER CAB PAINT FINISH

The upper cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments.

The apparatus cab shall be painted with AkzoNobel Sikkens brand paint. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

UPPER CAB PAINT COLOR/CODE

The upper cab paint code shall be jet black FLNA 40421.

Match H-6042

PRIMARY/LOWER CAB PAINT FINISH

The primary/lower cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments.

The apparatus cab shall be painted with AkzoNobel Sikkens brand paint. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

PRIMARY/LOWER CAB PAINT COLOR/CODE

The primary/lower cab paint code shall be red FLNA 31979.

Match H-6042

CAB PAINT BREAK LINE STRIPE

A 1/2" wide Spun Gold paint pin stripe with black shade shall be added to the cab, two tone paint scheme. This stripe shall be applied at the break line.

Match H-6042

LIGHTS, UNITY SPOTLIGHTS

Two (2) Unity 335 Series LED 6" Spotlights shall be mounted in the front corners of the cab for the driver and officer. The head assembly shall be made of high impact ABS, black in color.

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SAFETY SIGNS, GENERAL REQUIREMENTS

Safety signs with text shall conform to the general principles of ANSI/NEMA Z535.4, *Product Safety Signs and Labels*. Safety signs without text shall conform to the general principles for two-panel safety signs of ISO 9244, *Earth-Moving Machinery - Machine Safety Labels*.

Apparatus built for sale in the United States shall employ safety signage that complies with ANSI/NEMA Z535.4.

Apparatus built for sale outside the United States shall employ safety signage that complies with ANSI/NEMA Z535.4 or ISO 9244.

Safety signs referenced in this standard beginning with the letters FAMA shall conform to the text and graphics of the referenced safety sign number found in FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*.

SAFETY SIGNS, BATTERY EXPLOSION

A safety signs FAMA01, shall be provided near the battery location that warns of potential injury or death that could be caused by the batteries. The label shall also state precautions that should be taken while working on or around the batteries.

SAFETY SIGNS, ROTATING SHAFTS

Safety signs FAMA02, shall be provided on each side of the frame rail and in any other location(s) where rotating shaft hazards are apparent. The label shall warn of potential injury or death that could be caused by the movement of the shaft(s) as well as precautions that should be taken while working on or around them.

SAFETY SIGNS, HOT SURFACES

Safety sign(s) FAMA03, shall be provided near any hot surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

SAFETY SIGNS, HOT EXHAUST

A safety sign FAMA04, shall be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

SAFETY SIGN, SPINNING FAN

A safety sign FAMA05, shall be provided on both sides of the engine fan. The label shall warn of potential injury or death that could be caused by the movement of the fan as well as precautions that should be taken while working on or around them.

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SAFETY SIGNS, SEATED & BELTED

Safety signs FAMA07, which warns of the importance of seat belt use, shall be visible from each seat that is intended to be occupied while the apparatus is in motion.

SAFETY SIGN, AIR CONDITIONING REFRIGERANT

If the apparatus is equipped with any type of air conditioning system, a safety sign FAMA09, shall be provided that is located in an area that would be visible to service personnel. The label shall state that the system contains R134A, the necessary precautions that should be taken and the dangers of working on or around the system.

SAFETY SIGN, CAB EQUIPMENT MOUNTING

A safety sign FAMA10, which warns of the need to secure items in the cab, shall be visible inside the cab.

SAFETY SIGN, FIRE SERVICE TIRE RATING

A safety sign FAMA12, which warns of the special requirements for fire service-rated tires, shall be visible to the driver entering the cab of any apparatus so equipped.

SAFETY SIGN, ELECTRONIC STABILITY CONTROL

If the apparatus is equipped with an electronic stability control system, a safety sign FAMA13, shall be provided inside of the cab in view of the driver warning of the dangers of improper operation of the apparatus and the importance of safe driving. The label shall also warn of potential injury or death that could be caused by improper operation of the apparatus.

SAFETY SIGN, CAB SEATING

A safety sign FAMA14 shall be located in the cab visible to the operator.

The sign shall read:

This apparatus has a seating capacity of 6 personnel.

Carrying additional personnel may result in death or serious injury.

SAFETY SIGNS, HELMET WORN IN CAB

A safety sign FAMA15, which warns not to wear helmets while the vehicle is in motion, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.

SAFETY SIGN, VEHICLE BACKING

A safety sign FAMA17, shall be provided inside of the cab in view of the driver advising of proper procedures to follow when the apparatus is in reverse motion. The label shall also warn of potential injury or death that could be caused by failing to follow proper procedures.

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SAFETY SIGNS, INTAKE/DISCHARGE CAP PRESSURES

If the apparatus is equipped with a pump system, safety signs FAMA18, shall be provided in all areas that intakes and discharges are capped. The label shall give instruction on how to properly remove the cap. The label shall also warn of potential dangers, injury or death that could be caused by failing to follow proper cap removal procedures.

SAFETY SIGNS, HOSE RESTRAINT REQUIRED

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at each hose storage area.

SAFETY SIGNS, CLIMBING METHOD INSTRUCTION

Safety signs FAMA23, which warns of the proper climbing method, shall be visible to personnel entering the cab and at each designated climbing location on the body.

SAFETY SIGNS, RIDING ON EXTERIOR

Safety signs FAMA24, which warns personnel not to ride on the exterior of the vehicle, shall be located at the rear step areas and at any cross walkways.

SAFETY SIGN, PUMP TRAINING

A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

SAFETY SIGNS, NO-STEP

Safety signs FAMA26, shall be provided in any horizontal location that a firefighter may feel tempted to use as a step but is not designed, constructed or intended to be a stepping, standing or walking surface. The label shall state that the surface is not intended for this purpose and indicate potential injury or death in doing so.

SAFETY SIGN, SIREN NOISE

A safety sign FAMA42, shall be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label shall also state safety precautions that should be taken when the siren is in use.

SAFETY SIGN, APPARATUS MOVEMENT

A permanently affixed movement warning plate shall be installed near the door ajar light that reads:

"DO NOT MOVE APPARATUS WHEN LIGHT IS ON".

PLATE, FLUID CAPACITY

A permanently affixed fluid data plate shall be installed in the driving compartment to indicate the type and quantities of the following fluid used in the apparatus.

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Engine Oil
 Engine Coolant
 Chassis Transmission Fluid
 Pump Transmission Lubrication Fluid (if applicable)
 Pump Primer Fluid (if applicable)
 Drive Axle Lubrication Fluid
 Air Conditioning Refrigerant
 Air Conditioning Lubrication Oil
 Power Steering Fluid
 Cab Tilt Mechanism Fluid
 Transfer Case Fluid
 Equipment Rack Fluid
 Air Compressor System Lubricant
 Generator System Lubricant
 Front Tire Pressure - Cold
 Rear Tire Pressure - Cold

The following information shall also be supplied on the Fluid Data Plate:

Chassis Manufacturer
 Production Number
 Paint Number
 Year Built
 Date Shipped
 Vehicle Identification Number

PLATE, OVERALL HEIGHT/LENGTH/WEIGHT

An Overall Height/Length/Weight information plate shall be installed that can be clearly identified and visible to the driver while in the seated position showing the apparatus completed overall height, length, (in feet and inches) and gross vehicle weight (in tons) current to the apparatus manufactured date.

If changes to the apparatus occur while in service, the Fire Department must revise the overall height-length-weight plate.

PUMP ENCLOSURE, SIDE CONTROL

The pump enclosure superstructure shall be constructed of aluminum tubing, channel, angle, and break-formed components. The framework shall be formed by beveled aluminum alloy extrusions and electrically seam welded both internally and externally at each joint using 5356 aluminum alloy welding wire. The main, frame work shall be constructed of 3.00 x 3.50, 6063-T6 aluminum extrusions. The break-formed components shall be constructed from 3/16" (1.875) aluminum.

The crossmembers support the substructure and the exterior panels independently from the cab and body. The crossmembers shall be isolated from the frame rails using torsion mounts. The pump enclosure shall be supported at the top of the frame rails, in a minimum of four (4) places. The module shall be secured with angle brackets bolted to both the pump enclosure support cross rails and the side of the chassis frame rails. This design is required to eliminate shifting and stress on the pump enclosure, pump panels, and running boards.

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The front of the pump module shall be covered with aluminum tread plate to keep road debris from the front of the pump.

The pump enclosure provides an area above the pump for the installation of crosslays or dunnage area.

Any pump enclosure constructed using any material other than aluminum or utilizing any other mounting method is not acceptable.

SEPARATE PUMP MODULE

The pump module will be a self-supported structure mounted independently from the body and chassis cab. The pump module will be constructed entirely of extrusions and aluminum plate and shall be bolted to the chassis frame rails. The framework will be formed from beveled aluminum alloy extrusions and electrically seam welded both internally and externally at each joint using 5356 aluminum alloy welding wire. The main framework shall be 3.00 x 3.50, 6063-T6 aluminum extrusion. Aluminum angle will be welded such that a recessed pump panel can be mounted inside the extrusion perimeter. The module shall be mounted to the chassis frame rails utilizing a "U" bolt spring mounting system. The pump module design must allow normal frame deflection without imposing stress on the pump module structure or side running boards.

PUMP PANELS

The operator's controls and gauges shall be mounted on pump panels constructed of 1/8" (.125) black anodized, non-glare aluminum. No vinyl coverings shall be acceptable as these surfaces are subjected to rough service and vinyl is susceptible to tearing.

The operator's master gauge panel shall be vertically hinged with push style latch for access to gauges and auxiliary controls.

The operator's control panel shall be located below the master gauge panel and constructed of 1/8" (.125) black anodized, non-glare aluminum.

All gauges and controls shall be properly identified with color-coded metal tags. The tags shall be affixed with 3M brand industrial adhesive. The gauges shall be functionally grouped above each control.

The right side upper panel shall be vertically hinged with double doors and push style latches for pump compartment access. The doors shall be constructed of .125" aluminum tread plate.

The right side lower panel shall be removable for serviceability. The panel shall be constructed of 1/8" (.125) black anodized, non-glare aluminum.

All instruments and controls shall be provided and installed as a group at the pump panel. The central midpoint or centerline of any valve control shall be no more than 72" vertically above the ground or platform that is designed to serve as the operator's standing position. The instruments shall be placed to keep the pump operator as far as practical from all discharge and intake connections and in a location where they are readily visible and operationally functional while the operator remains stationary.

A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

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FULLY HINGED PUMP PANEL, RIGHT SIDE

One (1) vertically hinged pump panel with push style latch shall be installed and constructed of the same material as stated in the pump module specifications. The hinged panel replaces the current right hand lower removable panel for ease of access to the pump compartment during routine maintenance.

PUMP COMPARTMENT ACCESS PANEL, FRONT

A removable maintenance panel shall be installed at the front of the pump compartment manufactured from 3/16" aluminum tread plate.

PUMP PANEL LIGHT, LEFT SIDE

One (1) individual OnScene Access LED pump panel light with on/off switch shall be mounted under the light shield left side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

PUMP PANEL LIGHT, RIGHT SIDE

One (1) individual OnScene Access LED pump panel light with on/off switch shall be mounted under the light shield right side. For optimum visibility during nighttime operations, the light shall be mounted as high as possible.

LIGHTS, PUMP COMPARTMENT

Two (2) LED compartment lights shall be installed in the pump compartment for inspection or routine maintenance. The light shall be wired to the pump panel light switch.

RUNNING BOARD, LEFT SIDE

A running board shall be provided on the left side of pump module constructed of "Embossed" 3/16" (.1875) aluminum tread plate flanged down 2-1/2" and in 1.00" for maximum rigidity then bolted to the modules substructure to facilitate removal.

The running board stepping surface shall comply with the latest version of NFPA 1901.

RUNNING BOARD, RIGHT SIDE

A running board shall be provided on the right side of pump module constructed of "Embossed" 3/16" (.1875) aluminum tread plate flanged down 2-1/2" and in 1.00" for maximum rigidity then bolted to the modules substructure to facilitate removal.

The running board stepping surface shall comply with the latest version of NFPA 1901.

A Pump Can Storage Well shall be built in the running board. See H-5815 West Chicago.

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HANDRAILS, ABOVE THE PUMP PANEL

One (1) pair of 12" handrails shall be installed above the pump panels, one (1) each side. The handrails shall be constructed from 1-1/4" knurled aluminum. The handrails shall be mounted with chrome plated end stanchions.

The handrails shall meet or exceed NFPA 1901 requirements.

Handrail Stanchions shall be coated with Black F-Shield.

MICROPHONE COMPARTMENT, PUMP PANEL

There shall be a formed aluminum microphone compartment installed on the pump panel, with a fully gasketed-hinged door and latching mechanism protecting the microphone.

AIR HORN SWITCH, PUMP PANEL

A push button momentary switch mounted on the pump panel shall activate the chassis air horn(s).

Button shall be Red.

PRESSURE GAUGES, 2-1/2"

The discharges shall be provided with 2-1/2" pressure gauges. The discharge gauges shall be liquid filled with a solution to assure visual readings and reduce inner lens condensation. The body of the gauges shall be constructed of Zytel nylon with chrome-plated bezels. The face of the gauges shall be Spun Metal with black background and white markings reading from zero to 400 PSI.

The gauges shall be installed at each discharge control on the pump operator's panel. On side mount pump applications with push pull handles each gauge shall incorporate a Thuemling Instrument Group 1-piece module assembly consisting of the gauge, push-pull and trim bezel.

The pressure gauges shall maintain performance of all features and be free from defects in material and workmanship which includes fluid fill leakage and discoloration for seven years.

GAUGE BEZELS, COLOR CODED

The pump panel master and pressure gauge bezels shall be color coded.

PUMP PANEL TAGS

All discharges, gauges, and controls will be properly identified by color-coded metal tags. The metal tags will be affixed with 3M industrial adhesive.

ENGINE HOUR METER, PUMP PANEL

A 2" engine hour meter (indicating engine run time elapsed) shall be located on the pump panel.

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PUMP SYSTEM, WATEROUS CSU SINGLE STAGE

PUMP ASSEMBLY

The pump shall be of single stage construction and comply with all applicable requirements of the latest standards for automotive fire apparatus of the National Fire Protection Association.

The pump shall be free from objectionable pulsation and vibration under all normal operating conditions.

The pump body shall be closed-grained gray iron and must be horizontally split in two sections for easy removal of the entire impeller shaft assembly, and designed for complete servicing from the bottom of the truck without disturbing setting of the pump in the chassis or apparatus piping, which is connected to the pump. Pump body halves shall be bolted together on a single horizontal face to minimize leakage and facilitate reassembly.

The discharge manifold shall be cast as an integral part of the pump body assembly and provide at least three full 3-1/2" openings located one outlet on the right side of the pump body, one outlet on the left side of the pump body, and one outlet directly on top of the pump discharge manifold.

The impeller shall be bronze with double suction inlets, accurately balanced (mechanically and hydraulically), of mixed flow design with reverse-flow, labyrinth-type, and utilize wear rings that resist water bypass and loss of efficiency due to wear.

The wear rings are to be bronze, and shall be easily replaceable to restore original pump efficiency and eliminate the need for replacing the entire pump casing due to wear.

The impeller shaft shall be stainless steel, accurately ground to size, and supported at each end by oil or grease-lubricated anti-friction ball bearings for rigid and precise support. Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. The impeller shaft shall be of two-piece construction separable between the pump and pump transmission to allow true separation of the transmission from the pump without disassembly of either component. No sleeve type bearings shall be used.

The pump transmission shall be rigidly attached to the pump body assembly and be of the latest design incorporating a high strength, involuted, tooth-form Hy-Vo chain drive and driven sprockets capable of operating at high speeds to provide smooth, quiet transfer of power. The shift engagement is accomplished by a free sliding collar and shall incorporate an internal locking mechanism to insure that collar shall be maintained in ROAD or PUMP position.

For chassis equipped with automatic transmissions, the pump transmission driveline shall have a torque-rating equal to or greater than the maximum net engine torque multiplied times the first gear ratio and torque converter ratio.

The suction fittings shall include removable, die cast, zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

A 3" clapper check valve shall be installed between the suction side of the pump and the tank-to-pump valve. This 3" clapper valve shall eliminate the possibility of a pressure surge expanding the water tank.

Pump system shall utilize an integral discharge manifold system that allows a direct flow of water to all discharge valves.

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PACKING GLANDS

The stuffing boxes shall be integral with the pump body and be equipped with two-piece glands to permit adjustment or replacement of packing without disturbing the pump. Lantern rings shall be located at inner ends of stuffing boxes so that all rings of packing can be removed without removal of the lantern rings. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.

IMPELLER HUB, FLAME PLATED

The impeller shall have a flame-plated hub to assure maximum pump lift and efficiency despite the presence of abrasive particles, such as fine sand in the water being pumped.

PUMP SHIFT W/MANUAL OVERRIDE

An air operated pump shift shall be installed in the chassis cab to engage the fire pump. Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator while in the cab.

A green indicator light shall be installed on the cab dash and labeled "Pump Engaged".

Where an automatic chassis transmission is provided, a green indicator light in the driving compartment and a green indicator light located at the pump operator's position shall be provided and shall be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear.

The light in the driving compartment shall be labeled "OK TO PUMP". The light on the pump operator shall be positioned adjacent to and preferably above the throttle control and shall be labeled "Warning: DO NOT OPEN THROTTLE UNLESS LIGHT IS ON". The green light on the pump operator's panel shall be energized when the pump is engaged, the transmission is in drive, and the parking brake is set.

A pump shift manual override installed on the lower left pump panel providing a method of engaging the pump in the event of a failure of the powered pump shift.

PRIMING SYSTEM, PUMP

The priming pump shall be a 12-volt Waterous model VPO Oil-Less, positive displacement vane type, electrically driven conforming to the standards outlined in the current edition of NFPA. One (1) priming control shall open the priming valve and start the priming motor. The primer shall be capable of priming without the use of primer oil. The primer shall be connected to the power source with a 300 amp fusible link.

A Vacuum Activated Priming valve (VAP), consists of a stainless steel valve stem, spring and pressure disk in a plastic valve body. A rubber disk forms the seat for the valve stem and also forms a seal between the priming valve inlet and the pump body. A rubber diaphragm forms a seal which allows the valve to open and close while isolating the interior of the priming valve from atmospheric pressure.

U.L. TEST POINTS

Two (2) U.L. test plugs shall be pump panel mounted for testing of vacuum and pressures.

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U.L. CERTIFICATION, 1500 GPM

The apparatus shall be third party tested and certified by Underwriters Laboratories, Inc. UL testing is recognized as a leading, third party, "Product Safety Certification" organization for over 100 years. UL has served on the NFPA (National Fire Protection Association) technical committee for over thirty (30) years.

The testing organization must meet the following minimum requirements:
Must be nationally recognized testing laboratory recognized by OSHA

Must comply with the ASTM (American Society for Testing Materials) standard E543 "Determining the qualifications for nondestructive testing agencies"

Must have more than forty (40) years of Automotive Fire Apparatus safety testing experience and more than fifteen (15) years of factory aerial device testing and Certification experience

Must not represent, be associated with, or in the manufacture or repair of automotive fire apparatus

Must provide proof of ten (10) million dollars in excess liability insurance for bodily injury and property damage combined

The pump shall meet and perform the following test to receive a U.L. Certification:

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

PUMP TEST CERTIFICATION PLATE

A permanently affixed plate shall be installed at the pump operator's panel. It shall provide the rated discharge and pressures together with the speed of the engine as determined by the certification test for each unit. It shall also provide the position of the parallel/series pump used and the no load governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve.

A label shall be provided on the pump operator's 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.

SUCTION HEADERS

A 6" NST non-gated suction header with removable screen, and long handled cap shall be provided on the left side of the pump.

A short 6" NST gated suction header with removable screen, and long handled cap shall be provided on the right side of the pump.

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There shall be a Waterous Monarch-Electrically operated butterfly valve installed behind the panel on the suction side of the pump. The valve shall be equipped with a short intake fitting and integral relief valve mounting pad. A bleeder valve shall also be provided.

An Akron Model 59 relief valve shall be provided for the gated suction adjustable from 50 to 175 PSI and pre-set at the factory at 125 PSI.

FRONT SUCTION INLET

A 5" gated front suction inlet shall be installed vertically through the front bumper extensions gravelshield and turn 90 degrees forward terminating 5" FNPT x 5" MNST with chrome plated adapter and strainer.

The suction inlet shall be controlled at the pump operator's panel by Electric Monarch valve, with built-in relief valve mounting pad, and indicator package. A bleeder valve shall also be provided.

An Akron Model 59 relief valve shall be provided for the front suction adjustable from 50 to 175 PSI and pre-set at the factory at 125 PSI.

The front suction plumbing shall be constructed from schedule 10 stainless steel plumbing with victaulic or roustabout couplings at each end, the plumbing shall be contoured and form fitted routed along the chassis frame rails connecting the pumps suction header plumbing to the front 90 degree elbow.

A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating:

"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

A 3/4" push-pull drain valve shall be provided for the front suction located at the lowest point of the plumbing and properly labeled.

A 6" swivel elbow rotating 180 degrees shall be installed in the front suction plumbing.

INTAKE RELIEF VALVE

There shall be an Akron model 59 suction side relief valve provided in the pump system. The relief valve is adjustable from 50-175 psi and set at the factory at 125 psi.

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

Fire Research PumpBoss series PBA400-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 6 3/4" high by 4 5/8". 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 engine information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring. Inputs from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:

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Engine RPM; shown with four daylight bright LED digits more than 1/2" high
Check engine and stop engine warning LEDs
Engine 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
Pressure and RPM operating mode LEDs
Pressure / RPM setting; shown on a dot matrix message display
Throttle ready LED.

A 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 located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor and monitoring pressure display shall be programmed at installation for a specific engine.

MASTER GAUGES, 4-1/2"

Two (2) compound 4-1/2" master gauges shall be provided and installed on the pump operator's panel. The intake and discharge gauges are liquid filled with a solution to assure visual readings and reduce inner lens condensation. The body of the gauges shall be constructed of Zytel nylon with chrome-plated bezels. The face of the gauges shall be Spun Metal with black background and white markings accurate within 1%.

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The pressure gauges shall maintain performance of all features and be free from defects in material and workmanship which includes fluid fill leakage and discoloration for seven years.

FILL SUBSURFACE/RETURN LINE

There shall be one (1) subsurface/return line installed in the booster tank. The subsurface/return line shall prevent aeration of the water in the booster tank under low water conditions. The subsurface/return line piping shall be of the same size as the "Tank Fill".

TANK TO PUMP

One (1) 3" ball valve shall be installed between the pump and the water tank. The tank to pump valve shall be a quarter turn fixed pivot design constructed from bronze. The valve shall be controlled by a chrome push/pull locking "T" handle installed at the left pump panel.

VALVE, MASTER DRAIN

There shall be a master drain valve recessed mounted below the pump module under the side running board, connecting all drain lines, with the capacity to discharge water simultaneously from all locations to below the chassis frame rails.

VALVE, INDIVIDUAL DRAIN

All lines shall drain through the master drain valve or shall be equipped with individual drain valves, easily accessible and labeled.

One (1) individual quarter turn drain valve shall be furnished for each 1-1/2" or larger discharge port and each 2-1/2" gated auxiliary suction.

The drain/bleeder valves shall be located at the bottom of the side pump module panels.

All drains and bleeders shall discharge below the running boards.

TANK FILL

There shall be a 2" pump to tank fill line installed, with a 2" inline bronze valve and high-pressure flexible hose tested to 1200 PSI. The valve shall be (locking "T" handle) push-pull controlled at the pump operator's panel.

ENGINE COOLER

The engine cooler shall be installed in-line from the discharge side of the pump, and installed in the engine cooling system. There shall be a 1/2", quarter turn valve installed through the pump panel and shall be clearly labeled.

PUMP COOLER

The pump shall have a 3/8" line installed from the pump discharge, to the water tank to cool the pump during long periods of pumping when water is not being discharged. The pump cooler shall be controlled from the pump operator's panel by a

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3/8" valve consisting of a cast bronze body with 1/4 turn chrome plated bronze ball, reinforced Teflon seals, and blow-out-proof stem rated to 600 PSI.

The valve shall be installed through the pump panel and clearly labeled.

PLUMBING SYSTEM

All suction and discharge lines up to 3" shall be constructed of a minimum of Schedule 10 stainless steel pipe, where vibration or chassis flexing may damage or loosen threaded pipes, Victaulic or Roustabout couplings shall be used. All suction and discharge outlets shall have National Standard Threads (NST) and designed for 500 PSIG including, valves, drain cocks, lines, intake, and outlet closures, excluding the tank fill and tank to pump lines (tank side of the valves).

PUMP PAINTING

The pump shall be painted black in color.

AKRON / WATEROUS PUSH-PULL CONTROL VALVE PACKAGE

All specified discharge valves shall be Waterous bronze chromium plated with Stainless Steel internal parts push/pull controlled from the pump operator's panel. All other valves shall be Akron.

Waterous Chromium plated bronze ball valves

- Modular design with interchangeable ends for mounting flexibility
- Floating self-adjusting seal assembly
- Complies with NFPA requirements
- Variety of valve ends
- Design for fast servicing
- Full flow construction

The Akron Swing-Out Heavy-Duty valves are designed for operating pressures to 250 psi (17 bars)

- 10-year warranty against manufacturer's defects
- Available in 1" to 4" sizes
- 90° handle travel 316 stainless steel ball with Hydromax technology
- Improved sealing & increased gating ability
- Flow optimization reduces turbulence while in the gated position and requires lower operating forces
- No lubrication or regular maintenance required
- Simple two seated design (no O-Rings to cut or lose during assembly or maintenance)
- Wide range of available adapters
- Designed and tested to exceed NFPA requirements
- Cast, machined and assembled at our facilities in Wooster, Ohio

All valve packages shall meet current NFPA 1901 Standards for valve operating speeds when controlled by gear, electric actuator, or slow close device.

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SUCTION, 2-1/2" LEFT REAR PANEL

One (1) 2-1/2" swing operated ball valve shall be installed at the pump panel, left rear plumbed to the suction side of the pump with 2-1/2" piping, 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain, and 3/4" drain valve.

A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating:

"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

DISCHARGE ELBOWS

All 2-1/2" side discharge outlets shall terminate with chrome-plated 30-Degree elbows with 2-1/2" MNST threads, chrome vented cap and chain.

Caps shall automatically release pressure in the discharge outlet before the threads are completely disengaged unless the outlet and the cap are equipped with drains or bleeder valves.

NO. 1 CROSSLAY, 1-3/4" DOUBLE LAY

One (1) pre-connected crosslay compartment shall be provided above the side mount operator's panel accommodating 200' of 1-3/4" double jacket hose. Stainless steel nylon guided rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface.

One (1) 2" ball valve with mechanical swivel shall be installed. The valve shall be plumbed to the crosslay with 2" high-pressure flexible hose and stainless steel couplings. The high pressure hose shall be tested to 1200 PSI. The crosslay valve shall be push-pull controlled at the pump operator's panel.

Each discharge is equipped with a 3/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

NO. 2 CROSSLAY, 1-3/4" DOUBLE LAY

One (1) pre-connected crosslay compartment shall be provided above the side mount operator's panel accommodating 200' of 1-3/4" double jacket hose. Stainless steel nylon guided rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface.

One (1) 2" ball valve with mechanical swivel shall be installed. The valve shall be plumbed to the crosslay with 2" high-pressure flexible hose and stainless steel couplings. The high pressure hose shall be tested to 1200 PSI. The crosslay valve shall be push-pull controlled at the pump operator's panel.

Each discharge is equipped with a 3/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

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NO. 3 CROSSLAY, 2-1/2" DOUBLE LAY

One (1) pre-connected crosslay compartment shall be provided above the side mount operator's panel accommodating 200' of 2-1/2" double jacket hose. Stainless steel nylon guided rollers shall be installed at each end with stainless steel scuff plates around the perimeter to protect the painted surface.

One (1) 2-1/2" ball valve with mechanical swivel shall be installed. The valve shall be plumbed to the crosslay with 2-1/2" high-pressure flexible hose and stainless steel couplings. The high pressure hose shall be tested to 1200 PSI. The crosslay valve shall be push-pull controlled at the pump operator's panel.

Each discharge is equipped with a 3/4 quarter-turn drain valve.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

CROSSLAY DIVIDERS

Two (2) crosslay dividers shall be provided manufactured from 1/4" (.250") smooth aluminum plates, with an extruded aluminum base mounted in an extruded track for adjustment.

ALUMINUM/HYPALON TRIPLE CROSSLAY COVER

There shall be one (1) triple crosslay cover provided, constructed of 1/8" (.125") aluminum tread plate, with stainless steel piano hinge, chrome lift handles, and two (2) hook latches.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

CROSSLAY COVERS

Two (2) Cargo net covers shall be provided on each side of the apparatus preventing hose from inadvertently deploying during normal operations meeting the current NFPA requirements.

The covers shall be black in color.

DISCHARGES, 2-1/2" LEFT FRONT PANEL

Two (2) Watrous 2-1/2" full-flow ball valves with 3/4" drains shall be installed at the pump panel left front upper and lower plumbed to the discharge side of the pump push/pull controlled from the pump operator's panel.

DISCHARGE, 2-1/2" RIGHT FRONT UPPER PANEL

One (1) Watrous 2-1/2" full-flow ball valve with 3/4" drain shall be installed at the pump panel, right front upper, plumbed to the discharge side of the pump push-pull controlled from the pump operator's panel.

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DISCHARGE, 4" RIGHT FRONT LOWER PANEL

One (1) Akron 4" Heavy-Duty (Slo-Close) ball valve with 3/4" drain shall be installed at the pump panel, right front lower, plumbed to the discharge side of the pump equipped with 4" NST threads chrome cap and chain handwheel controlled at the pump operator's panel.

DISCHARGE, 2-1/2" RIGHT REAR UPPER PANEL

One (1) Waterous 2-1/2" full-flow ball valve with 3/4" drain shall be installed at the pump panel, right rear, upper plumbed to the discharge side of the pump push/pull controlled from the pump operator's panel.

DECK GUN PLUMBING, 3-1/2"

One (1) Waterous 3-1/2" (Slo-Close) inline valve with 3/4" drain shall be plumbed to the Deck Gun discharge outlet with 3" pipe terminating 3" FNPT x four (4) bolt flange handwheel controlled at the pump operator's panel. Bright LED lights shall indicate valve position.

A Handwheel Valve shall be installed just above the deck to allow the Deck Gun Operator to control the flow of water.

No Push/Pull Valve on the pump panel.

DISCHARGE, 2-1/2" LEFT REAR

One (1) Akron 2-1/2" Heavy-Duty ball valve with 3/4" drain shall be plumbed to the left rear of the apparatus terminating 2-1/2" FNPT x 2-1/2" MNST with chrome cap and chain push-pull controlled at the pump operator's panel.

Locate as far left as possible.

30 DEGREE ELBOW(S) - 2-1/2" FNST X 2-1/2" MNST

There shall be one (1) Trident model 01.010.0 2-1/2" FNST x 2-1/2" MNST chrome plated elbow(s) supplied with the apparatus. The elbow(s) shall have a 30 degree turn down.

DISCHARGE, 2-1/2" RIGHT REAR

One (1) Waterous 2-1/2" full-flow ball valve with 3/4" drain shall be plumbed to the right rear of the apparatus terminating 2-1/2" FNPT x 2-1/2" MNST with chrome cap and chain push-pull controlled at the pump operator's panel.

Locate as far right as possible.

30 DEGREE ELBOW(S) - 2-1/2" FNST X 2-1/2" MNST

There shall be one (1) Trident model 01.010.0 2-1/2" FNST x 2-1/2" MNST chrome plated elbow(s) supplied with the apparatus. The elbow(s) shall have a 30 degree turn down.

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WATER TANK

The tank shall have a capacity of 500 U.S. gallons and shall be constructed of PT3™ polypropylene material. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1” as required. Internal baffles are generally 3/8” in thickness.

ISO CERTIFICATION

The tank must be "L" shaped in design and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

DESIGN

Each tank is designed to the Purchaser's specification and/or drawing submittal. An approval drawing is sent to the Purchaser prior to commencing manufacturing. Upon receipt of the signed approval drawing, the tank is scheduled for production.

CONSTRUCTION

The booster and/or foam tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" PT3™ polypropylene. 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.

All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™. Tolerances in design allow for a maximum variation of 1/8” on all dimensions.

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall be located in the left front corner of the tank unless otherwise specified by the tank manufacturer to the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction. The tank cover shall be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or

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recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and shall assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall accommodate the necessary lifting hardware.

SUMP

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 1/2" PT3™ polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that shall incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

OUTLETS

There shall be two (2) standard tank outlets: one for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and, one for tank fill line, which shall be sized according to the NFPA minimum size chart for booster tanks. 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 1000 GPM. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through-the-tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

MOUNTING

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

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mounted directly to the tank top unless provisions have been designed into the Poly-Tank® III for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

CAPACITY CERTIFICATION

All water and foam tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Each Poly-Tank® III is delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification.

TANKNOLOGY™ TAG

A tag shall be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones. The information contained on the tag shall include the capacity of the water and foam (s), the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information. The QR code shall allow the user to connect with the tank manufacturer for additional information and assistance.

WATER TANK SIZE CERTIFICATION

The manufacturer shall certify the capacity of the water tank prior to the delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided when the apparatus is delivered.

GAUGE, WATER LEVEL

A Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump operator's panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

GAUGE, AUXILIARY WATER LEVEL

There shall be a pair of Fire Research TankVision MAXVISION model WLA280-A00 tank remote indicators shall be installed. The indicator shall show the volume of water in the tank on Ninety-six (96) easy to see super bright Tri-color LEDs. The indicator case shall be waterproof, manufactured of Polycarbonate material with an integrated lens. The package includes a rubber gasket.

The remote indicator shall receive input information over a datalink from a Fire Research TankVision primary indicator model WLA200-A00, WLA300-A00 or WLA400-A00. The remote indicator shall indicate the level as a single color in Red for 25% or less, Amber color for up to 50% volume, Blue color for up to 75% volume and Green color for up to

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100% volume. When the level reaches 25%, the red LEDs will begin flashing. When the level is empty, the red LEDs will scroll in a down-chasing motion and then flash three times. It shall have the program capability to adjust the brightness level for day time and nighttime viewing.

The lights shall be mounted per Purchaser requirements, typically one each side on or near the cab. The units shall activate with the application of the park brake.

APPARATUS BODY, 102" WIDE

The 102" wide apparatus body and subframe shall be constructed entirely of marine grade aluminum plate and extrusions.

BODY SUBFRAME

The main body support cross member extrusions shall be 3" x 4" 6061T6 aluminum alloy, double "I" beam with a wall thickness of 7/16" (.438"). These cross members shall extend the full width of the body to support the compartment framing. The cross members shall be welded to a 3/4" (.750") x 3" solid aluminum, 6061T6 aluminum (alloy frame rail) extrusion. The frame rail extrusion shall be shaped in contour with the chassis frame rails. The frame rail extrusion shall be mounted over a 1/2" (.5") thickness, reinforced rubber cushion to isolate the aluminum subframe from the chassis steel frame rails. The apparatus body structure shall be securely fastened to the chassis frame rails with a minimum of six (6) 5/8" (.625") cross member OD, steel U-bolts. The main body support cross member shall have a gusset above and below each cross member. The gussets shall be constructed of 2.0" x 4.0" 6063T6 aluminum alloy extrusion with a .190" wall thickness. The gussets shall be continuously welded with 5356 aluminum alloy welding wire to add support to the body sidewalls. The main body supports and the longitudinal double "I" beam supports shall have a "C" shaped rubber tank cushion installed on the top of each member. This rubber extrusion shall conform to the shape of the double "I" beam extrusion to keep the tank cushion in place. This method is used to prevent damage to the tank.

Absolutely no pop-rivets, screws or any other hardware shall be used to hold the rubber tank cushion in place.

BODY CONSTRUCTION

The complete apparatus body structure shall be an all welded construction and be free from nuts, bolts and other fasteners. Upon completion of the weldments, the body shall be completely sanded and deburred for removal of all sharp edges.

The body framework shall be formed from beveled aluminum alloy extrusions and electrically seam welded at each joint using 5356 aluminum alloy welding wire. Body sides shall be formed from 5052 H-32 (marine grade) smooth aluminum plates. The horizontal surfaces above the compartment tops shall be constructed from aluminum tread plate.

The horizontal and vertical frame member extrusions shall be 2.0" x 4.0" with a .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy. This extrusion shall have .190" outside radius corners. The longitudinal frame member, below the lower compartments shall be a 2.0" x 4.0" 6063T6 aluminum alloy extrusion with .190" radius corners. Each body corner shall be a 3.5" x 12-3/4" 6063T6 extruded aluminum section with .210" wall thickness, and shall be welded as an integral part of the body. This extrusion shall have a 1" corner radius.

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COMPARTMENT CONSTRUCTION

The compartment sidewalls shall be of one-piece construction. The walls shall be formed from 3/16" (.1875") 5052 H-32 (marine grade) smooth aluminum plate. All compartment floors shall be formed from 3/16" (.1875") aluminum tread plate. The floors shall be welded in place with a continuous weld all around the perimeter to insure maximum strength.

The external compartment tops shall be constructed of 1/8" (.125") aluminum tread plate. The tops shall have a formed edge, which serves as a drip rail for the compartments below. The compartment tops shall be secured with stainless steel screws to allow for ease of removal for access to the bodies wiring harnesses.

The compartment seams shall be sealed with permanent pliable silicone caulking.

Each compartment shall be vented through a 3" wide x 15" high louver that is machined stamped in a panel located in each body corner extrusion. The panel shall be removable to provide access to service wiring and other mounted components.

WHEEL WELL PANELS, PAINTED ALUMINUM

The wheel well shall be constructed from 2" x 4" x .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy and have .190" outside radius corners. The extrusion shall be slotted the full length to permit an internal fit of 3/16" (.187") painted aluminum panels. The wheel well liners shall be constructed of 3003 H-14 smooth aluminum plates. They shall be bolted in place for ease of maintenance. The wheel well fenderettes shall be constructed of a #304 Stainless steel with a #7 polished finish.

A deflection shield shall be mounted to the body subframe to keep road debris from entering the water tank area.

HOSEBED

The hosebed sides shall be constructed of 3/16" (.1875") 5052 H-32 (marine grade) smooth aluminum plate welded to the extruded framework. There shall be a 3" x 3.5" 6063T6 aluminum extrusion with .190" wall thickness running the entire length of the hosebed at the top for structural rigidity. The hosebed decking shall be constructed from anodized aluminum extrusions. The extrusions shall be 3/4" (.750") x 8.125" and have 3/4" (.750") x 3.00" hat channel attached to the underside to form a one-piece grid. The entire deck shall be removable, in one piece, to allow ease of serviceability to the tank. The hosebed shall include an extrusion across the front and rear of the compartment for the installation of adjustable hosebed dividers.

The fire apparatus hose body shall be 67-1/2" wide and shall contain a minimum of 79 cubic feet of storage.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

COMPARTMENTS, LEFT SIDE

L1

There shall be one (1) left front compartment installed ahead of the rear axle. This compartment shall have one (1) vertically hinged door. The compartment shall be approximately 43" wide x 64" high x 28" deep in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 43" wide x 60" high.

L2

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There shall be one (1) compartment installed above the wheel well. This compartment shall have one (1) horizontally hinged door. The compartment shall be approximately 58" wide x 32" high x 15" deep. The compartment shall have a useable door opening of approximately 58" wide x 28" high.

L3

There shall be one (1) left rear compartment installed behind the rear axle. This compartment shall have two (2) vertically hinged doors. The compartment shall be approximately 44" wide x 64" high x transverse in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 44" wide x 60" high.

COMPARTMENT DOORS, LEFT SIDE HINGED

The left side compartment doors shall be constructed entirely from 5052-H32 smooth aluminum plate using a box pan configuration. The outer panel shall be constructed from 3/16" (.1875") smooth aluminum plate and the inner pan stitch welded in place from 1/8" (.125") smooth aluminum plate.

There shall be a 1/4" (.250") hole installed in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter of the door to remove water.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments.

Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.

COMPARTMENTS, RIGHT SIDE

R1

There shall be one (1) right front compartment installed ahead of the rear axle. This compartment shall have one (1) vertically hinged door. The compartment shall be approximately 43" wide x 64" high x 28" deep in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 43" wide x 60" high.

R2

There shall be one (1) compartment installed above the wheel well. This compartment shall have one (1) horizontally hinged door. The compartment shall be approximately 43" wide x 32" high x 15" deep. The compartment shall have a useable door opening of approximately 43" wide x 28" high.

R3

There shall be one (1) right rear compartment installed behind the rear axle. This compartment shall have two (2) vertically hinged doors. The compartment shall be approximately 44" wide x 64" high x transverse in the lower section and 15" deep in the upper section. The compartment shall have a useable door opening of approximately 44" wide x 60" high.

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COMPARTMENT DOORS, RIGHT SIDE HINGED

The specified right side compartment doors shall be constructed entirely from 5052-H32 smooth aluminum plate using a box pan configuration. The outer panel shall be constructed from 3/16" (.1875") smooth aluminum plate and the inner pan stitch welded in place from 1/8" (.125") smooth aluminum plate.

There shall be a 1/4" (.250") hole installed in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter of the door to remove water.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments.

Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.

COMPARTMENT, CENTER REAR

B1

There shall be one (1) compartment installed at the center rear of the apparatus. This compartment shall have two (2) vertically hinged doors.

The compartment shall have a useable door opening of approximately 40" wide x 18" high x 34" deep.

COMPARTMENT DOOR, REAR HINGED

The rear compartment door shall be constructed of 3/16" (.1875") smooth aluminum plate with the inner pan stitch welded in place from 1/8" (.125") 5052-H32 smooth aluminum plate.

There shall be a 1/4" (.250") hole provided in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter to remove water.

Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments.

Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.

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REAR BODY CONSTRUCTION, FLAT BACK DESIGN

The rear of the apparatus shall be flat back design. No beavertails shall be installed on the unit.

An Extrusion shall be installed at the rear of the hosebed, as high as possible, between the side walls of the hosebed. The Traffic Advisor shall be mounted on this extrusion.

CHAIN STOP FOR COMPARTMENT DOORS

Chain Stops shall be provided for each vertically-hinged compartment door.

Match H-5815 West Chicago

VERTICAL LOAD TEST, APPARATUS BODY

The apparatus body shall exceed a vertical load testing. The vertical load test to the apparatus body shall follow the same strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R as applied to the cab.

The apparatus body shall be placed under a vertical load test to show structural integrity. There shall be 65,979 lbs. (29.53 metric tons) applied to the apparatus body. There shall be no structure failures to the body and body compartments.

A complete photographic, video, data, and dimensional record of these tests shall be available and placed on record for customer evaluations.

LADDER RACK, SINGLE ARM HYDRAULIC

There shall be a Ziamatic model HLAS, single arm hydraulic ladder rack mounted horizontally on the right side of the apparatus body. The basic system is made of high strength light-weight cast aluminum, and has a minimum depth of 6", without ladders installed on racks. At the flick of a toggle switch, the system lowers the ladders to a comfortable level for retrieval, approximately 31" from stored position. The switch shall be mounted outside the operational envelope of the system in a location providing the operator with an uninterrupted view of ladders and personnel during removal and storage operations. The system requires a minimum compartment shelf of 13" deep for mounting purposes. The system is powered by one (1) 12-volt pump assembly, with a maximum load of ladders, hard sleeves, etc of 500 pounds. There shall be a red flashing light at each end of the ladder rack to signal when the safety mechanisms are deactivated.

The optional stop provides solid "lock up" of the HLAS system against the body. Castings may be cut to desired length and attached to the underside of the rack. Two (2) rubber stops and all hardware to be provided.

Optional stop and hardware shall be installed by Ferrara.

BRACKETS, ATTIC LADDER

Ziamatic model FLBA attic ladder brackets with aluminum stirrup shall be installed on the ladder rack, designed to hold One (1) Alco-Lite folding attic ladder.

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STORAGE TUBES, PIKE POLE

Three (3) aluminum tubes shall be installed on the apparatus for pike pole storage. One (1) end shall be notched to allow the poles to be locked in place.

Location: To Be Determined at Pre-Construction

STORAGE MODULE, CHAIN SAW

There shall be one (1) saw storage module located in the specified compartment(s) to hold one (1) chain saw. The module shall be fabricated from 1/8" smooth aluminum and shall be painted with gray "F-Shield".

The module shall be angled to allow for additional storage. The front of the module shall have one (1) lift up door to access the additional storage area. The outside of each door shall be equipped with a fabricated saw mount and one (1) chrome dog bone handle.

The saw mounted in this storage area shall be a K-950 Saw.

Location: Compartment R1

WHEEL WELL AIR BOTTLE COMPARTMENT, LEFT FRONT

There shall be an aluminum air bottle compartment located in the left front body wheel well to house two (2) spare SCBA cylinders. The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.

The compartment door shall be painted red with a Black positive mechanical latch.

The area of the body where the door seal comes in contact with the body shall be coated with Black F-Shield.

WHEEL WELL AIR BOTTLE COMPARTMENT, LEFT REAR

There shall be an aluminum air bottle compartment located in the left rear body wheel well to house two (2) spare SCBA cylinders. The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.

The compartment door shall be painted red with a Black positive mechanical latch.

The area of the body where the door seal comes in contact with the body shall be coated with Black F-Shield.

WHEEL WELL EXTINGUISHER COMPARTMENT, RIGHT FRONT

There shall be an aluminum extinguisher compartment located in the right front body wheel well to house one (1) 15-pound CO2 extinguisher. The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.

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The compartment door shall be painted red with a Black positive mechanical latch.

The area of the body where the door seal comes in contact with the body shall be coated with F-Shield.

WHEEL WELL EXTINGUISHER COMPARTMENT, RIGHT REAR

There shall be an aluminum extinguisher compartment located in the right rear body wheel well to house two (2) extinguishers (2-1/2 gallon water and 20-pound ABC). The floor and sides of the compartment shall be lined with a polypropylene sheet and the back wall shall be lined with rubber matting to provide scuff protection. The bottom of the compartment shall be supported to eliminate breakage. The compartment shall be vented to facilitate moisture drainage.

The compartment door shall be painted red with a Black positive mechanical latch.

The area of the body where the door seal comes in contact with the body shall be coated with F-Shield.

DOORS, WHEEL WELL COMPARTMENTS

The wheel well compartment doors shall be painted aluminum with a push button trigger latch.

The compartment door shall be painted red with a Black positive mechanical latch.

BODY TRIM

The standard body trim shall include the following:

There shall be drip rail installed over the compartment door openings.

A drip rail shall be located over each compartment door. This drip rail shall form a lip over the exterior door pans to prevent water from running into a compartment.

The vertical rear face of the body shall be covered with smooth aluminum plate.

Two (2) handrails shall be located on the rear of the apparatus, one (1) handrail per side. Each handrail shall be constructed of 1-1/4" knurled aluminum. The handrails shall be mounted with chrome plated end stanchions. Each handrail shall be sufficient in length to meet all standard requirements.

Two (2) stanchions shall be mounted at the rear of the apparatus hosebed, one (1) each side. The stanchions shall be 11" long x 3-3/4" wide. Stainless steel scuff plates shall be installed in the hosebed area to prevent deploying hose from damage on stanchion supports. The stanchions shall provide mounting positions for the Zone C warning lights and additional hosebed lighting. All wiring for the upper rear lighting shall be concealed inside the stanchions.

BODY CORNER STONE GUARDS, FRONT

There shall be a pair of stone guards installed, one (1) each side on the outer face of the front forward compartments. Stone guards shall be 1/8" (.125") aluminum tread plate and fastened securely to apparatus body to protect surface from loose gravel.

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FUEL FILL, RECESSED WITH DOOR

There shall be a recessed fuel fill assembly with a non-locking door mounted on the left side of the apparatus body. The fuel fill assembly shall be equipped with a fuel fill cap, retention ring and hinged door. The assembly shall be properly labeled "DIESEL FUEL ONLY".

MUD FLAPS, REAR

The rear axle mud flaps shall be constructed from hard black rubber and installed at the rear of the body fenders.

RUBRAIL

There shall be an aluminum rubrail installed on both sides of the lower body compartments. The rubrail shall be constructed from "C" channel extrusion. The aluminum rubrail shall be bolted in place with stainless steel bolts, and spaced from the fire body to provide body protection. The solid rubrail shall serve as protection to the side doors when encountering close objects. Tread plate rubrails or welded on shall not be acceptable.

REAR STEP

The 16" deep rear step shall be constructed of 3/16" (.1875") aluminum tread plate. The rear step shall be flanged down 2.50" and in 1.00" to maximize strength and rigidity. The rear step shall be bolted on for removal or replacement.

All running board and step surfaces shall comply with NFPA 1901.

CHROME FOLDING STEPS, FRONT OF BODY

There shall be six (6) large chrome-folding steps with a minimum surface area of thirty-five (35) square inches. The steps shall be mounted on the front face of the forward compartment as directed by the Purchaser.

There shall be an LED light installed above and below each step.

Location: 3 on the Left Side and 3 on the Right Side.

STEPS, REAR FIXED W/LED LIGHT

There shall be four (4) rear lighted steps installed on the apparatus. The steps shall be a Cast Products step and have a minimum of thirty-five (35) square inches of surface area to conform to the NFPA 1901 standards. The steps shall include a 12-volt LED light to illuminate the area below.

TOW EYES, REAR

Two (2) 1" thick rear tow eyes constructed of A-36 steel shall be mounted below the frame at the rear of the apparatus. The tow eyes shall be attached to steel weldments that are mounted to the apparatus. The eyes shall have a minimum dimension of three (3) inches. The tow eyes shall be used for towing, not lifting the apparatus.

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HANDRAIL, BELOW HOSE BED

There shall be an intermediate handrail installed on the apparatus below the hose bed. The handrail shall be constructed of 1-1/4" knurled aluminum. The handrail shall be mounted with chrome plated end stanchions.

HOSE BED DIVIDERS

Three (3) hose bed dividers shall be manufactured from 1/4" (.250") smooth aluminum plate with an extruded aluminum base welded to the bottom. The divider shall have an extruded track to slide in to allow the hose bed to adjust for different hose capacities. One end of the divider shall have a 3" radius corner. The divider shall be sanded to prevent damage to hose.

HOSE BED COVER

A 1/8" (.125") aluminum tread plate hose bed cover shall be provided. The cover shall be two-(2) doors with continuous stainless steel hinge along each side. The hose bed cover shall have aluminum assist handles and door hold open springs. An open door indicator switch shall be provided and wired to the open door indicator system in the cab.

Two (2) Hypalon end flaps shall be provided at the rear of the apparatus. The flaps shall be constructed of 16 oz. heavy-duty, fire retardant Hypalon.

A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

The covers shall be wired to the door ajar system.

The Hosebed cover shall be coated with Black F-Shield.

ACCESS COVER, FILL TOWER

A hinged access door shall be provided at the front of the aluminum hose bed cover to access the water fill tower while the hose bed cover is closed.

The hypalon end flaps shall be secured at the bottom using snaps and Velcro. The end flaps shall completely protect the hose and prevent the hose from inadvertently deploying during normal operation.

The cover shall meet the NFPA 1901 15.10.5 requirement.

The Flap shall be a one piece design.

The covers shall be black in color.

HOSE BED CAPACITY

The hose bed shall have the capacity to hold the following:

1000' of 3"
800' of 5"
150' of 1 3/4"

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A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.

HINGED SHELVES IN HOSE BED DIVIDER

There shall be two (2) intermediate hinged shelves installed in the rear of the hose bed dividers.

SHELF, ADJUSTABLE

There shall be four (4) adjustable shelves constructed from 3/16" (.1875) smooth aluminum. Each shelf shall be approximately 37-48"W x 12-15"D. The adjustable track shall be made from aluminum extrusions. Each shelf shall have a 2" lip on all sides for additional strength.

Locations: Compartments L1, L3, R1 & R3.

SHELF, ADJUSTABLE

There shall be one (1) adjustable shelves constructed from 3/16" (.1875) smooth aluminum. The shelf shall be approximately 49-60"W x 12-15"D. The adjustable track shall be made from aluminum extrusions. The shelf shall have a 2" lip on all sides for additional strength.

Location: Compartment L2

TRAYS, 500 POUND ROLL OUT

There shall be two (2) roll-out trays supplied, constructed from 3/16" (.1875") smooth aluminum plate. Each tray shall be approximately 37-48"W x 24-28"D. Each tray shall have a 3" lip on all sides for additional strength. The trays shall be mounted on Slide Master Slides with a combined capacity of 500 pounds.

Locations: Compartments L3 & R3.

ELECTRICAL SYSTEM

BODY ELECTRICAL

The body electrical system shall be designed as an integrated electrical package specifically engineered for fire apparatus application. The integrated electrical system shall be comprised of power distribution panels, which interface to the body and chassis through an engineered harnessing system.

All chassis wiring shall be type "GXL" in accordance with S.A.E. J1128 and NFPA-1901. Wiring shall be color coded and include function codes every three (3) inches on both sides.

The electrical wiring harness shall be covered by a black split convoluted loom, rated at a minimum of 275° F.

DISTRIBUTION PANELS

The electrical distribution panels and circuits must be housed in each rear corner compartment or extrusion. The distribution panel shall incorporate a power and ground stud for connection to the internal circuits.

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All internal wire end terminals, including locking bulkhead connectors, shall be mechanically affixed to the wire ends by machine terminal crimping presses. No hand-crimped terminals shall be acceptable.

All internal splices shall be ultrasonically welded connections - no butt style connections shall be acceptable. All internal wiring shall be of the high temperature GXL type wire and shall be protected by wiring duct wherever possible.

Each side electrical distribution panel shall consist of fifteen (15) power distribution relays. The power distribution relays shall be replaceable, SPDT automotive style, rated at a minimum of 30 amperes.

The power distribution relays shall incorporate separate inputs, which are able to accept outputs from a load management system. The load management inputs must allow for the addition of a load management system before, during or after the time of delivery without requiring a rewiring of the existing distribution panel circuits.

Connections to the distribution panel shall utilize Deutsch style bulkhead connectors. Screw clamp type connections are not acceptable.

The distribution panel shall also contain circuits ancillary to the required DOT signals and other body functions.

The complete body electrical system shall be 100% documented and contain independent circuit diagrams with point to point wiring information, as shall as a general component diagram included in the apparatus manual.

All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the driver. Light switches shall be of the marine grade rocker type with integral indicator light to show when lights are energized. All switches shall be appropriately identified.

WIRING PROTECTION

All 12-volt wiring shall be run in high temperature, rated at a minimum of 275° F, split loom for easy access to wires when trouble shooting.

12-VOLT TESTING

The apparatus low voltage system shall be tested and certified. A copy of the certification shall be provided to the purchaser with the apparatus.

Reserve Capacity Test

The unit shall be run until all engines, engine compartment temperatures are stabilized and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load be activated for ten (10) minutes. All electrical loads shall be shutoff after ten (10) minutes and the battery system shall then be capable of restarting the engine.

Alternator Performance Test at Idle

Minimum continuous electrical loads shall be activated while the unit is at idle speed.

Alternator Performance Test at Full Load

The total continuous electrical load shall be activated with the engine running up to the manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system shall be permitted

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during the test. If however, an alarm is sounded by excessive battery discharge as detected by the system or a system voltage of less than 11.8 volts DC for a 12-volt nominal system for more than 120 seconds, shall be considered a test failure.

Low Voltage Alarm Test

The engine shall be shut off and the total continuous electrical load shall be activated and continue to be applied until the excessive battery discharge alarm activates. The test shall be considered a failure if the alarm has not sounded within 140 seconds after the voltage drops to 11.8 volts.

EMI/RFI PROTECTION

The apparatus shall be manufactured to incorporate the latest designs in the electrical system with components that are state of the art to insure electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

The apparatus shall have the ability to operate in typical fire and rescue situations with no adverse effects from EMI and/or RFI.

The apparatus shall utilize components that are fully protected and wiring that utilizes shielding and loop backgrounds where required to control EMI/RFI susceptibility. The apparatus shall be bonded through ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode and/or resistor protected to prevent transient voltage spikes.

In order to prevent the radio frequency interference completely the purchaser shall be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.

LIGHTS, 16" LED COMPARTMENT

Two (2) On Scene Solutions "Access Series" 16" LED lights shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

Location: Each Side of Door in Compartment B1

LIGHTS, 26" LED COMPARTMENT

Four (4) On Scene Solutions "Access Series" 26" LED lights shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

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Location: Each Side of Door in Compartments L2 & R2

LIGHTS, 58" LED COMPARTMENT

Eight (8) On Scene Solutions "Access Series" 58" LED lights shall be provided with 15 HB, surface mount LED's per 10" light section and produce a minimum of 200 lumens per 10" length. Each "Access Series" shall be capable of operating at a voltage of 9VDC to 14VDC. Each "Access Series" shall be cuttable in 2" increments and feature a high quality, impact resistant Lexan™ enclosure.

The light stick shall be waterproof and rated at 100,000 hours of service. Each light stick shall be provided with a 5 year free replacement warranty.

Location: Each Side of Door in Compartments L1, L3, R1 & R3

DOOR AJAR SWITCHES

All apparatus body doors shall be provided with an auto door switch. These switches shall operate the compartment interior lights and activate the door ajar indicator on each side of the apparatus body when the door is opened. There shall be a red door ajar light mounted in the cab, in view of the driver to indicate an unsecured door. There shall be a buzzer mounted in the cab that shall alert the driver.

LIGHTBAR, 72" WHELEN FREEDOM IV

A Whelen Edge Ultra Freedom IV Linear Super-LED LC Series 72" lightbar model F4N7QLED shall be provided. The F4N7QLED lightbar shall incorporate an anodized extruded heavy duty aluminum base and cover chassis with two front red corner modules with two red endcap modules, two interior white modules, and ten interior red modules. The front of each corner module shall consist of 12 red Linear Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The short red endcap Linear Super-LED lights shall incorporate six red Super-LED installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long red interior Linear Super-LED lights shall incorporate 12 red Super-LED installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. The long white interior Linear Super-LED lights shall incorporate 12 white Super-LEDs installed on a conformal coated PCB board with a thermal pad/aluminum bracket heat sink assembly. All modules will utilize a Diamond Optix™ metalized reflector and two optic collimators. All electronic components shall be conformal coated to provide additional protection. The outer lens construction shall consist of two clear Uni-Dome top lenses with a clear center lens and utilize two liquid injection molded wiper seal dividers for maximum protection against environmental elements. Metal top shields installed on the Uni-Domes and center lens shall provide protection from climatic conditions and provide passive solar radiation to direct heat away from internal components.

The F4N7QLED shall have an electronic LC I/O board. The solid state I/O board shall be microprocessor controlled. The I/O board shall have built-in reverse polarity protection and output-short protection. The I/O board shall have the ability to flash twenty-two (22) Super-LED warning lights. There shall be a data bank of 12 Scan-Lock™ flash patterns including steady burn with low power and cruise light functions. The cruise light function shall allow the user the four corner modules as marker courtesy lights. The F4N7QLED will have the capability to install a traffic advisor in the rear of the lightbar. The I/O board shall also have outputs to add takedown, alley lights, and auxiliary lights for each set of lights to be controlled in pairs.

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All lighthead shall be installed in the F4N7QLED with the aid of black polycarbonate snap-in mounting brackets. The solid state lightbar shall be vibration resistant. The lightbar will contain a 17' 2/c 8GA unterminated power cable and 17' 17/c 22GA unterminated control cable. All electronic components are covered by a five year factory warranty. The F4N7QLED shall include a permanent mount kit with hardware.

The lightbar shall be controlled in the following manner:

Calling for Right of Way - All Positions

Blocking Right of Way - Clear shall not be Active

The lights shall be activated by a single emergency light switch located on the master light switch panel in the cab.

The lightbar shall meet NFPA 1901 edition as configured.

Match Light Bar on H-6042.

LIGHTS, ZONE B/D UPPER FRONT BODY

Two (2) Whelen M6 Series Super-LED model M6RC shall be installed, one (1) each side of the upper front corner of the body. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes an M6FC chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE C UPPER

Two (2) Whelen model B6 Super LED lights shall be installed, one (1) each side on the upper rear outer corners of the apparatus. The combination tailboard light shall incorporate an R316 Rota-Beam™ Super-LED® series beacon and an M7 series warning light in a polished aluminum housing. The high profile beacon shall incorporate 16 rotating beacon PC boards with three (3) red Super-LEDs installed on each PC board. The rotating beacon PC boards shall be installed on a ballast rotator PC board. The conformal coated PC boards shall provide additional protection against environmental elements. The R316R shall have 16 TIR LED rotator reflectors installed over the rotating beacon PC boards with a red optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The R316R shall have 32 Scan-Lock™ flash patterns with varying rotating flash rates. The R316R shall have no moving parts or motors to malfunction.

The lower level warning light shall incorporate 18 red Super-LEDs and a red optic hard coated polycarbonate lens. The M7A shall utilize optic collimators and a metalized reflector for maximum illumination. The warning light shall include an internal flasher with 164 Scan-Lock™ flash patterns including a variety of CA Title 13 compliant patterns, left/right, top/bottom, in/out, and steady burn. The M7A shall also provide synchronize and low power features. The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The light engine shall be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC board shall be conformal coated for additional protection.

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The R316 dome lens shall be sealed to a die cast aluminum base with an "O" ring gasket assembly. The M7 series warning light lens shall be fitted with foam in place gasket assembly to the die cast aluminum base to provide additional protection against environmental elements. The solid state tailboard light shall be vibration resistant. An installation kit including mounting hardware shall be provided for surface mounting. The B63M755 will contain a 12" non-terminated pigtail. The tailboard light will meet NFPA zone C upper requirements when used as a pair and is covered by a five year factory warranty.

LIGHTS, ZONE A LOWER

Two (2) Whelen M6 Series Super-LED model M6RC lights shall be installed, one (1) each side front of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes an M6FC chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D FRONT LOWER

Two (2) Whelen M6 Series Super-LED model M6V2RC shall be installed, one (1) each side forward portion of the apparatus. The Whelen M6 Series Model M6V2RC combination 180° warning/perimeter light shall be provided. The M6V2RC shall incorporate Linear Super-LED® and Smart LED® technology. The configuration of the M6V2RC shall be an M6 V-series red warning light and a perimeter light with a clear non-optic polycarbonate lens. The warning light shall consist of two V-series PC boards containing six red Super-LEDs on each PC board. Clear optic collimators and reflectors will be installed with each PC board for maximum illumination. The perimeter light shall consist of six (6) white Super-LEDs installed on the scene light PC board. The perimeter light shall be installed at 45° angle with a TIR reflector for supreme radiance. The warning light assembly and the perimeter light assembly are installed on a main PC board.

The warning light shall include an internal flasher with 25 Scan-Lock flash patterns including low power and steady burn. The M6V2RC shall also be provided with a synchronize feature. The M6V2RC warning light shall meet KKK 1822F, NFPA 1901, and NFPA 1917 specifications. The M6V2RC perimeter light shall meet AMD 024 with two M6V2RC on each side of the apparatus and NFPA 13.10.1.2 for one M6V2RC up to six feet.

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

The M6V2RC shall be furnished with 12" unterminated pigtails. Rubber gasket, screws, and screw grommets shall be included for installation. The M6V2RC, with the aid of two screws, shall have the ability to be installed as a surface mount light. The warning light is covered by a five year factory warranty.

The White Light shall activate with the respective turn signal.

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The surface mount module includes a M6FB Black Flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D MIDSHIP LOWER

Two (2) Whelen M6 Series Super-LED model M6V2RC shall be installed, one (1) each side midship of the apparatus. The Whelen M6 Series Model M6V2RC combination 180° warning/perimeter light shall be provided. The M6V2RC shall incorporate Linear Super-LED® and Smart LED® technology. The configuration of the M6V2RC shall be a M6 V-series red warning light and a perimeter light with a clear non-optic polycarbonate lens. The warning light shall consist of two V-series PC boards containing six red Super-LEDs on each PC board. Clear optic collimators and reflectors will be installed with each PC board for maximum illumination. The perimeter light shall consist of six white Super-LEDs installed on the scene light PC board. The perimeter light shall be installed at 45° angle with a TIR reflector for supreme radiance. The warning light assembly and the perimeter light assembly are installed on a main PC board.

The warning light shall include an internal flasher with 25 Scan-Lock flash patterns including low power and steady burn. The M6V2RC shall also be provided with a synchronize feature. The M6V2RC warning light shall meet KKK 1822F, NFPA 1901, and NFPA 1917 specifications. The M6V2RC perimeter light shall meet AMD 024 with two M6V2RC on each side of the apparatus and NFPA 13.10.1.2 for one M6V2RC up to six feet.

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

The M6V2RC shall be furnished with 12" unterminated pigtailed. Rubber gasket, screws, and screw grommets shall be included for installation. The M6V2RC, with the aid of two screws, shall have the ability to be installed as a surface mount light. The warning light is covered by a five year factory warranty.

The White Light shall activate with the respective turn signal.

The surface mount module includes a M6FB Black Flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D MIDSHIP LOWER

Two (2) Whelen M6 Series Super-LED model M6RC lights shall be installed, one (1) each side rearward portion of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M6FC chrome flange and hardware for horizontal mounting.

Location: On each side of cab, above the front wheels.

The surface mount module includes a M6FB Black Flange and hardware for horizontal mounting.

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LIGHTS, ZONE B/D REAR LOWER

Two (2) Whelen M6 Series Super-LED model M6RC lights shall be installed, one (1) each side rearward portion of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M6FC chrome flange and hardware for horizontal mounting.

LIGHTS, ZONE B/D REAR LOWER

Two (2) Whelen ION Series Super-LED model WIONSMWJ lights shall be installed, one (1) each side rearward portion of the apparatus. The warning light shall incorporate three red and three blue Super-LED, a clear horizontal optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 69 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a standard single white flange and hardware for vertical or horizontal mounting.

Location: In the Rub Rail, centered under Compartments L1/R1 & L3/R3.

LIGHTS, ZONE C LOWER

Two (2) Whelen M6 Series Super-LED model M6RC shall be installed, one (1) each side on the lower rear of the apparatus. The warning light shall incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty.

STOP, TURN AND BACK-UP LIGHTS

Stop, turn and backup lights shall be Whelen M6 Series, individual fixtures. The red stop (LED) light shall be model M6BTT, the turn light shall be a model M6T amber (LED) type with directional arrow, and the backup light shall be a white (LED) model M6BUW.

Turn Signals shall be programmed to flash outwards.

HOUSING, REAR TAIL LIGHT ASSEMBLY

The fixtures shall be mounted on each rear face of the body in a model M6FCV4, four (4) lighthouse chrome housing.

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OPTICOM

There shall be one (1) GTT Opticom (Model 795H) LED low profile emitter installed in the lightbar and controlled by a switch in the cab. The unit shall operate in accordance with the current NFPA requirements.

ZONE C WARNING LIGHT DIMMING

The Zone C lights shall dim when the parking brake is applied. There shall also be a switch on the dash to select Low or High.

LIGHT, REAR DIRECTIONAL

A Whelen Traffic Advisor model TADF6 shall be provided. The traffic advisor shall incorporate a rectangular extruded black powder coated aluminum chassis with eight (8) split color Linear LED lights with waterproof connectors. The Linear LED lights shall have eight (8) amber and eight (8) of the selected color Super-LED installed with a lens reflector assembly. The sealed lens reflector assembly shall consist of a metalized reflector with a clear optic collimator and a clear non-optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board shall provide additional protection against environmental elements. The CON3 lights are installed with waterproof connectors. The TADF6 will contain an encapsulated Duo traffic advisor flasher to control the light modules.

The solid state traffic advisor shall be vibration resistant. The TADF6 is a front load design traffic advisor for easy serviceability and replacement of the Super-LED modules. The TADF6 shall have seven flash patterns for the warning lights and four traffic advisor direction flash patterns for the amber lights. The TADF6 will contain a 2/C 14GA 20' power cable and a 4/C 22GA control cable. Customized cable lengths are available for the TADF6 for an additional charge. The TADF6 requires an optional TADCTL1 control head or customer supplied switches to operate the traffic advisor. The LED modules are covered by a five year factory warranty.

The Traffic Advisor shall be wired to allow the Traffic Advisor to be utilized without the Emergency Lights.

The rear directional light shall be surface mounted to the body.

LIGHTS, LED DECK

Two (2) Whelen PAR-36 model PFB12 LED 12 volt floodlights shall be installed at the rear of the apparatus to provide work area lighting immediately behind the apparatus in accordance with current NFPA requirements. Each light shall be manually operated by an on/off switch at the light.

CLEARANCE LIGHTS AND REFLECTORS

Clearance lights and reflectors shall be LED lights, which include 2 red marker lights, 4 red rectangular reflectors, 2 amber rectangular reflectors and 1 red three light cluster recessed in the rear step.

LIGHT, LICENSE PLATE

A Whelen OS Series LED model OSC0EDCR shall be provided at the rear of the apparatus to illuminate the license plate. The steady burn illumination light shall incorporate three clear LED and a clear non-optic hard coated polycarbonate lens. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The encapsulated

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assembly shall provide protection against environmental elements. The solid state illumination light shall be vibration resistant. An installation kit including mounting hardware, neoprene gasket and 45 degree angle chrome housing shall be provided for surface mounting. The 0AC0EDCR will contain a 12" non-terminated pigtail. The illumination light meets SAE J592 requirements and is covered by a five year factory warranty.

To be mounted under the Tailboard on a removable bracket.

LIGHTS, 12-VOLT SURFACE MOUNT SCENE

Three (3) pair of Fire Research Spectra LED model SPA260-Q15 surface mount lights shall be provided and installed. The lamphead mounting arm shall terminate in 3/4" NPT threads. Wiring shall extend from the lamphead mounting arm bottom.

The lamphead shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spot light beam pattern. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 15,000 lumens of light. The lamphead shall have a unique lens that directs flood lighting onto the work area and focuses the spot light beam into the distance. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall be no more than 5 3/8" high by 14" wide by 3 3/4" deep and have a heat resistant handle. The lamphead and mounting arm shall be powder coated. The LED scene light shall be for fire service use.

The lamp head housing shall be aluminum with a BLACK colored bezel.

The lights shall be installed one (1) each side of the cab between the front and rear doors.

The cab mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE.

Scene Light switches shall be located in the center panel, accessible by the Officer and the Driver.

The scene lights shall be installed one (1) each side of the body in the upper front corners.

The front side body mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE.

Scene Light switches shall be located in the center panel, accessible by the Officer and the Driver.

The scene lights shall be installed one (1) each side of the body in the upper rear corners.

The rear body side mounted scene lights shall be controlled by individual scene light switches located in the cab labeled LEFT SCENE and RIGHT SCENE.

Scene Light switches shall be located in the center panel, accessible by the Officer and the Driver.

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LIGHT, DRIVER/PASSENGER'S SIDE BROW

Two (2) brow lights shall be installed on the front cab roof, one (1) on the driver's and one (1) on the passenger's side. The mounting brackets shall be attached to the bottom of the lamp head and be machined to conform to the roof radius. Wiring shall extend from a weatherproof strain relief at the rear of the lamp head.

Two (2) Fire Research Spectra LED Floodlight model SPA800-Q15 contour roof mount light shall be installed. The mounting brackets shall attach to the bottom of the lamphead and be machined to conform to the roof radius. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

The lamphead shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spot light beam pattern. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 15,000 lumens of light. The lamphead shall have a unique lens that directs flood lighting onto the work area and focuses the spot light beam into the distance. The lamphead shall be no more than 6" high by 14" wide by 4 3/4" deep. The lamphead and mounting arm shall be powder coated. The LED scene light shall be for fire service use.

Housing shall be painted Black.

The cab mounted brow lights shall be controlled by a light switch located in the cab labeled BROW LIGHT.

RECEPTACLES, 120V HOUSEHOLD

There shall be four (4) 120 volt, 15 amp household receptacles installed on the apparatus. The receptacles shall be wired to the breaker box. The receptacles shall have a weatherproof cover and be a duplex outlet.

Locations: One (1) in Compartment B, One (1) in R2 and One (1) in R3.

One (1) in the EMS Compartment centered on the back wall low, wired to the shore power.

BODY PAINT FINISH, SINGLE COLOR

The apparatus body shall be painted with AkzoNobel Sikkens brand paint. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

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

Paint process shall feature AkzoNobel Sikkens high solid BTLV products and be performed in the following steps:
Corrosion Protection - all aluminum surfaces shall be treated with the AkzoNobel Sikkens LV 260 Epoxy coating to provide superior corrosion resistance and excellent adhesion of the base coat.

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

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AkzoNobel Sikkens High Solid BTLV650 (Base coat) - a lead-free, chromate-free high solid polyurethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.

AkzoNobel Sikkens High Solid BTLV650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

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

After the paint process is complete, the gloss rating of the unit shall be tested with a 60 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

TOUCH-UP PAINT

One (1) container with touch-up paint shall be provided with the completed apparatus.

PAINT, INTERIOR COMPARTMENT

The interior of the body compartments shall be painted with Dark Gray "F-Shield".

PAINT, INTERIOR COMPARTMENT HARDWARE

The interior body compartment shelves, trays, dividers, etc. shall be painted with dark gray "F-Shield".

PAINT, FRONT BUMPER

The front bumper shall be painted with black #450 Red "F-Shield" then painted job color red over the F Shield.

PAINT, FRONT BUMPER GRAVELSHIELD

The front bumper gravelshield shall be painted with black "F-Shield".

PAINT, FRONT BUMPER COMPARTMENT

The front bumper compartment shall be painted with black "F-Shield".

PAINT, FRONT BUMPER COMPARTMENT LID

The front bumper compartment lid shall be painted with black "F-Shield".

PAINT, FRONT CAB GRILLE

The front cab grille shall be painted with black "F-Shield".

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PAINT, FRONT HEADLIGHT BEZELS

The front headlight bezels shall be painted with black "F-Shield".

PAINT, CAB LOWER STEPS

The cab lower exposed steps shall be painted with black "F-Shield".

PAINT, CAB FENDERETTES

The cab fenderettes shall be painted with black "F-Shield".

PAINT, CAB HANDRAIL STANCHIONS

The cab handrail stanchions shall be painted with black "F-Shield".

Only the Stanchions will be Black F-Shield. Match H-6042.

PAINT, CAB SIDE INTAKE GRILLES

The cab side intake grilles shall be painted with black "F-Shield".

PAINT, BODY RUB RAIL

The body rub rail shall be painted with black "F-Shield".

PAINT, BODY FENDERETTES

The body fenderettes shall be painted with black "F-Shield".

PAINT, HOSEBED COVER

The hosebed cover shall be painted with black "F-Shield".

PAINT, PUMP PANEL RUNNING BOARDS

The pump panel running boards shall be painted with black "F-Shield".

PAINT, REAR TAILBOARD

The rear tailboard shall be painted with black "F-Shield".

PAINT, BODY HANDRAIL STANCHIONS

The body handrails stanchions shall be painted with black "F-Shield".

Only the Stanchions will be Black F-Shield. Match H-6042.

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PAINT, REAR TAIL LIGHT BEZELS

The rear tail light bezels shall be painted with black "F-Shield".

F-SHIELD UNDERCOATING, APPARATUS BODY

The underside of the apparatus body shall be sprayed with Black F-Shield that assists in the prevention of rust and corrosion.

SCOTCHLITE STRIPE

There shall be a 6" wide Scotchlite stripe, with an additional 1" wide stripe located above and below. The stripes shall be located no higher than 60" from the ground installed on the apparatus cab and body. The stripes shall cover a minimum of sixty percent (60%) of each side of the apparatus and forty percent (40%) of the front and rear of the apparatus. The stripe shall be installed to meet the current NFPA requirements.

The striping shall be black in color.

The pin/secondary stripe shall be black in color.

The reflective stripe shall run straight from the headlights to the rear of the body on each side of the apparatus.

STRIPE, REAR CHEVRON

A minimum of fifty percent (50%) of the rear vertical surface of the unit shall be overlaid with a reflective material, installed in an alternating "Chevron" pattern (sloping down and away from the centerline) at a 45-degree angle. Each stripe shall be 6" wide and the colors of striping shall be in compliance with the current edition of NFPA 1901.

The Chevron striping shall be Reflexite red and gold.

There shall be a 1/4" black pin stripe installed between each Chevron stripe located on the rear of the body.

LETTERING PACKAGE

ALL LETTERING AND NUMERAL FONT TO MATCH LAYOUTS SHOWN ON THE SERVER.

SAME AS H-6042 with exception of the sides of the Coffin Compartments on H-6042. Engine 103 instead on Squad 1.

Bumper- (Centered) and sized to fill bumper- DOWNERS GROVE- these should be gold spun in color with a reflective black outline / shadow.

Driver's Side Front Cab Corner- 6 ½ " Scramble- gold spun in color with a black outline / shadow, (see layout on the server).

Passenger Side Front Cab Corner- 4 ½" 1 - gold spun in color with a black outline / shadow.

Front Driver / Officer Doors- "Downers Grove Fire Department (gold spun letters with black outline / shadow) w/ "ISO Class 1" in between top arch of Downers Grove and bottom line of Downers Grove. "1" is to be gold spun with black outline/ shadow. "ISO" Class is to be black w/ white outline /shadow. Sized to fill door (see layout on the server).

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Rear Driver side / Passenger side Doors- "ENGINE CO. 103" Letters on top Number "103" on bottom. All to be gold spun in color with a black outline / shadow. Sized to fill door, (see layout on the server)

Window between Front and Rear Doors- Star of Life with "PARAMEDIC" arched above. Gold in color outlined in red. This is a perforated decal on the inside of the window, (see layout on the server).

Compartments L1 and R1 - DGFD Scramble gold spun in color with a black outline / shadow. This is sized to fill the door

Compartments L3 and R3- "103" located on the bottom nearest the rear of the compartment. 10" tall, gold spun in color with a black outline / shadow.

Rear Compartment Door- "ENGINE 103" - gold spun in color and outlined / shadowed in black. Sized to fill door, (see layout on the server).

WARRANTY, BODY PARTS & LABOR

There shall be a two (2) year body mechanical parts and labor warranty provided with the apparatus. The apparatus shall be free of defects in material and workmanship for a warranty period of two (2) years after the date on which the apparatus is first delivered to the original purchaser.

WARRANTY, CAB/CHASSIS PARTS & LABOR

The manufacturer shall provide a limited parts and labor warranty to the purchaser of the cab and chassis for a period of two (2) years or 24,000 miles, whichever occurs first. The warranty period shall commence on the date the apparatus is delivered to the original purchaser.

WARRANTY, CAB STRUCTURAL

The cab structure shall be warranted for a period of ten (10) years or one hundred thousand (100,000) miles which ever may occur first. The warranty period shall commence on the date the apparatus is delivered to original purchaser.

WARRANTY, BODY STRUCTURAL

There shall be a ten (10) year body warranty on each new fire body/heavy-duty rescue apparatus. The bodies are to be free of structural failures caused by defective design or workmanship for a warranty period of ten (10) years after the date on which the apparatus is first delivered to the original purchaser or 100,000 miles, whichever occurs first.

WARRANTY, CAB PAINT

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

WARRANTY, BODY PAINT/CORROSION

There shall be a five (5) year paint/corrosion warranty provided. This warranty shall cover perforation, blistering, peeling, or any other adhesion defects caused by defective manufacturing methods, or material selections, for a warranty period of

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five (5) years or 100,000 miles which occurs first after the date of which the apparatus is first delivered to the original purchaser.

WARRANTY, FRAME CORROSION

Ferrara Fire Apparatus, Inc. (the "Company") warrants to the original user-purchaser only of a Ferrara Fire Apparatus, Inc. chassis which, with the Company's application of Ferrara "F-Shield" and barring Purchaser's removal of "F-Shield" in all or in part, the frame and frame cross members shall be free of corrosion for the lifetime of the apparatus.

Ferrara Fire Apparatus, Inc. obligation under this warranty is strictly limited to replacing or repairing, as the Company may elect, any part or parts of such frame or frame members, which the Company's examination discloses to be defective in material or workmanship. This company reserves the right to require any such repairs to be made either at a Company owned service facility or another approved service facility at the Company's option. Transportation cost to and from the servicing location is the responsibility of the user- purchaser.

This warranty shall be null and void if the frame shows any evidence of grinding or sanding, alterations, cutting, splicing, welding or drilling of rails or flanges without the written authorization of Ferrara Fire Apparatus, Inc. and proper reapplication of "F-Shield". Further, this warranty shall be void if the apparatus shows signs of abuse, neglect, or evidence of being operated in a manner or purpose not recommended by Ferrara Fire Apparatus, Inc.

Nothing contained in this warranty shall make Ferrara Fire Apparatus, Inc. liable beyond the express limitations hereof; for loss, injury or damage of any kind to any person or entity resulting from any defeat or failure of the chassis.

WARRANTY, FRAME RAIL

The chassis frame and crossmembers shall be provided with a lifetime material and workmanship limited warranty to the original purchaser. The warranty shall cover the chassis frame and crossmembers as being free from defects in material and workmanship that would arise under normal use and service.

WARRANTY, MERITOR AXLE

FRONT AXLE

The front axle shall be warranted by Meritor for two (2) years with unlimited miles under the general service application.

REAR AXLE

The rear axle shall be warranted by Meritor for two (2) years with unlimited miles under the general service application.

WARRANTY, DIESEL ENGINE

The Cummins engine shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first.

WARRANTY, TRANSMISSION

The Allison EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty.

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WARRANTY, ANTI LOCK BRAKE SYSTEM

The ABS brake system shall be warranted for a period of three (3) years/300,000 miles.

WARRANTY, WATEROUS FIRE PUMP

Waterous warrants, to the original Purchaser only, that products manufactured by Waterous will be free from defects in material and workmanship under normal use and service for a period of five-(5) years from the date the product is first placed in service, or five and one-half-(5 1/2) years from the date of shipment by Waterous, whichever period shall be the first to expire; provided the Purchaser notifies Waterous, in writing, of the defect in said product within the warranty period, and said product is found by Waterous to be nonconforming with the aforesaid warranty.

WARRANTY, PLUMBING SYSTEM

There shall be a ten (10) year pump plumbing warranty provided. The warranty covers all plumbing components used in construction of the fire apparatus water/foam plumbing system against defects and workmanship, provided the apparatus is used in a normal and reasonable manner. The warranty is extended only to the original user-purchaser for a period of 10 years from the date of delivery.

WARRANTY, WATER TANK

The poly tank manufacturer warrants each tank to be free from manufacturing defects in material and workmanship for the service life of the original apparatus (apparatus must be actively used in fire suppression). The warrant is transferable, with written approval of the manufacturer. Each tank is inspected and tested for leaks prior to leaving the manufacturing facility. The tank shall be installed in the apparatus in accordance with the manufacturer's guidelines.

There are no warranties, expressed or implied, which extend beyond the description of the face hereof. There is no expressed or implied warranty of merchantability or a warranty of fitness for a particular purpose. Additional, this warranty is in lieu of all other obligations or liabilities on the part of the Manufacturer.

MANUAL, CHASSIS OPERATION

There shall be two (2) digital copies of the chassis operation manual provided with the chassis. The digital data shall include a parts list specific to the chassis model.

MANUALS, ENGINE AND TRANSMISSION OPERATION

There shall be two (2) printed hard copy sets of the engine operation manual and two (2) printed hard copy sets of the transmission operation manual specific to the model ordered included with the chassis.

MANUALS, APPARATUS BODY

The contractor shall supply, at time of delivery, at two (2) sets of complete operation and service documentation covering the completed apparatus as delivered and accepted.

The documentation shall address at least the inspection, service, and operations of the fire apparatus and all major components thereof.

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MANUALS, FIRE PUMP

There shall be two (2) copies of pump manuals provided to the Fire Department.

SAFETY GUIDE

One (1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide shall be provided with the completed apparatus.

WIRING DIAGRAMS, "AS BUILT" CAB/CHASSIS

There will be a complete digital set of "AS BUILT" electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color.

The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus.

These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics.

WIRING DIAGRAMS, "AS BUILT" APPARATUS BODY

There will be a complete set of "AS BUILT" electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color.

The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus.

These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics.

This document will refer the user to the appropriate drawing and page number and to sections of the drawing(s) by the means of letter and number coordinates. The schematic will show all harnesses used in the apparatus cab, chassis and body that is supplied by the chassis and body manufacturer.

Modifications to the manufactured standard harnesses are to be documented and properly indexed for quick identification.

A complete wire number, color, and function listing will accompany the schematics.

NFPA REQUIRED EQUIPMENT, FD SUPPLIED

The loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9 thru 5.9.4 shall be provided by the Fire Department unless it is listed in this proposal. All loose equipment shall be installed on the apparatus before placed in

Downers Grove Fire Department

Downers Grove, Illinois 60515

emergency service, unless the Fire Department authorized agent signs the State of Exception as listed in the NFPA 1901 Standard for Automotive Fire Apparatus sections 4.21 thru 4.21.2.

LADDER, 10' FOLDING

There shall be one (1) Alco-Lite Model FL-10, 10' folding ladder provided with the apparatus. The ladder shall be aluminum, single-section with rubber feet. The ladder shall meet or exceed the latest NFPA standards.

LADDER, 14' ROOF

There shall be one (1) Alco-Lite model PRL-14, 14' roof ladder supplied with the apparatus. The ladder shall be aluminum, single-section with folding steel roof hooks on one end and steel spikes at the other. The ladder shall meet or exceed the latest NFPA standards.

LADDER, 28' 2-SECTION EXTENSION

There shall be one (1) Alco-Lite model PEL-28, 28' two-section ladder supplied with the apparatus. The extension ladder shall be aluminum with steel spurs on one end. The ladder shall meet or exceed the latest NFPA standards.

30 DEGREE ELBOW(S) - 2-1/2" FNST X 2-1/2" MNST

There shall be two (2) Trident model 01.010.0 2-1/2" FNST x 2-1/2" MNST chrome plated elbow(s) supplied with the apparatus. The elbow(s) shall have a 30 degree turn down.

REDUCERS, 2-1/2" FNST X 1-1/2" MNST

There shall be four (4) Kochek model 37R2515, 2-1/2" FNST x 1-1/2" MNST reducers supplied with the apparatus.

CAPS, 1-1/2" NST

There shall be four (4) Trident model 01.005.0, 1-1/2" caps with chain provided with the apparatus.

WHEEL CHOCKS WITH BRACKETS

There shall be one (1) pair of Ziamatic model AC-32 wheel chocks with horizontal chock holders mounted on the apparatus body as directed by the fire department.

EQUIPMENT MOUNTING

Equipment supplied by the Fire Department will be mounted as directed by the Authorized Official of the Fire Department.

Equipment will be mounted by Ferrara Fire Apparatus.



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

Customer Proposal

Prepared for:

Mr. Vinnie Pasquinelli
Village Of Downers Grove

Prepared by:

THOMAS SULLIVAN
Office: 708-479-1100

Date: 10/12/2017

Vehicle: 2018 F-250 XL
4x4 SD Regular Cab 8' box 142" WB SRW

Quote ID: DGF250





Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

Mr. Vinnie Pasquinelli
Village Of Downers Grove

Re: Vehicle Proposal

Dear Mr. Pasquinelli,

Please Double Check Pricing and Equipment. This Proposal is the final build of the presented product and will be delivered accordingly. If changes are required please relay the necessary changes and we will update the proposal

Sincerely,

THOMAS SULLIVAN



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 F-250, SD Regular Cab
4x4 SD Regular Cab 8' box 142" WB SRW XL(F2B)
Price Level: 815 Quote ID: DGF250

Major Equipment

(Based on selected options, shown at right)

6.2L V-8 SOHC w/SMPI 385hp	Exterior:Oxford White
TorqShift-G 6 speed automatic w/OD	Interior:Medium Earth Gray
* Rear locking differential driver selectable	* 4-wheel ABS
* Brake assistance	* Traction control
* LT 245/75R17 E BSW AS S-rated tires	* Battery with run down protection
* Firm suspension	* Advance Trac w/Roll Stability Control
* Air conditioning	* Tinted glass
* AM/FM stereo with seek-scan	* Daytime running
* Dual power remote heated mirrors	* Variable intermittent wipers
* 17 x 7.5 steel wheels	* Dual front airbags w/passenger cancel
* Driver and front passenger seat mounted side airbags	* SecuriLock immobilizer
* Rear window defroster	* Tachometer
* Message Center	* Reclining front split-bench seats
* Side steps	* Steering-wheel mounted audio controls
* Class V hitch	* Front axle capacity: 6000 lbs.
* Rear axle capacity: 6200 lbs.	* Front spring rating: 5600 lbs.
* Rear spring rating: 6340 lbs.	* Frame section modulus: 10.7 cu.in.
* Frame Yield Strength 50000 psi	* Cab to axle: 56.1"

Fuel Economy

City
N/A



Hwy
N/A

Selected Options

MSRP

STANDARD VEHICLE PRICE	\$35,685.00
Order Code 600A	N/C
142" Wheelbase	STD
Monotone Paint Application	STD
50-State Emissions System	STD
Snow Plow Prep Package	\$185.00
Upfitter Switches (6)	\$165.00
Oxford White	N/C
Medium Earth Gray	N/C
Electronic-Locking w/3.73 Axle Ratio	\$390.00
Transfer Case & Fuel Tank Skid Plates	\$100.00
LED Roof Clearance Lights	\$95.00
Tailgate Step & Handle	\$375.00
Tough Bed Spray-In Bedliner	\$540.00
Fixed Rear-Window w/Defrost	\$60.00
Privacy Glass	\$30.00
Power Equipment Group	\$915.00
Extra Heavy-Duty 200 Amp Alternator	N/C
BoxLink	\$75.00
Advanced Security Pack	\$60.00
Platform Running Boards	\$320.00

Prices and content availability as shown are subject to change and should be treated as estimates only. Actual base vehicle, package and option pricing may vary from this estimate because of special local pricing, availability or pricing adjustments not reflected in the dealer's computer system. See salesperson for the most current information.

Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
 9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
 Office: 708-479-1100

2018 F-250, SD Regular Cab
 4x4 SD Regular Cab 8' box 142" WB SRW XL(F2B)
 Price Level: 815 Quote ID: DGF250

Daytime Running Lamps (DRL) (LPO)	\$45.00
Front Splash Guards/Mud Flaps (Pre-Installed)	\$130.00
Rear Splash Guards/Mud Flaps (Pre-Installed)	N/C
Exterior Backup Alarm (Pre-Installed)	\$140.00
Engine: 6.2L 2-Valve SOHC EFI NA V8 Flex-Fuel	Included
Transmission: TorqShift-G 6-Spd Auto w/SelectShift ..	Included
GVWR: 10,000 lb Payload Package	Included
Tires: LT245/75Rx17E BSW A/S (4)	Included
Wheels: 17" Argent Painted Steel	Included
HD Vinyl 40/20/40 Split Bench Seat	Included
Radio: AM/FM Stereo	Included
Accessory Delay	Included
Trailer Tow Mirrors w/Power Heated Glass	Included
Perimeter Alarm	Included
Power Locks	Included
Power Tailgate Lock	Included
Power Front Seat Windows	Included
Remote Keyless Entry	Included
<hr/>	
SUBTOTAL	\$39,310.00
Destination Charge	\$1,295.00

Prices and content availability as shown are subject to change and should be treated as estimates only. Actual base vehicle, package and option pricing may vary from this estimate because of special local pricing, availability or pricing adjustments not reflected in the dealer's computer system. See salesperson for the most current information.

Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
 By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 F-250, SD Regular Cab
4x4 SD Regular Cab 8' box 142" WB SRW XL(F2B)
Price Level: 815 Quote ID: DGF250

TOTAL	\$40,605.00
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Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
 9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
 Office: 708-479-1100

2018 F-250, SD Regular Cab
 4x4 SD Regular Cab 8' box 142" WB SRW
 XL(F2B)
 Price Level: 815 Quote ID: DGF250

Selected Options

Code	Description	MSRP
Base Vehicle		
F2B	Base Vehicle Price (F2B)	\$35,685.00
Packages		
600A	Order Code 600A	N/C
	Includes: - Engine: 6.2L 2-Valve SOHC EFI NA V8 Flex-Fuel Flex-Fuel badge on fleet orders only. - Transmission: TorqShift-G 6-Spd Auto w/SelectShift - 3.73 Axle Ratio - GVWR: 10,000 lb Payload Package - Tires: LT245/75Rx17E BSW A/S (4) - Wheels: 17" Argent Painted Steel Includes painted hub covers/center ornaments. - HD Vinyl 40/20/40 Split Bench Seat Includes center armrest, cupholder, storage and driver's side manual lumbar. - Radio: AM/FM Stereo Includes digital clock and 4-speakers.	
Powertrain		
996	Engine: 6.2L 2-Valve SOHC EFI NA V8 Flex-Fuel	Included
	Flex-Fuel badge on fleet orders only.	
44S	Transmission: TorqShift-G 6-Spd Auto w/SelectShift	Included
X3E	Electronic-Locking w/3.73 Axle Ratio	\$390.00
STDGV	GVWR: 10,000 lb Payload Package	Included
Wheels & Tires		
TD8	Tires: LT245/75Rx17E BSW A/S (4)	Included
64A	Wheels: 17" Argent Painted Steel	Included
	Includes painted hub covers/center ornaments.	
Seats & Seat Trim		
A	HD Vinyl 40/20/40 Split Bench Seat	Included
	Includes center armrest, cupholder, storage and driver's side manual lumbar.	
Other Options		
142WB	142" Wheelbase	STD
PAINT	Monotone Paint Application	STD
90L	Power Equipment Group	\$915.00

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Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
 By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
 9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
 Office: 708-479-1100

2018 F-250, SD Regular Cab
 4x4 SD Regular Cab 8' box 142" WB SRW
 XL(F2B)
 Price Level: 815 Quote ID: DGF250

Selected Options (cont'd)

Code	Description	MSRP
	<i>Deletes passenger-side lock cylinder. Includes upgraded door trim panel.</i> <i>Includes:</i> - Accessory Delay - Trailer Tow Mirrors w/Power Heated Glass <i>Includes manual telescoping, heated convex spotter mirror and integrated clearance lamps/turn signals.</i> - Perimeter Alarm - Power Locks - Power Tailgate Lock - Power Front Seat Windows <i>Includes 1-touch up/down driver/passenger window.</i> - Remote Keyless Entry	
473	Snow Plow Prep Package	\$185.00
	REQUIRES Extra Extra Heavy-Duty Alternator (67E) when ordered with Upfitter Switches (66S) and 110V/400W Outlet (43C). <i>Includes computer selected springs for snowplow application. NOTE: Restrictions apply; see Supplemental Reference or Body Builders Layout Book for details.</i>	
41P	Transfer Case & Fuel Tank Skid Plates	\$100.00
66B	BoxLink	\$75.00
76Z	Advanced Security Pack	\$60.00
	<i>Includes SecuriLock Passive Anti-Theft System (PATS) and inclination/intrusion sensors.</i>	
67D	Extra Heavy-Duty 200 Amp Alternator	N/C
18B	Platform Running Boards	\$320.00
592	LED Roof Clearance Lights	\$95.00
85G	Tailgate Step & Handle	\$375.00
85S	Tough Bed Spray-In Bedliner	\$540.00
	<i>Includes tailgate-guard, black box bed tie-down hooks and black bed attachment bolts.</i>	
43B	Fixed Rear-Window w/Defrost	\$60.00
924	Privacy Glass	\$30.00
66S	Upfitter Switches (6)	\$165.00
	REQUIRES Extra Extra Heavy-Duty Alternator (67E) when ordered with 110V/400W Outlet (43C) and Snow Plow Pkg. (473) or Snow Plow/Camper Pkg. (47B). <i>Located in overhead console.</i>	
587	Radio: AM/FM Stereo	Included
	<i>Includes digital clock and 4-speakers.</i>	
61S	Front Splash Guards/Mud Flaps (Pre-Installed)	\$130.00
	<i>Custom accessory.</i>	
62S	Rear Splash Guards/Mud Flaps (Pre-Installed)	N/C
	<i>Custom accessory.</i>	

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Currie Motors Frankfort Inc
 9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
 Office: 708-479-1100

2018 F-250, SD Regular Cab
 4x4 SD Regular Cab 8' box 142" WB SRW
 XL(F2B)
 Price Level: 815 Quote ID: DGF250

Selected Options (cont'd)

Code	Description	MSRP
76C	Exterior Backup Alarm (Pre-Installed) <i>Custom accessory.</i>	\$140.00
Fleet Options		
942	Daytime Running Lamps (DRL) (LPO) REQUIRES Valid FIN Code. <i>The non-controllable 942 Daytime Running Lamps (DRL) replace the standard Daytime Running Lamps (DRL). Includes on/off cluster controllable.</i>	\$45.00
Emissions		
425	50-State Emissions System	STD
Interior Colors		
AS_04	Medium Earth Gray	N/C
Primary Colors		
Z1_01	Oxford White	N/C
Upfit Options		
A-01	4-Corner LED Strobes	\$795.00
R-001	Rust Proofing and Sound Shield	\$395.00
P-01	Municipal Plates/Title-Shipped	\$203.00
SP-01	7-6' Western Snow Plow <i>Ultra Mount Design Steel Blade Plow Lights</i>	\$4,795.00
XL-001	XL Hybrid Quote # 2017-10DG	\$10,990.00
SUBTOTAL		\$56,488.00
Destination Charge		\$1,295.00
TOTAL		\$57,783.00

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Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
 By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
 9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
 Office: 708-479-1100

2018 F-250, SD Regular Cab
 4x4 SD Regular Cab 8' box 142" WB SRW
 XL(F2B)
 Price Level: 815 Quote ID: DGF250

Warranty - Standard Equipment & Specs

Warranty

Basic

Distance	36000 miles	Months	36 months
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Powertrain

Distance	60000 miles	Months	60 months
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Corrosion Perforation

Distance	Unlimited miles	Months	60 months
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Roadside Assistance

Distance	60000 miles	Months	60 months
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Prepared for: Mr. Vinnie Pasquinelli, Village Of Downers Grove
 By: THOMAS SULLIVAN Date: 10/12/2017



Currie Motors Frankfort Inc
9423 W Lincoln Hwy, Frankfort, Illinois, 604231388
Office: 708-479-1100

2018 F-250, SD Regular Cab
4x4 SD Regular Cab 8' box 142" WB SRW
XL(F2B)
Price Level: 815 Quote ID: DGF250

Pricing - Single Vehicle

	MSRP
<i>Vehicle Pricing</i>	
Base Vehicle Price	\$35,685.00
Options & Colors	\$3,625.00
Upfitting	\$17,178.00
Destination Charge	\$1,295.00
<i>Discount Adjustments</i>	
Discount	-\$13,641.00
Total	\$44,142.00

Customer Signature

Acceptance Date

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**2018 FORD F-250
XL 4X2 PICK UP
Contract# 142**



Currie Motors Fleet

“Nice People To Do Business With”

Your Full-Line Municipal Dealer
www.CurrieFleet.com



GOOD THRU March 17 2018



Currie Motors Frankfort
SPC Contract Winner
2018 FORD F-250
XL 4x2 PICK UP

Standard Package: \$20,596.00

Warranty 3 Years 36, 000 miles Bumper to Bumper/ 5 Years 60,000 Power train

6.2L 2 Valve Gasoline SOHC V-8
(Flex Fuel)

6-Speed Automatic w/ Select Shift

4-Wheel Disc Brakes

Front/Rear Black Painted Bumpers

Solar Tint Glass

Tailgate-Removable w/ Key Lock

3-Blink Lane Change Signal

Front Tow Hooks

Trailer Tow Package

Trailer Sway Control

17" Argent Steel Wheels

5 - LT245/75Rx17EBSW Tires

8' Bed Pickup Box Lamp

157 Amp Heavy Duty Alternator

650 CCA 72AH Battery

Oil minder System

Twin I-Beam Front Axle w. coil spring
suspension

H.D. Gas Shock Absorbers

Front Stabilizer Bar

Air Conditioner – Manual

Dome Lamp

AM/FM/Clock

Manual Door Locks & Windows

Intermittent Windshield Wiper

Advance Trac with Roll Stability Control

Driver and Passenger Front & Side

Airbag/Curtain

Passenger Side Deactivation Switch

Free delivery within 50 miles of dealership

Rear Camera displays in Rearview Mirror

GOOD THRU March 17 2018

**Options – Body Style**

<input type="checkbox"/>	Super Cab with 6 ¾' Bed	2370.00
<input type="checkbox"/>	Crew Cab with 6 ¾' Bed	3440.00
<input type="checkbox"/>	8' Bed on Super/Crew Cab	262.00
<input type="checkbox"/> 66D	Pick Up Box Delete (Spare Tire Optional)	-500.00

Options – Powertrain

<input checked="" type="checkbox"/>	6.2L V8 with 6-speed Automatic	N/C
<input type="checkbox"/>	6.7L OHV Power Stroke Diesel	8276.00
<input checked="" type="checkbox"/>	4x4- Includes Electronic Shift on the Fly	3033.00
<input checked="" type="checkbox"/>	Limited Slip Axle	359.00
<input type="checkbox"/> 98F	Gaseous Prep (does not include Conversion)	289.00
<input type="checkbox"/> 62R	PTO Provision	257.00
<input type="checkbox"/> 21M	Manual Locking Front Hubs-4x4 Only	N/C
<input type="checkbox"/> 41H	Engine Block Heater	83.00
<input type="checkbox"/>	Engine Idle Shut Down (N/A with reverse sensing) Duration	231.00
<input type="checkbox"/> 67B	Dual Extra Duty Alternators (requires Diesel Motor)	105.00
<input type="checkbox"/> 67E	Extra Heavy Duty Alternator	79.00
<input type="checkbox"/> 98R	Operator Command Regeneration (requires Diesel Motor)	231.00
<input type="checkbox"/>	Powertrain Care 3 Year 100,000 Warranty 4x2 Gasoline Motor	1,105.00
<input type="checkbox"/>	Powertrain Care 3 Year 100,000 Warranty 4x4 Gasoline Motor with Snow Plow Prep	1,940.00

Options – Wheels/Tires

<input type="checkbox"/>		
<input type="checkbox"/> TBK	LT245/75Rx17E BSW A/S (4x2)	STD
<input checked="" type="checkbox"/> TD8	LT245/75Rx17E BSW A/S Plus (4x4)	STD
<input type="checkbox"/> TBM	LT245/75Rx17E BSW A/T	152.00
<input type="checkbox"/> TDX	LT275/70Rx18E BSW A/T Plus (Requires 17S STX Appearance Pkg)	152.00
<input type="checkbox"/> 512	Full Size Spare with Box Delete	272.00
<input type="checkbox"/> 51X	Spare Tire Delete with Pickup	-73.00

Options – Functional

<input checked="" type="checkbox"/> 41P	Skid Plates-Not Available with 66D Box Delete	92.00
<input type="checkbox"/> 874	Ultimate Trailer Tow Camera System <ul style="list-style-type: none"> ▪ Rear View Camera ▪ Rear CHMSL Camera ▪ 360° Camera System ▪ Reverse Guidance Requires Power Equipment Group, XL Value Group, & SYNC 3	653.00

GOOD THRU March 17 2018



<input checked="" type="checkbox"/> 592	LED Roof Marker Lights	88.00
<input checked="" type="checkbox"/> 85G	Tailgate Step-N/A with 66D Box Delete	345.00
<input checked="" type="checkbox"/> 85S	Tough Bed Spray-In Liner- NA 66D Box Delete	496.00
<input checked="" type="checkbox"/> 43B	Rear Defroster (requires Privacy Glass and 90L Power Group)	56.00
<input checked="" type="checkbox"/> 924	Privacy Glass (requires 43B and 90L)	27.00
<input type="checkbox"/> 52B	Trailer Brake Controller	249.00

Options - Groups/Packages

<input type="checkbox"/> 96V	XL Value Package <ul style="list-style-type: none"> ▪ Cruise Control ▪ AM/FM/CD/Clock NA with 17S	663.00
<input type="checkbox"/> 17S	STX Appearance Package <ul style="list-style-type: none"> ▪ Bright Chrome Grille ▪ Chrome Front / Rear Bumpers ▪ STX Vent Badge ▪ 18" Sparkle Cast Aluminum Wheels (SRW Only) ▪ LT275/65Rx18E BSW Tires ▪ Speed Control 	1555.00
<input checked="" type="checkbox"/> 90L	Power Equipment Group <ul style="list-style-type: none"> ▪ Heated power mirrors with integrated clearance lamps/turn signals ▪ Perimeter Alarm ▪ Accessory Delay ▪ Power Windows/Locks/Tailgate Lock ▪ Remote Keyless ▪ Upgraded door trim <input type="checkbox"/> Regular Cab: <input type="checkbox"/> Crew/Super:	841.00 1035.00
<input type="checkbox"/> 17X	Fx4 Off Road Package <ul style="list-style-type: none"> ▪ Hill Descent Control ▪ Rancho Branded Shocks ▪ Transfer Case & Fuel Tank Skid Plates N/A with Pickup Box Delete Requires 4x4, All Terrain Tires and Locking Differential	368.00
<input checked="" type="checkbox"/> 473	Snow Plow Prep Package (Requires 4x4) <ul style="list-style-type: none"> ▪ Upgraded Front Springs ▪ Extra Heavy-Duty Alternator 	171.00
<input type="checkbox"/> 47B	Snow Plow/Camper Package <ul style="list-style-type: none"> ▪ Upgraded front springs for snow plow ▪ Extra Heavy Duty Alternator ▪ Rear Auxiliary Springs ▪ Rear Stabilizer Bar (SRW Only) ▪ Slide-In Camper Certification 	225.00
<input type="checkbox"/> 535	F250 Trailer Tow Package – High Capacity (Requires Diesel Motor) <ul style="list-style-type: none"> ▪ Increased GCW to 25700 LBS 	1039.00

GOOD THRU March 17 2018



	▪ Max Front Springs	
<input type="checkbox"/> 67H	Heavy Service Front Suspension – Heavy Service Front Springs	115.00

Options – Interior

<input type="checkbox"/> 43C	110V/400W Outlet	69.00
<input type="checkbox"/> 41A	Rapid Heat Supplemental Cab Heater (requires Diesel Motor)	231.00
<input type="checkbox"/> 18A	Up fitter Interface Module for PTO Programming	272.00
<input checked="" type="checkbox"/> 66B	Box Link – 4 Premium Locking Cleats N/A with Box Delete	69.00
<input checked="" type="checkbox"/> 76Z	Advanced Security Pack <ul style="list-style-type: none"> ▪ Securilock ▪ Passive Anti-Theft ▪ Inclination/Intrusion Sensors Requires 90L Power Equipment Group	56.00
<input type="checkbox"/> 66L	LED Box Lighting-NA with 873 CHMSL Rear Camera	56.00
<input type="checkbox"/> 53W	5 th Wheel Gooseneck Prep	460.00
<input checked="" type="checkbox"/> 18B	Platform Running Boards	<input checked="" type="checkbox"/> Regular Cab 295.00 <input type="checkbox"/> Super / Crew Cab 409.00

Options – Exterior

<input type="checkbox"/> 873	Rear CHMSL Camera-Displays in Center Stack (Requires XL Value Package or 585 AM-FM CD Radio)	184.00
<input type="checkbox"/> 76S	Remote Start (Requires Power Equipment Group)	231.00
<input type="checkbox"/> 76R	Reverse Sensing System-NA with 66D Box Delete	225.00
<input checked="" type="checkbox"/> 66S	Upfitter Switches	152.00
<input type="checkbox"/> 91M	SYNC System Requires AM/FM/CD	336.00
<input type="checkbox"/> 913	SYNC3 (Requires Ultimate Tow Camera)	415.00

Options – Fleet

<input type="checkbox"/> 17F	XL Décor Group-Includes Chrome Front/Rear Bumpers	203.00
<input type="checkbox"/> 525	Cruise Control	216.00
<input checked="" type="checkbox"/> 942	Daytime Running Lights	41.00
<input type="checkbox"/> 556	Driver Passenger Side Airbags/Curtain Delete N/A 10,000 LBS or Less GVWR-NA with 557	-180.00
<input type="checkbox"/> 557	Front Passenger & Side Airbags/Curtains delete N/A 10,000 LBS or Less GVWR –NA with 556	-180.00
<input type="checkbox"/> 585	AM/FM/CD (Required with SYNC)	253.00
<input type="checkbox"/> 87T	Ford Telematics	736.00

GOOD THRU March 17 2018

**Options – Accessories**

<input type="checkbox"/>	52R	Stow / Load Ramps-NA with 66D Box Delete	640.00
<input type="checkbox"/>	91S	LED Warning Strokes-NA with LED Box Light	621.00
<input type="checkbox"/>	85L	Drop-In Bed Liner-NA with 66D Box Delete	323.00
<input type="checkbox"/>	61M	Wheel Well Liner-NA with 66D Box Delete	165.00
<input type="checkbox"/>	85M	Bed Mat-NA with 66D Box Delete	139.00
<input checked="" type="checkbox"/>	61S	Front/Rear Splash Guards-NA with 66D Box Delete	119.00
<input checked="" type="checkbox"/>	76C	Back Up Alarm	128.00
<input checked="" type="checkbox"/>		Rustproofing & Undercoating	395.00
<input checked="" type="checkbox"/>		4 Corner Strokes (Requires Upfitter Switches)	795.00
<input type="checkbox"/>		8' Steel Service Body – White Finish	5,895.00
<input checked="" type="checkbox"/>		7'6" Western Snow Plow	4,795.00
<input type="checkbox"/>		7'6" Boss Snow Plow	4,795.00
<input type="checkbox"/>		Hand Held Controller (Requires Plow)	90.00
<input type="checkbox"/>		Snow Deflector	295.00
<input type="checkbox"/>		Detailed CD Rom Shop Manual	325.00
<input type="checkbox"/>		Delivery More than 50 Miles	185.00
<input checked="" type="checkbox"/>		License & Title – M Plates (Shipped)	203.00

Exterior

<input type="checkbox"/>			
<input type="checkbox"/>		Blue Jeans Metallic	
<input type="checkbox"/>		Race Red	
<input type="checkbox"/>		Shadow Black	
<input type="checkbox"/>		Magnetic	
<input type="checkbox"/>		Ingot Silver Metallic	
<input checked="" type="checkbox"/>		Oxford White	
<input type="checkbox"/>		Special Paint (minimum 5 units. No minimum for School Bus Yellow)	715.00

Interior

<input checked="" type="checkbox"/>		Steel 40/20/40 Vinyl	STD
<input type="checkbox"/>		Steel 40/20/40 Cloth	85.00
<input type="checkbox"/>		Steel 40/Console/40 Vinyl- No Armrest Included (Regular Cab Only)	303.00
<input type="checkbox"/>		Steel 40/Console/40 Cloth- No Armrest Included	438.00

GOOD THRU March 17 2018



Please enter the following:

Titling Information:

Contact Name

Vinnie Pasquinelli

Phone Number

630-434-5951

Purchase Order Number

Fleet Identification Number

Tax Exempt Number

Total Dollar Amount

Total Number of Units

Delivery Address

700 Curtiss Street

Downers Grove Il, 60515

***Orders Require Signed Original Purchase Order and Tax Exempt Letter**

*Currie Motors Fleet
9423 W. Lincoln Hwy
Frankfort, IL 60423
PHONE: (815)464-9200
Tom Sullivan Curriefleet@gmail.com
Kristen De La Riva Fleetcurre@gmail.com*

**Fleet Status is accessible by registering at www.fleet.ford.com. Please provide FIN Code at time of order*

GOOD THRU March 17 2018



GOOD THRU March 17 2018

2017

Hybrid Ford F-250 Quote



Village of Downers Grove, IL
10/2/2017



Date 10/2/2017

Quote # 2017-10DG

Expiration Date 11/2/2017

XL Hybrids
145 Newton St
Boston, MA 02135
Phone 978-496-5899
Fax 617-326-8614
david@xlhybrids.com

TO Vinnie Pasquinnelli
Fleet Services Manager
700 Curtis Street
Downers Grove II, 60515
Cell - 630-546-8084
Office - 630-434-5951
vpasquinnelli@downers.us

Salesperson	Upfit or Retrofit	Install Locations
David Breault	Upfit	Ship-thru

Qty.	Item #	Description	Unit Price	Line Total
1	X3-FDFX50F	XL3 Hybrid Electric Powertrain Conversion for Ford F-250 Truck, 6.2L gasoline engine, All cab/bed configurations, 4x4 or 4x2. - Includes XL Link™ wireless data collection unit for hybrid vans - Includes "Hybrid" (+ leaf) decals - Includes Installation Labor	\$10,990.00	\$10,990.00
	Note*	XL to provide ordering dealer with ship-thru codes for installation.		
Total				

To accept this quotation please return with completed purchase order or purchase order number to david@xlhybrids.com

Terms & Conditions

This is a quotation on the goods named, subject to the conditions noted below:

1. Pricing: Price is quoted in U.S. dollars and includes all hybrid system hardware and software. ~~Pricing does not include installation to be paid to installer.~~ This price is guaranteed if XL Hybrids receives a signed Quote or Purchase Order before quote expiration date.
2. Payment Terms: XL Hybrids will invoice after installation is complete. Customer will pay Net 15 days from date of invoice. Amounts not paid according to agreed-upon terms shall bear interest at the maximum rate permitted by law.
3. F.O.B. (Shipping) and/or Ship-Thru: F.O.B. charges for moving vehicles to / from installation location are the responsibility of the customer and are not included in this quote.
4. XL Hybrids Warranty: See attached XL Hybrids warranty for details.
5. OEM Warranty: The Original Equipment Manufacturer's vehicle warranty stays intact. XL Hybrids' products follow all OEM body builder guidelines. Customers can obtain regular OEM warranty service without any procedural changes. OEM service centers can contact XL Hybrids directly (via our toll free service number on the B pillar label) for any support required, and XL Hybrids will resolve any questions directly.
6. Taxes: This quote does not include federal or provincial sales, value added or other taxes as applicable by law. Purchaser is responsible for paying all required taxes. Non-profit, government, and tax exempt customers must provide XLH a valid sales tax exemption certificate or number before issuing Purchase Order.

PROPRIETARY & CONFIDENTIAL



Product Warranty Terms and Conditions

Contact Information:
XL Hybrids, Inc.
145 Newton Street
Boston, MA 02135
(866) 414-3212
Service@xlhybrids.com

Date: June 2015

1. Thank you for purchasing a hybrid conversion system from XL Hybrids, Inc. ("XLH") for use in commercial vehicles. XLH's hybrid conversion system is a parallel, charge-sustaining hybrid electric powertrain, which includes an electric motor, a motor controller, an energy storage pack, a hybrid controller, cooling circuitry, and integration hardware, and is referred to in these terms and conditions ("Terms") as the "Product".
2. XLH warrants to the end use customer (the "Customer") of the Product, that the Product, as installed on Customer's XLH-approved compatible vehicle, and all components of the Product, will be free of material or manufacturing defects (the "Warranty") during the Warranty Period (defined in Section 3). Customer's Warranty is contingent upon the terms contained herein. The Warranty is limited to the original purchaser of the Product and any subsequent bona fide purchaser of a vehicle on which the Product is originally installed.
3. The Standard Warranty Period commences on the Installation Date and continues until the earlier of either three (3) years from that date, or 75,000 miles (the "Standard Warranty Period") and there is no fee payable for the Standard Warranty Period. The Standard Warranty Period may be extended by the Customer at the time of Product purchase by paying the applicable fee for an extended warranty quoted by XLH at the time of Product purchase. The applicable Customer warranty period (i.e., whether standard or extended) is defined as the "Warranty Period".
4. If the Product does not meet the Warranty during the Warranty Period, and if Customer notifies XLH's customer service department of this by calling the phone number or using the email address in the header of this document, then XLH will, at XLH's expense, repair or replace the Product as soon as possible upon XLH's receipt of (1) a completed Warranty Claim Form (enclosed herein and available on XLH's website) within the Warranty Period; and (2) proof (to XLH's reasonable satisfaction) of the applicable Installation Date, and (3) proof (to XLH's reasonable satisfaction) of Customer's vehicle mileage at the Installation Date, and Customer's current vehicle mileage. In order to repair or replace the Product, Customer will need to bring the vehicle in which Product is installed to an XLH Authorized Repair Center near Customer. XLH reserves the right to perform the repair or replacement (either an "Assessment") at customer's placed of business. If after XLH or its designee has conducted an Assessment and if XLH or its designee determines that the Product meets the Warranty or that the claim does not comply with these Terms, then XLH may invoice Customer for a \$500 diagnostic fee. XLH's obligation to repair the Product means that XLH will use commercially reasonable efforts to repair the Product such that it meets the Warranty, at its own expense.
5. The Warranty only applies to the specific Product that is either accompanied by this document or registered and times-stamped in XLH's vehicle database, and not to any other product. The following circumstances will void the Warranty and are excluded from the Warranty: (i) the Product is used other than in accordance with the Product manual that accompanied Customer's purchase of the Product; (ii) the Product is installed, removed, modified, altered or repaired other than by an Authorized XLH Installer or Upfitter; (iii) the software, controls calibrations and/or component calibrations of the Product are modified; (iv) the Product becomes damaged or destroyed after installation due to collision damage, road debris, or acts of nature; (v) the Product is not supplied by XLH or an XLH Authorized Installer; (vi) the Product is installed on a non-XLH-approved vehicle make and/or model; (vii) negligence, theft or vandalism; or (viii) installation of the Product on a vehicle with an altered odometer, where an odometer has been altered after Product installation, or where an accurate mileage reading cannot be taken. The Warranty also excludes any representations or warranties made by XLH or any installer or upfitter that are not included within this document, and XLH does not authorize anyone to lengthen the Warranty Period or alter the Warranty or these Terms. For Product problems that occur after the Warranty Period, or for problems that are excluded from the Warranty, XLH will offer to repair the Product by charging XLH's standard hourly rate and Product component replacement prices as necessary.
6. THE WARRANTY IS THE EXCLUSIVE WARRANTY REGARDING THE PRODUCT, AND XLH MAKES NO OTHER WARRANTY WITH RESPECT TO THE PRODUCT OR ANY XLH SERVICES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR NON-INFRINGEMENT.
7. XLH's sole and exclusive liability and Customer's sole and exclusive remedy with respect to Product that fails to meet the Warranty, is repair or replacement as described in this document. There are no refund remedies. XLH may use new or remanufactured or refurbished parts when making Product repairs or replacements. A repaired or replaced Product is covered by the Warranty for the duration of the original Warranty Period only; Product repair or replacement does not extend its Warranty Period.
8. XLH shall not be liable for indirect, incidental, special, consequential or economic loss or damage (e.g. loss of time, loss of vehicle use, inconvenience, incurred transportation costs such as rental cars, lost business) under these Terms.
9. All Warranty repairs must be authorized by XLH or by an XLH Authorized Repair Center before the repairs are made as provided above.
10. If XLH asks Customer for relevant vehicle maintenance records, Customer must provide those prior to receipt of a Warranty repair authorization.