FRONT RANGE FIRE APPARATUS

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DUANE DOUCETTE
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PROPOSAL FOR FURNISHING FIRE APPARATUS

October 11, 2024

Town of Castle Rock
100 N. Wilcox Street
Castle Rock, CO 80104

The undersigned is prepared to manufacture for you, upon an order being placed by you, for final acceptance by Front Range Fire Apparatus., at its home office in Frederick, Colorado, the apparatus and equipment herein named and for the following prices:

One (1) Pierce Velocity 105' Ladder (HGAC FS12-23) **$1,998,969.00**
Per the attached proposal
Delivery is approximately 45.0 to 48.0 Months

Prepayment Options

Chassis Pre-Payment ($715,896.00)	**Deduct ($21,477.00)**
(3 months prior to delivery)	
Aerial Pre-Payment ($340,412.00)	**Deduct ($7,136.00)**
(2 months prior to delivery)	
100% Pre-Payment ($1,748,969.00)	**Deduct ($250,000.00)**
Due within Net 30 Days of signed contract	
	Total $ _____

Said apparatus and equipment are to be built and shipped in accordance with the specifications hereto attached, delays due to strikes, war, or intentional conflict, failures to obtain chassis, materials, or other causes beyond our control not preventing, within about 45.0 to 48.0 months after receipt of this order and the acceptance thereof at our office at Frederick, Colorado, and to be delivered to you Castle Rock, CO.

The specifications herein contained shall form a part of the final contract, and are subject to changes desired by the purchaser, provided such alterations are interlined prior t the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The proposal for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid, and with all National Fire Protection Association (NFPA) Guidelines for Automotive Fire Apparatus as published at the time of bid, except as modified by customer specifications. Any increased costs incurred by first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customers as an addition to the price set forth above.

Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible.

Pierce

FRONT RANGE
FIRE APPARATUS

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Persistent Inflationary Environment:

If the Producer Price Index of Components for Manufacturing [www.bls.gov Series ID: WPUID6112] ("PPI") has increased at a compounded annual growth rate of 5.0% or more between the month Pierce accepts our order ("Order Month") and a month 14 months prior to the then predicted Ready For Pickup date ("Evaluation Month"), then pricing may be updated in an amount equal to the increase in PPI over 5.0% for each year or fractional year between the Order Month and the Evaluation Month.

The seller will document any such updated price for the customer's approval before proceeding and provide an option to cancel the order.

FRONT RANGE FIRE APPRATUS.

By: _____
Duane Doucette
SALES REPRESENTATIVE

Option List

10/2/2024

Customer:	Castle Rock Fire Department	**Bid Number:**	1122
Representative	Doucette, Duane	**Job Number:**	
Organization:	Front Range Fire Apparatus, Ltd	**Number of Units:**	1
Requirements Manager:		**Bid Date:**	10/02/2024
Description:	2024 Aerial, 105' Ladder PUC-NG	**Stock Number:**	
Body:	Aerial, HD Ladder 105', PUC, Alum Body	**Price Level:**	50 (Current: 50)
Chassis:	Velocity Chassis, Aerials, Tandem, PUC-NG (Big Block)	**Lane:**	Lane 2

Line	Option	Type	Option Description	Qty
1	0766646		Boiler Plates, Aerial 105' HD Ladder Fire Department/Customer - Castle Rock Fire Department Operating/In conjunction W-Service Center - Operating Miles - 75 Miles Number of Fire Dept/Municipalities - 15 Bidder/Sales Organization - Front Range Fire Apparatus Delivery - Delivery representative Dealership/Sales Organization, Service - Front Range Fire Apparatus	1
2	0018180		Single Source Compliance, Aerials	1
3	0584456		Manufacture Location, Appleton, Wisconsin	1
4	0584452		RFP Location: Appleton, Wisconsin	1
5	0588609		Vehicle Destination, US	1
6	0028079		Match Not Required	1
7	0816491		Comply NFPA 1900 Changes Effective Jan 1, 2024, With Exceptions	1
8	0533351		Quint Fire Apparatus	1
9	0588612		Vehicle Certification, Aerial w/Pump	1
10	0681278		Agency, Apparatus Certification, Aerial w/Pump, U.L.	1
11	0816496		Certification, Vehicle Inspection Program, Snozzle, NFPA 1900	1
12	0536644		Customer Service Website	1
13	0620362		Consortium, HGAC	1
14	0537375		Unit of Measure, US Gallons	1
15	0030006		Bid Bond Not Requested	1
16	0816571		Performance Bond, 100% with 25% Warranty Bond, 1 Yr, and Payment Bond, PPI Terms	1
17	0000007		Approval Drawing	1
18	0002928		Electrical Diagrams	1
19	0888813		Velocity Chassis, Aerials, Tandem, PUC-NG (Big Block)	1
20	0000110		Wheelbase Wheelbase - 254.00"	1
21	0000070		GVW Rating GVW rating - 74,800 pounds	1
22	0000203		Frame Rails, 13.38 x 3.50 x .375, Qtm/AXT/Imp/Vel/DCF	1
23	0889469		Frame Liner, "C/Inv L" 12.50" x 3.00" x .25", AXT/Vel/Imp/Enf, 56" QVal	1
24	0508849		Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, Imp/Vel	1
25	0010427		Suspension, Front TAK-4, 22,800 lb, Qtm/AXT/Imp/Vel/Enf/SFR	1
26	0087572		Shock Absorbers, KONI, TAK-4, Qtm/AXT/Imp/Vel/DCF/Enf	1
27	0000322		Oil Seals, Front Axle	1
28	0899288		Tires, Front, Goodyear, Armor MAX MSA, 425/65R22.50, 20 ply, Fire Service Speed	1
29	0019611		Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot	1
30	0530479		Axle, Rear, Meritor RT50-160, 52,000 lb, Imp/Vel/DCF	1
31	0818720		Top Speed of Vehicle, 67 MPH/108 KPH, Non-NFPA/ULC 2024	1
32	0555354		Suspen, Rear, Hendrickson FMX 542 EX, Air Ride, 54,000 lb	1
33	0000485		Oil Seals, Rear Axle	1
34	0000483		Driver Controlled Differential Lock, Rear Axle, Tandem	1
35	0811055		Tires, Rear, Goodyear, Armor Max MSD, 12R22.50, LRH, Tandem	1
36	0019639		Wheels, Rear, Alcoa, 22.50" x 8.25", Aluminum, Hub Pilot, Tandem	1
37	0568081		Tire Balancing, Counteract Beads	1
38	0627984		Tire Pressure Monitoring, RealWheels, AirSecure, Valve Cap, Front Tires Only Qty, Tire Pressure Ind - 2	1
39	0801909		Lug Nut, Covers, Chrome	1
40	0003245		Axle Hub Covers w/center hole, S/S, Front Axle	1

Line	Option	Type	Option Description	Qty
41	0002045		Mud Flap, Front and Rear, Pierce Logo	1
42	0021931		Tire, "Crossfire" Air Pressure Equalization (tandem)	1
43	0601010		Chocks, Wheel, SAC-44-E, Folding, Aerials	1
			Qty, Pair - 01	
44	0601009		Mounting Brackets, Chocks, SAC-44-E, Folding, Horizontal, Aerials	1
			Qty, Pair - 01	
			Location, Wheel Chocks - Left Side Rear Tire, Forward	
45	0593759		ESC/ABS/ATC Wabco Brake System, Tandem Rear Axle	1
46	0030185		Brakes, Knorr/Bendix 17", Disc, Front, TAK-4	1
47	0509207		Brakes, Meritor, EX225, Disc Plus, Rear, Tandem Axle	1
48	0020784		Air Compressor, Brake, Cummins/Wabco 18.7 CFM	1
49	0000789		Brake Reservoirs, Five	1
			Paint Color, Air Tanks - Frame color	
50	0587034		Air Dryer, Bendix, AD-IP w/Heat, 2010	1
51	0000790		Brake Lines, Nylon	1
52	0000854		Air Inlet, w/Disconnect Coupling	1
			Location, Air Coupling(s) - a) DS Step Well, Forward	
			Qty, Air Coupling (s) - 1	
53	0004200		Hose, Air 25' length, w/air chuck	1
			Qty, - 1	
54	0649787	SP	All Wheel Lockup (Aerial/Tanker Chassis), Mux Sw	1
55	0014130		Air Tank, Additional for Extra Air Horn Capacity	1
			Paint Color, Air Tanks - Frame color	
56	0033413		Label, Chassis Air Tanks, Stick-On, Maximum of Seven **	1
57	0811976		Engine, Cummins X15, 565 hp, 1850 lb-ft, W/OBD, EPA 2027, Velocity, PUC-NG	1
58	0000000	STF	Engine Contingency Adjustment	1
59	0730808		Filters, Remote Mounted, Oil, Fuel, X15, VEL/AXT/Enf	1
60	0001244		High Idle w/Electronic Engine, Custom	1
61	0687994		Engine Brake, Jacobs Compression Brake, Cummins Engine	1
			Switch, Engine Brake - e) ISC/ISM/ISL9/ISX Hi Med Lo	
62	0552334		Clutch, Fan, Air Actuated, Horton Drive Master	1
63	0123135		Air Intake, w/Ember separator, Imp/Vel	1
64	0814375		Exhaust System, Horizontal, Right Side	1
			Exhaust, Diffuser - Aluminized Steel (Standard)	
			Exhaust, Material/Finish - Aluminized Steel (Standard)	
			Location, Diffuser Termination - 2.00" Past Rub Rail (Standard)	
			Tip, Exhaust - Straight Tip (Standard)	
65	0816171		Adapter, Exhaust, Nederman, for 6" or 7" Diffuser Outlet	1
			Location - The exhaust pipe will be brought straight out from under the body. The exhaust pipe will extend a maximum of 2.00" past the body side. The diameter of the diffuser will be 7.00".	
			Anchor Plate, Nederman - 1-Piece	
66	0787999		Radiator, Impel/Velocity	1
67	0511425		Cooling Hoses, Rubber **	1
68	0893382	SP	Fuel Tank, 65 Gallon, Left Side Fill, Aluminum, Common Door Triangular Shaped	1
69	0001129		Lines, Fuel	1
70	0618791		DEF Tank, 4.5 Gallon, LS Fill, Forward of Axle, Common Air Bottle Door	1
71	0723716		Fuel Priming Pump, Electronic, Automatic, Cummins, No Swt Req'd	1
72	0582243		Shutoff Valves, Fuel Line @ Primary Filter, Cummins	1
73	0553019		Cooler, Engine Fuel, Imp/Vel, SFR/Enf	1
74	0578959		Fuel/Water Separator, Racor Inline	1
75	0801890		Trans, Allison 6th Gen, 4500 EVS P, w/Prognostics, Imp/Vel/Enf	1
76	0633606		Transmission, Shifter, 6-Spd, Push Button, 4500 EVS, 5+1 Mode, AXT/Qtm/DCF/Enf	1
			Trans, ratio - 4500 EVS, 6Spd	
77	0517604		Transmission Programming, Park to Neutral, PUC	1
78	0684459		Transmission Oil Cooler, Modine, External	1
79	0535530		Mode, Downshift, Aggressive downshift to 2nd, w/engine brake, 6 speed	1
80	0001375		Driveline, Spicer 1810	1
81	0669988		Steering, Sheppard M110 w/Tilt, TAK-4, Eaton Pump, w/Cooler	1
82	0001544		Not Required, Steering Assist Cylinder on Front Axle	1
83	0509230		Steering Wheel, 4 Spoke without Controls	1

Line	Option	Type	Option Description	Qty
84	0690274		Logo/Emblem, on Dash	1
			Text, Row (1) One - Castle	
			Text, Row (2) Two - Rock	
			Text, Row (3) Three - Fire Rescue	
85	0790541	SP	Bumper, 10" Extended, Steel Painted, 12" High, Imp/Vel	1
86	0510226		Lift & Tow Package, Imp/Vel, AXT, Dash CF	1
87	0082252		Tow Eyes, Painted, Chicago Style, Top of Deck	1
			Paint Color, Predefined - Same color as frame	
88	0822915		Coating, Top Flange, Front Bumper, Outside Exterior, Rhino Lining, Black	1
89	0668313		Cab, Velocity FR, 7010 Raised Roof w/Notch, PUC	1
90	0724207		Engine Tunnel, X12-15, MX13, Foil Insulation w/Mech Fasteners, Velocity FR	1
91	0887600		Cab Insulation, Impel/Velocity FR	1
92	0677478		Rear Wall, Exterior, Cab, Aluminum Treadplate	1
93	0122466		Cab Lift, Elec/Hyd, w/Manual Override, Imp/Vel	1
94	0123176		Grille, Bright Finished, Front of Cab, Velocity	1
95	0002224		Scuffplates, S/S At Cab Door Jambs, 4-Door Cab	1
			Material Trim/Scuffplate - b) S/S, Brushed	
96	0646179		Trim, S/S, Rect Headlights, VEL/IMP	1
			Material Trim/Scuffplate - c) S/S, Polished	
			Turnsignal Covers - No Covers	
97	0087357		Molding, Chrome on Side of Cab	1
98	0521669		Mirrors, Retrac, West Coast Style, Htd/Rmt, w/Htd/Rmt Convex	1
99	0072189		Mirror, 8.00" Convex, Cab Front, Front Cross View	1
100	0667921		Door, Half-Height, Velocity FR 4-Door Cab, Raised Roof	1
			Key Model, Cab Doors - 751	
			Cab, Exterior Door Handle, Finish - 4-Door, Chrome/Black	
101	0655511		Door Panel, Brushed Stainless Steel, Impel/Velocity 4-Door Cab	1
102	0671014		Face Plate/s, Blank, Overhead, Imp/Vel, Dash CF	1
103	0667902		Controls, Electric Windows, All Cab Doors, Impel/Velocity FR	1
104	0512419		Electric Door Locks, Cab Doors, Imp/Vel	1
105	0555485		Steps, 4-Door Full Tilt Cab, Imp/Vel	1
106	0770194		Handrail, Exterior, Knurled, Alum, 4-Door Cab	1
107	0892637		Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step	1
			Color, Trim - Chrome Housing	
108	0005772		Fenders, S/S on cab, w/Radius corner, 2.00" wide	1
109	0660261		Grab Hole Red Webbed, Added to Front Cab Door Webstrap	1
110	0592071		No Windows, Side of Crew Cab, Vel/Imp	1
111	0568605		Not Required, Interior Trim, No Cab Side Windows	1
112	0012090		Not Required, Windows, Front/Side of raised roof	1
113	0509286		Not Required, Windows Rear of Crew Cab, Imp/Vel	1
114	0558334		Not Required, Trim, Cab Rear Windows, No Rear Windows	1
115	0786289		Window Tint, Crew Cab Door, Left Side, Medium Gray	1
116	0786285		Window Tint, Upper Crew Cab Door, Right Side, Medium Gray	1
117	0786278		Window Tint, Crew Cab Door, Right Side, Medium Gray	1
118	0786293		Window Tint, Upper Crew Cab Door, Left Side, Medium Gray	1
119	0650191		Mounting Only, Pike Poles Fire Hooks Unlimited, Hooks Nest 4/PAC Handlelok	2
			Location - rear of cab each side, as high and outboard as possible	
			Qty, - 02	
120	0778632	SP	Mounting Provisions, 3/16" Alum, Full Engine Tunnel, All Sides Flanged, Vel/Imp	1
			Mounting Provision Spacing - .75"	
			Material Finish, Cab Interior - Painted	
121	0748671		Cab Interior, Vinyl, Velocity FR, CARE	1
			Color, Cab Interior Vinyl/Fabric - Endure Vinyl - Silver/Gray	
122	0667943		Cab Interior, Paint Color, Impel/Velocity FR	1
			Color, Cab Interior Paint - i) fire smoke gray	
123	0509532		Floor, Rubber Padded Cab & Crew Cab, Imp/Vel, Dash CF	1
124	0741239		HVAC, Heavy-Duty, Impel/Velocity FR, CARE	1
			Paint Color, A/C Condenser - Painted to Match Cab Roof	
			HVAC System, Filter Access - Removable Panel	
			Auxiliary Cab Heater - Both	
125	0032085		Fans, Window Defrost, Two (2), Location Feature	1
			Location - each side on the overhead console	

Line	Option	Type	Option Description	Qty
126	0639675		Sun Visor, Smoked Lexan, AXT, Imp/Vel, SFR/Enf	1
			Sun Visor Retention - No Retention	
127	0548173		Grab Handles, Driver and Passenger Door Post, Imp/Vel	1
128	0012527		Lights, Engine Compt, (2), All Custom Chassis	1
129	0122516		Fluid Check Access, Imp/Vel	1
			Latch, Door, Storage - Lift and Turn Latch, Flush	
130	0657480		Box, Storage, Aluminum, Hinged Side, Latex Gloves	4
			Location - Next to driver and office in cab and on inside vertical surface of the rear facing EMS cabinets. see pictures of 30369 previous unit.	
			Qty, - 04	
131	0778167	SP	Map box, 4 bin/30 Deg Slant, Mount Vertical, Cup Holder, Storage, Qty	2
			Qty, - 02	
132	0583042		Side Roll and Frontal Impact Protection	1
133	0622619		Seating Capacity, 4 Belted Seats	1
134	0697008		Seat, Driver, Pierce PS6, Base, Air Ride, High Back, Safety, PRIMARY	1
135	0587668		Seat, Officer, Pierce PS6, Base, SCBA, Safety, PRIMARY	1
136	0510037		Radio Compartment, Below Officer Seat, Imp/Vel	1
137	0887714	SP	Cabinet, Rear Facing, LS, 24 W x 34 H x 30.5 D, Radius Sp Web, Ext Acc, Imp/Vel	1
			Light, Short Cabinet - Pierce, Interior, Right Side and Pierce, Interior, Left Side	
			Scuffplate, Material/Finish - S/S, Brushed	
			Material Finish, Shelf - Painted - Cab Interior	
			Shelf/Tray, Cabinet - (1) Shelf, Adjustable, 0.75" Up-Turned Lip	
			Door, Cab Exterior Cabinet - Double Pan, Non-Locking	
			Door, Exterior Stop - Web Strap	
			Louvers, Cabinet - 0-No Louvers	
138	0102783		Not Required, Seat, Rr Facing C/C, Center	1
139	0887715	SP	Cabinet, Rear Facing, RS, 21.5 W x 34 H x 26.5 D, Radius Sp Web, Ext Acc,Imp/Vel	1
			Light, Short Cabinet - Pierce, Interior, Right Side and Pierce, Interior, Left Side	
			Scuffplate, Material/Finish - S/S, Brushed	
			Material Finish, Shelf - Painted - Cab Interior	
			Shelf/Tray, Cabinet - (1) Shelf, Adjustable, 0.75" Up-Turned Lip	
			Door, Cab Exterior Cabinet - Double Pan, Non-Locking	
			Door, Exterior Stop - Web Strap	
			Louvers, Cabinet - 0-No Louvers	
140	0645433		Seat, Fwd Fcng C/C, LS Otbrd, Pierce PS6, Base, SCBA, Safety, 3" Inbrd,SECONDARY	1
141	0887713	SP	Cabinet, Forward Facing, Center, 32W x 39H x 24D, Roll, Imp/Vel PUC	1
			False Floor, EMS Cabinet - No False Floor	
			Light, Short Cabinet - Pierce, Interior, Right Side and Pierce, Interior, Left Side	
			Material Finish, Shelf - Painted - Cab Interior	
			Shelf/Tray, Cabinet - (1) Shelf, Adjustable, 0.75" Up-Turned Lip	
			Door, Cab Interior Cabinet - Rollup, Amdor, Anodized, Non-Locking	
			Louvers, Cabinet - 0-No Louvers	
142	0645431		Seat, Fwd Fcng C/C, RS Otbrd, Pierce PS6, Base, SCBA, Safety, 3" Inbrd,SECONDARY	1
143	0589269		Shelf, Adjustable, EMS Compt, .75" Lip	2
			Location - one in each rear facing cabinet	
			Qty, Shelf - 02	
144	0777157	SP	Console, Cup Holder and Open Storage, 14.50" L x 5.00" W x 3.00" H	2
			Location - Shipped loose	
			Qty, - 02	
145	0778628	SP	Tray, 250 lb Slideout, 1" Slides, Adj Height, 1 Lock	1
			Location - center forward facing EMS	
			Qty, - 1	
146	0778712	SP	Compt, Storage, (2) Forward Facing, Overhead, 9 W x 10 H x 14 D, Imp/Vel Notch	1
			Latch, Storage Compt - a) Non Locking	
			Light, Overhead Compt - Pierce, Horizontal Mounted	
147	0566653		Upholstery, Seats In Cab, Turnout Tuff	1
			Color, Cab Interior Vinyl/Fabric - c) Black	
148	0543991		Bracket, Air Bottle, Hands-Free II, Cab Seats	3
			Qty, - 03	

Line	Option	Type	Option Description	Qty
149	0603867		Seat Belt, ReadyReach	1
			Seat Belt Color - Red	
150	0604867		Seat Belt Height Adjustment, 4 Seats, Imp/Vel, Dash CF	1
151	0564727		Bracket, Helmet Holder, On Scene Talon	4
			Qty, - 04	
152	0647647		Lights, Dome, FRP Dual LED 4 Lts	1
			Color, Dome Lt - Red & White	
			Color, Dome Lt Bzl - Black	
			Control, Dome Lt White - Door Switches and Lens Switch	
			Control, Dome Lt Color - Lens Switch	
153	0896451		Enhanced Software for Cab and Crew Cab Dome Lts	1
154	0631776		Not Required, Overhead Map Lights	1
155	0727913		Spotlight, Golight/RadioRay, Model 20**4GT, LED, 2 Lts	1
			Location - each side of cab roof	
			Color, GoLt - White	
			Bracket, Spotlight - Pedestal - 2 Lts	
156	0650030		Controller, Spotlight, Golight, Wired Dash Mount, 2 Lts	1
157	0649967		Location, Spotlight Controller, Driver and Officer, 2 Lts	1
158	0804719		Handlts, (4) Streamlight, Fire Vulcan, 44451, C4 LED, Tail Lts, 12v, Orange	1
			Location, Portable Hand Light - one at officer, three at rear of engine tunnel	
159	0568369		Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocity 2010	1
160	0509511		Air Restriction Indicator, Imp/Vel, AXT, Dash CF, Enf MUX	1
161	0543751		Light, Do Not Move Apparatus	1
			Alarm, Do Not Move Truck - Pulsing Alarm	
162	0509042		Messages, Open Dr/DNMT, Color Dsply,	1
163	0611681		Switching, Cab, Membrane, Impel/Velocity/Quantum, Dash CF, AXT WiFi MUX	1
			Location, Emerg Sw Pnls - Driver's Side Overhead	
164	0555915		Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocity	1
165	0002565		Hourmeter, Aerial Inside Cab	1
166	0002615		Switch, Aerial 12V Master	1
167	0002617		PTO switch, w/light - aerial	1
168	0820897		Wiring, Spare, 15 A 12V DC, Batt Dir, 2nd NFPA1900/ULC	1
			Location, Wiring - in crew cab tucked under seat riser	
			12vdc power from - Battery direct	
			Wire termination - Butt Splice	
169	0820894		Wiring, Spare, 15 A 12V DC, Batt Dir, 1st NFPA1900/ULC	1
			Location, Wiring - front of cab under instrument pane	
			12vdc power from - Battery direct	
			Wire termination - Butt Splice	
170	0821232		Wiring, Spare, 20 A 12V DC, 6 Circuit Fuse Block, Blue Sea 5025 2nd NFPA1900/ULC	1
			Qty, - 01	
			12vdc power from - Ignition power	
			Location - inside passenger EMS compartment to be located at pre-construction.	
171	0821194		Wiring, Spare, 20 A 12V DC, Batt Dir, 2nd NFPA1900/ULC	1
			Location, Wiring - inside passenger side EMS compartment to be located at pre-construction	
			12vdc power from - Battery direct	
			Wire termination - Butt Splice	
172	0821226		Wiring, Spare, 2.0 A 12V DC, USB Term Blue Sea 1016 Batt Dir 1st NFPA1900/ULC	4
			Qty, - 04	
			12vdc power from - Battery direct	
			Location - officer dash area #132 and driver dash area panel location #8 with mirror controls 1 each side between the driver and passenger forward facing seat and EMS cabinet on rear wall just a little above the seat riser height.	
173	0820904		Wiring, Spare, 15 A 12V DC 1st NFPA1900/ULC	2
			Qty, - 02	
			12vdc power from - Battery switched	
			Wire termination - Butt Splice	
			Location, Spare Wiring - two in the front of cab under instrument panel and one in the crew cab tucked in seat riser	

Line	Option	Type	Option Description	Qty
174	0821312		Wiring, Spare, 30 A 12V DC Batt Dir 1st NFPA1900/ULC	1
			Location, Wiring - center forward facing EMS cabinet on back wall near floor	
			12vdc power from - Battery direct	
			Wire termination - 10-Place Bus Bar w/Cover	
175	0821191		Wiring, Spare, 20 A 12V DC, Batt Dir, 1st NFPA1900/ULC	1
			Location, Wiring - in electrical distribution box on the engine tunnel	
			12vdc power from - Battery direct	
			Wire termination - Stud	
176	0511495		Switch Panel Label, Fill in the Blank Text, Made by Pierce	2
			Qty, - 02	
			Fill in Blank - Change the Clear Master switch wording to Clear Disable" Change the Rear Flashing Switch to "Rear Disable"	
			Label, text - "Clear Disable" & "Rear Disable"	
177	0566101		Recess, Dash Panel, Officer Side, Vel/Imp	1
178	0814201		Vehicle Information Center, 7" Color Display, Touchscreen, MUX, CL714	1
			System Of Measurement - US Customary	
179	0816633		Collision Mitigation, HAAS Alert (R2V), HA7	1
			Subscription, HAAS R2V - R2V - 5 Year Data Plan Subscription	
180	0606247		Vehicle Data Recorder w/CZ Display Seat Belt Monitor	1
181	0735006		Intercom, David Clark, 4-Pos, 2-Radio, (D, O, RPTT), 2obC, U3805	1
			Location - driver and officer positions, see picture	
182	0637058		David Clark Universal Radio Interfaces Included with Single/Dual System	1
			Location, Radio Interface - center overhead position	
183	0597914		Headset, David Clark, H3442 Under Helmet, Flex Mic	4
			Qty, - 04	
			Location - driver, officer and crew cab	
184	0645581	SP	Bracket, Remote Two-way Radio Heads in Switch Area	3
			Location - Shipped loose with the unit	
			Qty, - 03	
			Radio, First Two-Way Model - · Motorola APX mobile 05	
			.	
			.	
			Location 2 - Shipped loose with the unit	
			Radio, Second Two-Way Model - ·	
			· VHF KNG-M150R remote head & ·	
			.	
			· VHF GMH remote head	
			Radio, First Two-Way Make - Motorola High Power	
			Radio, Second Two-Way Make - Bendix King	
185	0505836		Antenna Mount, Custom Chassis, Maxrad BMATM, Location Feature	2
			Location - one each side of cab roof just to the rear of the lightbar	
			Qty, - 02	
			Location, Antenna Cable - officer seat box	
186	0653519		Camera, Pierce, LS Mux, RS, LS, R, Cameras, SD	1
			Camera System Audio - Not Provided	
187	0814861		Camera, Switcher, Pierce, 4 channel, AHD, CVBS	1
188	0896458		Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT	1
			Color, Antenna - Black Antenna	
			Module Housings - Black Housing with Power and Status Ind	
189	0816093		ClearSky Telematics, Remote Fleet & On-scene Management, AT&T Commercial	1
			Subscription, Telematics - 3 Year Subscription	
190	0730603		Electrical System, Velocity ESP, Cummins, Paccar	1
191	0896456		Prognostics, Electrical System	1
192	0079211		Batteries, (6) Stryten/Exide Grp 31, 950 CCA each, Threaded Stud	1
193	0008621		Battery System, Single Start, All Custom Chassis	1
194	0123174		Battery Compartment, Imp/Vel	1
195	0812586		Charger, Sngl Sys, Kussmaul, Chief 091-266-12-60, 60 Amp	1

Line	Option	Type	Option Description	Qty
196	0814935		Location, Cab, Charger, EMS Compt, Vertical Wall, LS	1
197	0811943		Panel, Remote Control, Kussmaul, Chief 091-266-RCP	1
198	0814942		Location, Cab, Ind/Remote, Driver's Seat with Bracket	1
199	0016857		Shoreline, 20A 120V, Kussmaul Auto Eject, 091-55-20-120, Super	1
			Qty, - 01 Color, Kussmaul Cover - b) red Shoreline Connection - the battery charger and the six place outlet in the crew cab	
200	0026800		Shoreline Location	1
			Location, Shoreline(s) - driver seat riser match customers previous unit 29657	
201	0783395		Transfer Switch, Generator to Shoreline 30 Amp and Under	1
202	0647728		Alternator, 430 amp, Delco Remy 55SI	1
203	0092582		Load Manager/Sequencer, MUX	1
			Enable/Disable Hi-Idle - e)High Idle enable	
204	0783153		Headlights, Rect LED, JW Spkr Evo 2, AXT/DCF/Enf/Imp/Sab/Vel **	1
			Color, Headlight Bez - Chrome Bezel	
205	0648425		Light, Directional, Wln 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts, Imp/Vel/AXT/Qtm	1
			Color, Lens, LED's - m)match LED's	
206	0620054		Light, Directional/Marker, Intermediate, Weldon 9186-8580-29 LED 2lts	1
207	0648074		Lights, Clearance/Marker/ID, Front, P25 LED 7 Lts	1
208	0511569		Lights, Clearance/Marker/ID, Rear, P25 LED 7Lts	1
			Light Guard - Without Guard	
209	0514453		Light, Marker End Outline, Rubber Arm, LED Marker Lamp	1
			Location, Lights - rear lower corners of body each side Qty, Lights, Pair - 1	
210	0804514		Lights, Tail, Wln M62BTT* Red Stop/Tail & M62T* Amber Dir Arw For Hsg	1
			Color, Lens, LED's - Match Flash Pattern, Directional Lts - Steady On (Arrow)	
211	0806466		Lights, Backup, Wln M62BU, LED, For Tail Lt Housing	1
212	0664466		Bracket, License Plate & Light, Weldon 9186-23882-30 Incand, Temp Under Tailbrd	1
			Location - driver side	
213	0556842		Bezels, Wln, (2) M6 Chrome Pierce, For mtg (4) Wln M6 lights	1
214	0827291		Alarm, Back-up Warning, Wln BU112HL	1
215	0769569		Lights, Perimeter Cab, Amdor AY-LB-12HW012 LED 4Dr	1
216	0769572		Lights, Perimeter Pump House, Amdor AY-LB-12HW020 LED 2lts	1
217	0765941		Lights, Perimeter Body, Amdor AY-LB-12HW012 LED 2lts, Turntable Access	1
			Control, Perimeter Lts - DS Switch Panel and Parking Brake Applied	
218	0896454		Enhanced Software for Perimeter Lts	1
219	0557322		Lights, Step, P25 at Rear Tailboard, PUC, 4lts Perm Lts	1
220	0696870		Lights, Side Scene, TecNiq, E960 LED, Stainless 1st Pr	1
			Location, Lights - near rear wheels each side Qty, Lights, Pair - 1 Switch, Lt Control 1 DC,1 - a) DS Switch Panel Switch, Lt Control 2 DC,2 - e) No Control Switch, Lt Control 3 DC,3 - E Master and Reverse Switch, Lt Control 4 DC,4 - d) No Control	
221	0679615		Bracket, Alum. Trdplate, 12V Surface Mounted Flood Lights, Compt Top, Each	2
			Location - above LS2 and RS2 body compartments Qty, - 02	
222	0618234		Light, Visor, Wln, 12V PSL2* Pioneer LED Spotlt 1st	1
			Qty, - 01 Location, driver's/passenger's/center - Centered Switch, Lt Control 1 DC,1 - a) DS Switch Panel Switch, Lt Control 2 DC,2 - g) PS Switch Panel Switch, Lt Control 3 DC,3 - d) No Control Switch, Lt Control 4 DC,4 - d) No Control Color, Wln Lt Housing - White Paint Light, Visor, Flash - Steady Burning	
223	0768061		Lights, Wln, PCPSM2* Pioneer, 12 VDC, 1st	1
			Location - behind driver side cab door, high as possible Qty, - 01 Color, Wln Lt Housing - Chrome Cover Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS	

Line	Option	Type	Option Description	Qty
224	0768059		Lights, Wln, PCPSM2* Pioneer, 12 VDC, 2nd	1
			Location - behind passenger side cab door, high as possible Qty, - 01 Color, Wln Lt Housing - Chrome Cover Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS	
225	0763608		Lights, Wln, PCPSM2*, Pioneer, 12 VDC, 2nd	1
			Location - passenger side rear body above RS2 Qty, - 01 Color, Wln Lt Housing - Chrome Cover Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS	
226	0763610		Lights, Wln, PCPSM2*, Pioneer, 12 VDC, 1st	1
			Location - driver side rear body above LS2 Qty, - 01 Color, Wln Lt Housing - Chrome Cover Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS	
227	0631374		Lights, Deck, Wln (2) MPPBCS Micro Pioneer LED Rear Flood Lights	1
			Control, Scene Lts - Park Brake and Sw Included on Light	
228	0645676		Lights, Not Required, Hose Bed, Deck Lights At Rear	1
229	0726731	SP	Lights, Hose Bed, Not Req, Deck Lts	1
230	0645681		Lights, Not Required, Rear Work, Deck Lights At Rear	1
231	0709438		Lights, Walk Surf, FRP Flood, LED	1
232	0753285		Switch, White Warning Lights, Front	1
			Function Reset - Off	
233	0552526		Aerial, HD Ladder 105', PUC, Alum Body	1
234	0554269		Body Skirt Height, 18"	1
235	0694710		Tank, Water, 400 Gallon, Poly, Ascendant Tandem, PAL, PAP, Notched, PUC	1
236	0552049		Overflow, 4.00" Water Tank, Poly, Special Routing	1
237	0028104		Foam Cell Required	1
238	0553729		Not Required, Restraint, Water Tank, Heavy Duty	1
239	0003429		Not Required, Direct Tank Fill	1
240	0751577		Hose Bed, Aluminum, Trough Style, 2G Aerial	1
			Location, driver's/passenger's/center - Right Side Door, Material & Finish, Access - polished stainless steel Latch, Door, Access - lift and turn latch	
241	0723547		Painted Hose Bed/Cargo Area	1
			Paint Color, Hose Bed Interior - Match Lower Body	
242	0003492		Hose Bed Capacity, Special Amount, Ascendant, 100AAT, PAP, PAL	1
			Capacity, Hosebed - 800' of 5.00"	
243	0591017		Hose Restraint, Hose Bed, Aerial, Front Velcro Strap, Top	1
244	0770513	SP	Divider, Fixed, In Hose Bed, To Stablize Hose Load **	1
245	0770525	SP	Hose Tray, Aluminum, Hose Storage, Removeable, Hose Chute Compartment, PAL/PAP **	1
			Location - DS compartment in place of the hose chute.	
246	0581819		Hose Restraint, Hose Bed, Vinyl, Top, Aerial	1
			Color, Vinyl Cover - a) red Type of fastener - Velcro - Sides of Hosebed Type of fastener, Front - Velcro - Front Hosebed	
247	0532261		Running Boards, PUC, Aerials	1
248	0735733		Turntable Steps-Morton Cass, Swing Down,LS/RS,Ascend TA,PAL,PAP,Handhld Cut Outs	1
			Step, Flip - No Flip Step	
249	0892656		Lights, Step (6), P25 LED, Each Side	1
			Control, Scene Lts - Aerial master Color, Trim - Chrome Housing	
250	0690023		Wall, Rear, Smooth Aluminum	1
251	0029503		Tow Eyes (2), Painted Lower Job Color, Aerial	1
252	0013641		Construction, Compt, Alum, Ascendant Tandem, PAL	1
253	0778631	SP	Compt,DS F/H F/D,Lap Drs,w/o Chute,w/FlushReel,Hat,Ascend TA,105', 100 HAL	1
254	0063692		Compt, LS Turntable, F/H F/D, Lap Drs, Ascendant Tandem, 105 HDL	1
255	0023672		Compt, IPO Stairs, Not Required, LS	1
256	0778641	SP	Compt, PS F/H F/D Frt, Lap Drs,Flush Reel,Ascend TA,105,100 HAL	1
257	0063719		Compt, RS Turntable, F/H, Lap Drs, Ascendant Tandem, 105 HDL	1
258	0023673		Compt, IPO Stairs, Not Required, RS	1

Line	Option	Type	Option Description	Qty
259	0666813		Doors, Lap/Amdor Rollup, Aluminum, Side Compartments	2
			Qty, Door Accessory - 02	
			Color, Roll-up Door - AMDOR Painted to Match Lower Body	
			Latch, Roll-up Door - Non-Locking Liftbar	
260	0552955		Blister, Compts in Front of Rear Axle, To Clear Firemaax Suspension	1
261	0555343		Bumper, Rear, 8" w/Treadplate Cover,Notch,Angled Corners,Ascendant Tand,RMAP,PAL	1
262	0505888		Keyed Locks for Latches, Lap Doors (#751 Lock)	9
			Qty, Door Accessory - 09	
			Location, Door Accessory - body compartment doors	
263	0732709		Pull Strap for Rollup Doors, Special Length	2
			Qty, Door Accessory - 02	
			Location, Door Accessory - Over the wheel well compartments.	
			Color, Strap - Black	
			Length, Pull Strap - 14.00"	
264	0084013		Scuffplate, S/S, 8.00" H, Inside Compartment Door	2
			Qty, Door Accessory - 02	
			Location, Door Accessory - RS1 and RS4	
			Material Trim/Scuffplate - c) S/S, Polished	
265	0778349	SP	Door, Aerial Override Controls, Polished S/S	1
266	0603083		Lights, Compt,Pierce LED,Dual Light Strips,Each Side Dr,Ascend TA,75'HAL,PAP,HDL	9
			Qty, - 09	
			Location, Compartment Lights - All Body Compts	
267	0689538		Lights, Compt, Pierce, LED Light Strip, 54", Additional	1
			Location, Lights - installed by the hinge side of the on the door over the crosslay.	
			Qty, - 01	
268	0547994		Lights, Wln, 20C0CDCR LED 4.00", Surface Mount, in Compt, Qty	1
			Location, Lights - Installed in place of the 6" standard round incandecent light in the ladder storage compartment	
			Qty, - 01	
269	0603420		Shelf Tracks, Painted, Aerial	9
			Qty, Shelf Track - 09	
			Location, Shelf Track - LS1, LS1 Upper, LS2, LS3, RS1, RS1 Upper, RS2, RS3 and RS4	
270	0600289		Shelves, Adj, 500 lb Capacity, Full Width/Depth, Predefined Locations, Aerial	10
			Qty, Shelf - 10	
			Material Finish, Shelf - Painted - Spatter Gray	
			Location, Shelves/Trays, Predefined - RS1-Transition Point, RS4-Centered, RS4-Lower Third, RS6-Upper Third, RS4-Upper Third, RS1-Upper Third, LS1-Lower Third, LS4-Lower Third, LS4-Upper Third and LS1-Upper Third	
271	0709692		Tray, 215 lb, Tilt/Slide-Out, 30 Deg, Adj, Predefined Locations	1
			Qty, Tray (slide-out) - 01	
			Location, Shelves/Trays, Predefined - LS3-Centered	
			Material Finish, Tray - Painted - Spatter Gray	
272	0646221		Tray, Floor Mounted, Slide-Out, 500lb, Special Side Height, 2G	2
			Qty, - 02	
			location - P1 and P4	
			Material - paint to match compt interior	
			Tray, Side Height, Front - 2"	
			Tray, Side Height, Rear - 2"	
			Tray, Side Height, Right & Left - 2"	
273	0726457		Partition, Vertical Compt, Predefined Locations	1
			Qty, Partition - 01	
			Location, Partition/Toolboard, Predefined - RS6- 10.00" From Forward Door Frame	
			Material Finish, Partition - Painted - Spatter Gray	
274	0827942	SP	Compt, Top of Compt, Hatch Style, Alum Treadplate, Three (3) Doors, Reel	1
			Qty, - 01	
			Location, driver's/passenger's/center - Left & Right	
			Depth - 14.00"	
			Compt Installation - Bolt-In, Treadplate	
			Light, Compt - Pierce LED	
			Length, Aerial Compt Boxes - 116.00" long	

Line	Option	Type	Option Description	Qty
275	0777473	SP	Compt, IPO Chute, Rear Access, Tandem Axle, Polished S/S Door	1
			Location - rear hose chute doors	
			Qty, - 1	
276	0778642	SP	Box,Storage,Top of Body Compt,Hatch Style,116"L,Alum,Reel Access, LEDLt	1
			Location - on top of the driver side body	
			Qty, - 01	
			Width - 24.00"	
			Depth - 14.00"	
277	0770514	SP	Modify Notch Shelf for Electric Covers At Mid Inspection **	1
278	0569283	SP	Access Panel, Removable, Qty, Location	1
			Location - Make the access panel in the P6 compartment two piece so that the back half can be removed with out removing the vertical partiton	
			Qty, - 01	
279	0004016		Rub Rail, Aluminum Extruded, Side of Body	1
280	0802978		Fender Crowns, Rear, S/S, w/Removable Fender Liner, Aerial, 2G, Two Pair	1
			Material Finish, Fender Liner - Painted Aluminum Lower Body	
281	0519849		Not Required, Hose, Hard Suction	1
282	0527021		Handrails Located @ Front Body	1
283	0805074	SP	Compt, (1) Air Bottle, (2) Exting, Between Tandem, Bolt-In, Aerial	2
			Qty, - 02	
			Door Finish, Fender Compt - Polished	
			Location, Fender Compt - LS and RS	
			Latch, Air Bottle Compt - Flush Lift & Turn, Pair	
			Door Type - drop down with support cable	
284	0810112	SP	Compt,Air Bottle w/DEF,Tri Dr,Single,Strap,8.50" Round,Fdr Pnl,Bolt-In,TA Aerial	1
			Door Finish, Fender Compt - Polished	
			Latch, Air Bottle Compt - Flush Lift & Turn	
			Insert, Air Bottle Compt - Rubber Matting	
285	0804448		Compt, Extinguisher, Fender, 9.00" Square, Bolt-In, Tandem Aerials	3
			Qty, - 03	
			Door Finish, Fender Compt - Polished	
			Location, Fender Compt - Single - LS Fwd, Single - RS Fwd and Single - RS Rear	
			Latch, Air Bottle Compt - Flush Lift & Turn	
			Insert, Air Bottle Compt - Rubber Matting	
286	0805720		Compt, Extinguisher, Fender,9.00" Sq,Common Fuel Tri Door,Bolt-In,Tandem Aerials	1
			Qty, - 01	
			Door Finish, Fender Compt - Polished	
			Location, Fender Compt - Single - LS Rear - Fuel Fill Combo - Triangular Dr	
			Latch, Air Bottle Compt - Flush Lift & Turn	
			Insert, Air Bottle Compt - Rubber Matting	
287	0646108		Holder, Air Bottle, Zico Model UH-5-30-3-SFPHS, Mounted in Compt w/Tracks	1
			Qty, Bracket - 01	
			Location, Bracket/comp. - mounted in P5 to be located at pre-construction.	
288	0004218		Ladder, 35' Duo-Safety 1200A 2-Sect	2
			Qty, - 02	
289	0064226		Ladder, 24', Duo-Safety 900A 2-Section	1
			Qty, - 1	
290	0010406		Ladder, 28' Duo-Safety 1200A 2-Section	1
			Qty, - 1	
			Location, Extension Ladder - torque box	
291	0024232		Ladder, 16' Duo-Safety 875A Roof	1
			Qty, - 1	
292	0056478		Ladder, 14' Duo-Safety 775A Roof	1
			Qty, - 1	
293	0792683	SP	Ladder, Roof, Provided by Dealer, Multi-Select Feature	2
			Qty, - 02	
			Roof Ladder, Make/Model, Multi-Select - 14' Duo-Safety 775-A and 16' Duo-Safety 875-DR Special Width	
294	0639629		Ladder, 16' Duo-Safety 875A-DR Roof, 16" Width, Non-NFPA Compliant	1
			Qty, - 01	
295	0024233		Not Required, Attic Extension Ladder	1

Line	Option	Type	Option Description	Qty
296	0004246		Ladder, 10' Duo-Safety Folding, 585A	1
			Qty, - 01 Location, Folding Ladder Aerial - torque box	
297	0784892		Ladders in Torque Box, Dbl Lap Drs, Free Door Lock,Door Grabbers,Ascend/PAL/PAP	1
298	0602100		Lights, Torque Box Ladder Storage, Pierce LED Strip Lights, 2 Lts	1
299	0658169		Ladders, Nested, Left Side Ground Ladder Storage	1
300	0658170		Ladders, Nested, Right Side Ground Ladder Storage	1
301	0008911		Pike Pole, 12' Fire Hooks Unlimited, Fiberglass, APH-12, Gas Shut Off	2
			Qty, - 02 Location - in the ground ladder compartment	
302	0567897		Pike Pole, 8' Fire Hooks Unlimited, New York Roof Hook, Steel, Pry End, RH-8	2
			Qty, - 02 Location - torque box	
303	0552649		Pike Pole, 6' Fire Hooks Unlimited, New York Roof Hook, Steel, Pry End, RH-6	3
			Qty, - 03 Location - rear of cab each side as high as possible outboard and one in the torque box	
304	0014343		Not Required, Pike Pole, 3'	1
305	0770578		Pike Pole Tubes, in Torque Box/Ladder Storage, ABS	5
			Qty, - 05	
306	0024388		No Steps Required, Front Of Body	1
307	0553873		Pump Operators Panel & Module, Aluminum, Control Zone, Ascendant/PAL/ PAP PUC Special height passenger side	1
308	0520016		Not Required, Pump house Structure, PUC	1
309	0889385		Pump, Pierce, 1500 GPM, Single Stage, PUC-NG	1
310	0515822		Seal, Mechanical, Silicon Carbide, PUC Pump	1
311	0802234		Gear Case, Integrated Pump Transmission, PUC-NG, Cummins	1
312	0501370		Pumping Mode, Stationary Only, No Cab Gauges, PUC	1
313	0515829		Pump Shift, Sure-Shift	1
314	0515833		Transmission Lock-up, Not Req'd, Park to Neutral, Pump, PUC	1
315	0515835		Auxiliary Cooling System, PUC	1
316	0014486		Not Required, Transfer Valve, Single Stage Pump	1
317	0746501		Valve, Relief Intake, Elkhart	1
			Qty - 1 Pressure Setting - 185 psig Intake Relief Valve Control - Behind Right Side Pump Panel	
318	0724463		Controller, Pressure, Pierce LCD , PUC	1
			Pressure Governor Throttle Control - Clockwise Pressure Governor Default Mode - Pressure Setting	
319	0072153		Primer, Trident, Air Prime, Air Operated	1
320	0528229		Drain Locations, Special Instructions	1
321	0780359		Manuals, Pump, (2) Total, Electronic Copies, Pierce PUC Pump	1
322	0602496		Plumbing, Stainless Steel and Hose, Single Stage Pump, PUC	1
323	0795135		Plumbing, Stainless Steel, w/Foam System	1
324	0517852		Inlets, 6.00" - 1250-2000 GPM, Pierce PUC Pump	1
325	0014650		Pump Suction Tube(s), Short, All	1
326	0744618	SP	Valve, w/Relief, Left Inlet, 6", Akron 9327 Elec Controller, Manual Override,PUC	1
327	0741561	SP	Valve, w/Relief,Right Inlet, 6", Akron 9327 Elec Controller, Manual Override,PUC	1
328	0004646		Cap, Main Pump Inlet, Long Handle, NST, VLH	1
329	0084610		Valves, Akron 8000 series- All	1
330	0520002		Valve, Inlet(s) Recessed, Side Cntrl, PUC	1
			Qty, Inlets - 1	
331	0004700		Control, Inlet, at Valve	1
332	0004660		Inlet (1), Left Side, 2.50"	1
333	0004680		Inlet, Right Side, 2.50"	1
334	0521137		Anode, Zinc, Pair, Pump Inlets, PUC	1
335	0780712	SP	Elbow, 30 Degree Side Inlet, 6" FNST x 5" Storz w/Cap, PUC	2
			Qty, Adapter for Inlet - 2 Location, driver's/passenger's/center - Left & Right	
336	0092569		No Rear Inlet (Large Dia) Requested	1
337	0064116		No Rear Inlet Actuation Required	1
338	0092696		Not Required, Cap, Rear Inlet	1

Line	Option	Type	Option Description	Qty
339	0009648		No Rear Intake Relief Valve Required on Rear Inlet	1
340	0092568		No Rear Auxiliary Inlet Requested	1
341	0723049		Valve, .75" Bleeder, Aux. Side Inlet, "T" Swing Handle	1
342	0687424		Tank to Pump, (1) 3.00" Valve, 4.00" Plumbing, 3.00" Tank Outlet, Aerial PUC	1
343	0595508		Outlet, Tank Fill, 1.50", PUC	1
344	0766941		Control, Outlets, Swing Handle, Elec Right Outlets Akron 9335 w/Press Disp, PUC	1
345	0516755		Outlet, Left Side, 2.50" (2), PUC	1
346	0539271		Elbow, Left Side Outlets, 30 Degree, 2.50"FNST x 2.50" MNST, VLH, PUC	1
347	0092570		Not Required, Outlets, Left Side Additional	1
348	0035094		Not Required, Elbow, Left Side Outlets, Additional	1
349	0766761		Outlet, Right Side, 2.50", (1), Electric Akron 9335 Controller, PUC	1
			Qty, Discharges - 01	
350	0539269		Elbow, Right Side Outlets, 30 Degree, 2.5" FNST x 2.5" MNST, VLH, PUC	1
351	0092571		Not Required, Outlets, Right Side Additional	1
352	0089584		Not Required, Elbow, Right Side Outlets, Additional	1
353	0818640		Outlet, Large Diameter, Right Side, Akron Valve, PUC	1
			Outlet, Large Diameter, Plumbing - 4.00"	
			Outlet, Large Diameter, NST Adapter - 4.00" MNST	
			Outlet, Large Diameter, Valve Actuation - PUC Akron 9335 w/PSI	
354	0699320		Adapter, 4.00" FNST x 5.00" Storz, w/Cap and Chain, PUC	1
			Qty, - 1	
355	0092572		Not Required, Outlet, Front	1
356	0092575		Not Required, Outlet, Rear	1
357	0045099		Not Required, Elbow, Rear Outlets	1
358	0092574		Not Required, Outlet, Rear, Additional	1
359	0085695		Not Required, Elbow, Rear Outlets, Large, Additional	1
360	0092573		Not Required, Outlet, Hose Bed/Running Board Tray	1
361	0085076		Caps for 1.50" to 3.00" Discharge, Chain	1
362	0723042		Valve, 0.75" Bleeder, Discharges, "T" Swing Handle	1
363	0029106		Not Required, Deluge Outlet	1
364	0029302		No Monitor Requested	1
365	0029304		No Nozzle Req'd	1
366	0029107		No Deluge Mount	1
367	0826319		Waterway Outlet & Control, Akron Valve, PUC	1
			Outlet, Waterway (Aerial), Valve Actuation - Pierce large handwheel	
368	0739945		Crosslay Module, Full Width, Boom Compartment, Roll Up Doors, Aerial, PUC	1
369	0750897		Doors, Crosslay, Roll-up Amdor, Each End, Full Height, PUC	1
			Color, Roll-up Door - AMDOR Painted to Match Lower Body	
			Latch, Roll-up Door - Non-Locking Liftbar	
			Drip Pan - Drip Pan Not Required	
370	0747660		Lights, Crosslay Compt, Forward LED, 2Lts	1
371	0827771	SP	Crosslays, (1)1.50" W/ 2.50" Plumbing, (1) 2.50", W/Alum Trays, PUC	1
			Crosslay/Deadlay/Speedlay Capacity 1 - 200' of 1.75" double jacket hose	
			Crosslay/Deadlay/Speedlay Capacity 2 - 200' of 2.50" double jacket hose	
372	0827730	SP	Deadlay (1), No Plumbing, W/Aluminum Tray, PUC	1
			Crosslay/Deadlay/Speedlay Capacity 1 - 400' of 2.5" D.J. Hose and 200' 1.5" D.J on top	
373	0731773		Enclosure, Transverse, Upper Crosslay Module, Strap, PUC	1
			Size - 400' of 2.5" three stacks on bottom and 200' of 1.50" finish load on top stored vertical in horse shoe load	
374	0788849	SP	Cover, Crosslay, Alum Treadplate, Hinge at Front, Aerial, Bid 747	1
375	0649297	SP	Scuffplate, Aluminum Treadplate	1
			Location - One each side on the front exterior wall of the speedlay compartment	
376	0676021		Foam Sys, Husky 3, Single Agent, PUC, Multi Select Feature	1
			Discharge, Foam Locations - Crosslay Lower Rear and Crosslay Lower Front	
377	0012126		Not Required, CAF Compressor	1
378	0592527		Refill, Foam Tank, Integral, Husky 3	1
379	0767794	SP	Relocate Hydraulic Reservoir for Husky Foam System, 75' HAL/PAL	1
			Location - Move as far as the hoses will allow with out redoing them	
380	0031896		Demonstration, Foam System, Dealer Provided	1

Line	Option	Type	Option Description	Qty
381	0005446		Foam Cell, 20 Gallon, Not Reduce Water	1
			Type of Foam - Class "A"	
382	0697589		Drain, 1.00", Foam Tank #1, Husky 3 Foam System, Quarter Turn	1
383	0091079		Not Required, Foam Tank #2	1
384	0091112		Not Required, Foam Tank #2 Drain	1
385	0746447		Approval Dwg, All Pump Panel(s), Includes Color And Label Tags	1
			Num Of Truck(s) or Sim Unit, ALL Pump Pnl, Dwg - 01	
386	0032479		Pump Panel Configuration, Control Zone	1
387	0579545		Step, Slide-Out/Fold-Out, Pump Operator Platform, Aerial PUC	1
388	0769430		Light, Slide-Out Pump Operator Step, Amdor AY-LB-12HW020, Short Step	1
389	0562413		Material, Pump Panels, Operators Brushed Stainless, Sides Black UL-LX, PUC	1
390	0516978		Pump and Plumbing Access, Simple Tilt Service, PUC	1
391	0618458		Light, Pump Compt, Wln 3SC0CDCR LED White, PUC	1
			Qty, - 01	
392	0516983		Gauges, Engine, Included With Pressure Controller, PUC	1
393	0005601		Throttle, Engine, Incl'd w/Press Controller	1
394	0739224		Indicator Light @ Pump Panel, Throttle Ready, Incl w/Pressure Gov/Throttle,Green	1
395	0549333		Indicators, Engine, Included with Pressure Controller	1
396	0770520	SP	Modification, Pump Panel Switch Plate Removed replace with Spatter Painted Plate	1
397	0521055		Gauges, 6.00" Master, Class 1, 30"-0-600 psi,, PUC	1
398	0511104		Gauge, 3.00" Pressure, Class 1, 30"-0-400psi	1
399	0748780		Gauge, Water Level, Pierce, In pressure Controller, PUC Color Display, Lt Driver	1
400	0604028		Water Level Gauge, FRC, MaxVision WLA280-A00 Programmable Remote Display	2
			Location - upper rear corners of the crew cab, to the rear of the crew doors	
			Qty, - 02	
			Activation, Water Level G - pb) parking brake is applied	
401	0604354		Gauge, Foam Level, FRC, Tank Vision Pro, WLA 360-A00, Class "A"	1
402	0653081		Light, Pump Operator & Panel, Side Ctrl, PUC, 60354C LED Cab & LED OH Chr Cvr	1
403	0606694		Air Horns, (2) Hadley, 6" Round, eTone, In Bumper	1
404	0606832		Location, Air Horns, Bumper, Left Side, Outside Frame, Same Side (Pos #6 & #7)	1
405	0757092		Control, Air Horn, Multi Select	1
406	0757077		Control, Air Horn, Lanyard, LS	1
			Lanyard - Nylon Rope	
407	0757084		Control, Air Horn, Horn Ring	1
408	0757076		Control, Air Horn, Lanyard, RS	1
			Lanyard - Nylon Rope	
409	0505417		Siren, Wln 295HFSC9, Dual Tone, 200W	1
410	0015283		Location, Elect Siren	1
			Location - overhead location #3	
411	0076156		Control, Elec Siren, Head Only	1
412	0745225		Speaker, (2) Wln, SA314A, Natural Finish, 100 watt	1
			Connection, Speaker - siren head	
413	0601559		Location, Speaker, Frt Bumper, Recessed, Each Side, Inside Frame (Pos 3 & 5)	1
414	0895310		Siren, Federal Q2B	1
			Finish, Q2B Siren - Chrome	
415	0602078	SP	Siren, Mechanical, Recessed In Bumper, Flush with Bumper Face	1
			Location, Siren, Mech - b) right	
416	0748305		Control, Mech Siren, Multi Select	1
417	0748281		Control Mech Siren, Ft Sw RS	1
418	0748282		Control, Mech Siren, Ft Sw LS	1
419	0740391		Sw, Siren Brake, Momentary Chrome Push Button, RS	1
420	0021826		Bracket, Wedge Style for Foot Switch, Each	1
			Location - driver side Q-Siren switch	
421	0811625		Control System, Supplier Based, Electrical Wln CenCom Core C399 HW CCCo	1
422	0824762		Module, Control Head, CCTL9, 6 PB/Rot Knob, CCCo	1
			Location - locate at preconstruction	
423	0746353		Not Required, Warning Lights Intensity	1
424	0828276	SP	Lightbar, Wln, Frdm Q WCXF4MINI, 2-21.5", ARWRR RRWRA, 30 deg, CCCo	1
			Filter, Whl Freedom Ltbrs - No Filters	

Line	Option	Type	Option Description	Qty
425	0691544		Light, GTT, 794* LED Opticom Emitter, Remote Mounted on Cab Roof	1
			Location - driver side Opticom Priority - b) High Opticom Activation - Cab Switch & E-Master Momentary Opticom Activation - DS Switch	
426	0828267	SP	Lightbars, Wln, Freedom IV-WCXF4MINI, 2-21.5", RBRR RRBR, CCCo	1
			Lightbar Location, Cab/Crew Cab - cc)over the crew cab doors Filter, Whl Freedom Ltbrs - No Filters	
427	0731884		Lights, Front Zone, Wln M6**S, Q Bezel 4Lts CCCo	1
			Color, Lens, LED's - Clear Color, Lt DS Frnt Outside - Left Red Color, Lt PS Frnt Outside - Right Red Color, Lt DS Front Inside - Left Blue Color, Lt PS Front Inside - Right Blue Color, Q Bezel and Trim - Polished Chrome	
428	0889526	SP	Light, Front, Wln M6**S, 1st, CCCo	2
			Location, Lights - cab grill center each side Qty, - 02 Color, Lights, Warning - gla) red Control, Light - h) front warning Color, Lens, LED's - Clear Color, Trim - Chrome Trim	
429	0653937		Flasher, Headlight Alternating	1
			Headlt flash deactivation - a)w/high beam	
430	0895940		Lights, Side Zone Lower, Wln, Separated into Front, Middle, Rear	1
431	0810761		Lights, Side Zone Lower Front, Wln M6V2**, CCCo	1
			Location, Lights Front Side - b)each side bumper Color, Lens, LED's - Clear Control, Scene Lts - Perimeter light and Directional Light - Respective Color, Trim - Chrome Trim Color, Lt Side Front, DS - Left Red Color, Lt Side Front, PS - Right Red	
432	0804496		Lights, Side Zone Lower Middle, Wln M6D#, CCCo	1
			Location, Lights Mid Side - Rearward of Crew Cab Doors Color, Trim - Chrome Trim Color, Lt Side Mid LS Cmb - Dual Red/Amber Color, Lt Side Mid RS Cmb - Dual Red/Amber	
433	0807294		Lights, Side Zone Lower Rear, Wln M6V2**, CCCo	1
			Color, Lens, LED's - Clear Control, Scene Lts - Perimeter light and Reverse Signal for Side Scene Lts Location, Lights Rear Side - Rear Fender Panel Color, Trim - Chrome Trim Color, Lt Side Rear PS - Right Red Color, Lt Side Rear DS - Left Red	
434	0807350	SP	Lights, Side, Wln M6D#, CCCo, 1st	2
			Location - on the 45 degree angled corners of the bumper extension Qty, - 02 Color, Lights, Warning - Red and White Control, Light - b) side warning Color, Trim - Chrome Trim	
435	0828323	SP	Lights, Side, Wln RS*03ZCR, Horizontally Mntd/Rec in Rub Rail, CCCo 1st	1
			Location, Lights - one each side of rear body rubrail Qty, - 01 Color, Lights, Warning - Red Control, Light - b) side warning Color, Trim - Chrome Trim	
436	0727126		Lights, Rear Zn Lwr, Wln M6**S, For Tail Lt Housing CCCo	1
			Color, Lens, LED's - Clear Color, Lt DS Rear - Left Blue Color, Lt PS Rear - Right Red	
437	0814078	SP	Lights, Rear, Wln M6D# DUO LED, 1st, CCCo	2
			Location - above the tail lights Qty, - 02 Color, Lights, Warning - Red and Amber	

Line	Option	Type	Option Description	Qty
437			Control, Light - d) separate switch Color, Lens, LED's - Clear Color, Trim - Chrome Trim	
438	0828388	SP	Light, Rear Zone Up, Wln B63M7**, Rota-Beam & M7 LED Lt, 33 Degree, CCCo Color, Lights, Warning - Amber Color, Dome, Rear Warning - Clear Color, Lens, LED's - Clear	1
439	0006551		Not Required, Lights, Rear Upper Zone Blocking	1
440	0811162	SP	Light, Traffic Directing, Wln TANF85, 45.12" Long, CTA, CCTL9 Controlled, CCCo	1
441	0529863		Location, TDL, Surface Mounted On Full Width Treadplate Wedge Bracket	1
442	0724397	SP	Not Required, Location, Traf Dir Lt Control	1
443	0006646		Electrical System, 120/240VAC, General Design	1
444	0729368	SP	Generator, Harrison 4.8kW MSV 120/240V, Hydraulic, Digital Volt, Hz, Hour, Meter Generator Interlocks - No Interlocks	1
445	0517171		Location, Hydraulic Generator, Cargo Area, Front of Body, PRM/PUC Location, Generator - passenger side	1
446	0016752		Starting Sw, Truck Engine Powered Gen, Cab Sw Pnl	1
447	0016757		Not Required, Remote Start, Generator	1
448	0016740		Not Required, Fuel System	1
449	0016767		Not Required, Oil Drain Extension, Generator	1
450	0036738		Circuit Breaker Panel, Included With PTO Generator Location, Circuit Breaker Panel - LS4, Back Wall High	1
451	0745228		Pump, Thru-Pump, For Hydraulic Driven Devices	1
452	0016771		Not Required, Routing Exhaust, Generator	1
453	0006825		Reel, Elect Cable, Hannay, 1600, (3) Wire Qty, Cord Reels - 2 Reel Guide - a) Nylatron guide Finish, Reel - Painted Job Color Matching Lower Body Location, Electric Cord Reel - 2Rls in Front Stabilizer Compts	2
454	0006828		Cord, Electric, 10/3 Yellow, 3 Wire Lengths of Elect Cord - 2 Feet of Yellow Cord - b)100 Connection, Cord - Hubbell 20A 120V Twst Lock	2
455	0013949		Enclosure, Reel, with Reel Access Door Location - passenger side forward above pump module Qty, - 1	1
456	0780350		Receptacle Strip, 15A 120V 6-Place, Interior Cab Qty, - 1 Location 1 - right lower rear wall corner in the EMS cabinet 8.00" from floor AC Power Source - Shoreline	1
457	0779718		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 2nd, Interior Body Qty, - 01 Location 1 - D4 recessed in rear side wall. Move the receptacle that is close to the door frame down down as close to the floor as practicle leaving the wire in the hole that is already there for the wire. AC Power Source - Generator Cover, Receptacle - Interior SS Wall Plate(s)	1
458	0779722		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st, Interior Body Qty, - 01 Location 1 - P4 recessed in rear side wall 15.00 inch from floor of shelve AC Power Source - Gen to Shoreline Transfer Switch Cover, Receptacle - Interior SS Wall Plate(s)	1
459	0519934		Not Required, Brand, Hydraulic Tool System	1
460	0649753		Not Required, PTO Driven Hydraulic Tool System	1
461	0673136		Aerial, 105' Heavy Duty Ladder, (750 dry/500 water)	1
462	0000042		Boom Support, Rear of the Chassis Cab	1
463	0762413		Light, Boom Support, Amdor AY-LB-12HW012, 12" LED	1
464	0778531	SP	Boom Support Compartment, Rear of Cab, 10.00" Deep, PUC Material Boom Support Compt - smooth aluminum painted job color	1
465	0767836	SP	Cover, Alum 4-Way, Exposed Wires, Back side of Stabilizer Controls	1
466	0775605	SP	Boom Panel, Pair, Special Mounting On Stokes Box Side Paint Color, Predefined - Red #213 to match job color	1

Line	Option	Type	Option Description	Qty
467	0526885		Indicator, Extension, Inside and Outside Handrails, Every 10'	1
			Color - 2) red	
468	0723719		Steps, Folding, Four, Aerial Device, Trident	1
			Coating, Step - luminescent	
			Light, Aerial Device Folding Step - integrated LED, Four	
			Finish, Aerial Device Folding Step - bright finish	
469	0688232		Rung Covers, Aerial Device	1
			Rung Cover Color - Photoluminescent	
470	0728981		Box, Stokes, w/Cover, Base Section, Adjacent to Boom Panel, w/Door Open Sw	1
			Qty, - 01	
			Finish - Painted, Aerial Device Color	
			Latch, Door, Storage - Butterfly Latch, Pair	
			Location, Aerial Device - right side	
			Louvers - no louvers	
			Size, Stokes Basket, Predefined - 86"L x 24"W x 8"H	
471	0678539		Brackets Only, Roof/Wall Ladder, Aerial Fly Section	1
			Finish - Painted, Aerial Device Color	
			Roof Ladder, Make/Model - 16' Duo-Safety 875-DR 16.00" wide	
472	0680785		Limited Retraction, Aerial	1
473	0780041		Egress, Shortened, Ascendant Ladder, 100'/105'	1
474	0601972		Lights, Turntable Walkway, P25, LED	1
475	0601949		Light, Turntable Console, TecNiq T-10, LED Strip Light	1
476	0120787		Control Stations, PAL, Four Stabilizers	1
477	0593561		Stabilizers, 105' HD Rear Mount Steel Aerial, 16' Spread, 12" G Pen, 750# tip	1
			Material, Stabilizer Pad - Composite	
478	0729051		Stabilizer Pan and Trim Material	1
			Stabilizer Panels - polished stainless steel	
			Stabilizer Trim - polished stainless steel	
479	0530819		Not Required, Aerial Stabilizer Pins	1
480	0809990		Doors, Stabilizer Control Box, Non-MUX Aerials	1
			Latch, Door, Storage - Southco C2 Chrome Raised	
			Hinge Location - Inboard	
			Door, Material & Finish, Stabilizer - Stainless steel painted single color body	
481	0121266		Hydraulic System, PAL	1
482	0120794		Swivels, PAL, Tiller, 28 Collector Rings	1
483	0120778		Electrical System, 105' PAL	1
484	0804781		Aerial Scene Lts Separated into Aerial Tip Category and Aerial Tracking Category	1
485	0803462		Lights, Tip, Wln MP** LED, 2lts	1
			Color, Wln Lt Housing - White Paint	
			Scene Lt Optics LH Fly - Spot Left	
			Scene Lt Optics RH Fly - Spot Right	
			Mount, Wln II - Universal Bail MP**	
486	0802753		Lights, Tracking, Wln MP** LED, 2lts	1
			Location, Sw, Arl DC Lts - m) 2 locations	
			Color, Wln Lt Housing - White Paint	
			Scene Lt Optics LH Base - Left Spot	
			Scene Lt Optics RH Base - Right Spot	
			Mount, Wln II - Universal Bail MP**	
487	0825327	SP	Lights, Stabilizer Warn (2) Sets, Wln M6D# DUO, CCCo	1
			Color, Trim - Chrome Trim	
			Color, Lt Stabilzr Pan, LS Frt Cmb - Red and Amber	
			Color, Lt Stabilzr Pan, LS Rr Cmb - Red and Amber	
			Color, Lt Stabilzr Pan, RS Rr Cmb - Red and Amber	
			Color, Lt Stabilzr Pan, RS Frt Cmb - Red and Amber	
488	0068701		Lights, Grote Supernova LED, Stabilizer Beam, (2) Sets	1
489	0762388		Lights, Stabilizer Scene, (2) sets, Amdor AY-LB-12HW012, LED	1
490	0006929		Not Required, 120v To Tip	1
491	0006920		Intercom, 2-Way Atkinson (PAL)	1
492	0540895		Not Required, Breathing Air to Tip, Aerial Ladder	1
493	0024742		Not Required, Mask, Breathing Air To Tip	1
494	0126600		Raised Pedestal, 3.00", Rear Mount Aerials, AXT, Velocity, Impel, Enf	1
495	0597280		Lifting Eye Assembly, Rope Rescue Attachment, HDL	1

Line	Option	Type	Option Description	Qty
496	0530826		Turntable Access, ManSaver Bars, Yellow	1
497	0026950		Waterway, 100'/105' HDL	1
498	0632855		Monitor, Akron 3480 StreamMaster II Electric w/Extended Vertical Travel	1
			Nozzle, Monitor 1 PAL - Akron 5178 Electric 2000 gpm	
499	0006973		Flowminder, Class 1, Waterway (PAL)	1
500	0004836		Inlet, 5.00" at Rear w/ Pump, Ascendant Tandem, PAP, PAL	1
501	0673128		Quick-Lock Waterway Locking System, 100' HDL, 105' HDL, ASL	1
502	0767837	SP	Monitor Auto Stow, To Left Side, Aerial	1
503	0013164		Elbow, Aerial Inlet, 5" FNST x 5" Storz w/Cap	1
			Location - aerial inlet	
			Qty, - 1	
504	0047901		Not Required, Tools, Aerial, PAL/PAP	1
505	0559494		Manuals and Training, 3 Consecutive Days, Ascendant Ladder, PAL	1
506	0007150		Bag of Nuts and Bolts	1
			Qty, Bag Nuts and Bolts - 1	
507	0047021		Reflective Emergency Triangles, Set of Three	1
			Qty, - 1	
508	0816502		NFPA Required Loose Equipment, Quint, NFPA/ULC 2024, Provided by Fire Dept	1
509	0816941		Soft Suction Hose, Provided by Fire Department, NFPA/ULC 2024	1
510	0027023		No Strainer Required	1
511	0816939		Extinguisher, Dry Chemical, NFPA 2024, Provided by Fire Department	1
512	0816937		Extinguisher, 2.5 Gal. Pressurized Water, NFPA/ULC 2024, Provided by Fire Dept	1
513	0007482		Not Required, Crowbars	1
514	0007484		Not Required, Claw Tools	1
515	0816998		Axe, Flathead, Provided by Fire Department	1
516	0817000		Axe, Pickhead, Provided by Fire Department	1
517	0007494		Not Required, Sledgehammers	1
518	0741569		Paint Process / Environmental Requirements, Appleton	1
519	0709763		Paint, Single Color, Velocity/Impel	1
			Paint Color, Cab - Red #213	
520	0709845		Paint, Single Color, Body	1
			Paint, Body - Match Cab	
521	0645807		Paint Chassis Frame Assy, With Liner, E-Coat, All Joints Sealed	1
			Paint Color, Frame Assembly, Predefined - Gloss Black	
522	0693797		No Paint Required, Aluminum Front Wheels	1
523	0693792		No Paint Required, Aluminum Rear Wheels	1
524	0733739		Paint, Axle Hubs	1
			Paint, Axle Hub - Primary Job Color	
525	0774760	SP	Coating, Hot Dip Galvanized, Aerial Stabilizers And Attached Components, Four	1
526	0007230		Compartment, Painted, Spatter Gray	1
527	0740425	SP	Aerial Ladder Paint, Use w/ Hot Dip Stabilizer Option	1
			Paint Color, Aerial Device - Bright Silver Metallic 224	
			Paint Color, Egress - #50 Red	
			Paint Color, Turntable - Silver/gray metallic 224	
			Paint Color, Boom Support - gloss black primer	
			Paint Color, Cylinders - bright silver metallic 224	
			Paint Color, Aerial Torque Box - gloss black primer	
			Paint Color, Aerial Rotation Motor - Black	
			Paint Color, Aerial Control Console - bright silver metallic 224	
528	0544129		Reflective Band, 1"-6"-1"	1
			Color, Reflect Band - A - e) black	
			Color, Reflect Band - B - t) gold	
			Color, Reflect Band - C - za) black	
529	0510041		Reflective across Cab Face, Imp/Vel	1
530	0583454		Stripe, Chevron, Rear, Diamond Grade, Aerial	1
			Color, Rear Chevron DG - fluorescent yellow green	
531	0598754		Stripe, Reflective/Diamond Grade, 4.00" on Stabilizers	1
			Color, Reflect Band - A - o) fluorescent yellow diamond grade	
532	0545179		Stripe, Diamond Grade, Chevron, Front Bumper	1
			Size, Chevron Striping - 06	
			Color, Chevron DG - Fluorescent Yellow-Green 983-23	
			Color, Chevron DG - B - Red 983-72	

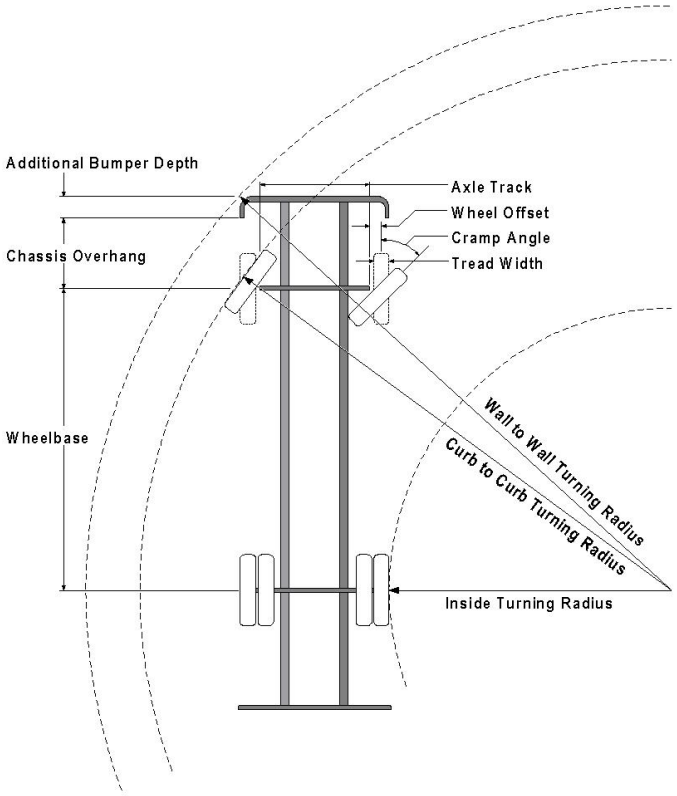
Line	Option	Type	Option Description	Qty
533	0552453		Stripe, Reflective, Chevron, Cab and Crew Cab Doors Interior, Diamond Grade	1
			Color, Reflect Band - A - p) fluorescent yellow green diamond grade	
			Size, Chevron Striping - 04	
			Color, Reflect Chev - A - r) red diamond grade	
534	0679895		Stripe, Reflective, Box, Boom Sign with Scrolls, Aerial	1
535	0033179		Lettering Specifications, Reflective	1
536	0686162		Lettering, Reflective, 3.00", Each	50
			Qty, Lettering - 50	
			Outline, Lettering - No Outline or Shade	
537	0665003		Lettering, Website Address, Reflective, each	1
			Location, Lettering - Located on the R1.	
			Qty, - 01	
538	0686039		Lettering, Reflective, 2.00", (41-60)	1
			Outline, Lettering - No Outline or Shade	
539	0685997		Lettering, Reflective, 9.00", (1-20)	1
			Outline, Lettering - Outline and Shade	
540	0686048		Lettering, Reflective, 1.00", Each	6
			Qty, Lettering - 06	
			Outline, Lettering - Outline and Shade	
541	0686018		Lettering, Reflective, 5.00", Each	22
			Qty, Lettering - 22	
			Outline, Lettering - Outline and Shade	
542	0686026		Lettering, Reflective, 4.00", (41-60)	1
			Outline, Lettering - No Outline or Shade	
543	0077162		Emblem, "Star of Life", 10", Reflective, Pair	1
544	0661571	SP	Emblem, Maltese Cross, Reflective, 18"-20", Each	1
			Qty, - 01	
			Location, Emblem - R1 Door	
545	0672805		Emblem, Maltese Cross, Reflective, 15"-17", Each	1
			Qty, - 01	
			Location, Emblem - cab doors	
545	0000000	STF	Oval Strapping Heron Rib - roll - RED	2
			Qty, - 02	
546	0032773		Manuals, Two (2), Fire Apparatus Parts, & (1) CD, Custom Chassis	1
547	0032421		Manuals, (2) Chassis Service, (1) CD, Custom	1
548	0029551		Manuals, Two (2) Chassis Operation, & (1) Compact Disc, Custom	1
549	0030008		Warranty, Basic, 1 Year, Apparatus, WA0008	1
550	0611136		Warranty, Chassis, 3 Year, Velocity/Impel, WA0284	1
551	0696698		Warranty, Engine, Cummins, 5 Year, WA0181	1
552	0684953		Warranty, Steering Gear, Sheppard M110, 3 Year WA0201	1
553	0595767		Warranty, Frame, 50 Year, Velocity/Impel, WA0038	1
554	0595698		Warranty, Axle, 3 Year, TAK-4, WA0050	1
555	0733305		Warranty, Tandem Axle, 5 Year, Meritor, General Service, WA0384	1
556	0652758		Warranty, ABS Brake System, 3 Year, Meritor Wabco, WA0232	1
557	0019914		Warranty, Structure, 10 Year, Custom Cab, WA0012	1
558	0744240		Warranty, Paint, 10 Year, Cab, Pro-Rate, WA0055	1
559	0524627		Warranty, Electronics, 5 Year, MUX, WA0014	1
560	0695416		Warranty, Pierce Camera System, WA0188	1
561	0647720		Warranty, Pierce LED Strip Lights, WA0203	1
562	0046369		Warranty, 5-year EVS Transmission, Standard Custom, WA0187	1
563	0685945		Warranty, Transmission Cooler, WA0216	1
564	0688798		Warranty, Water Tank, Lifetime, UPF, Poly Tank, WA0195	1
565	0596025		Warranty, Structure, 10 Year, Body, WA0009	1
566	0693126		Warranty, AMDOR, Roll-up Door, 10 Year/5 Year Painted, WA0185	1
567	0889364		Warranty, Pump, Pierce, PUC-NG, 7 Year Parts, 1 Year Labor, WA0390	1
568	0648675		Warranty, 10 Year S/S Pumbing, WA0035	1
569	0657990		Warranty, Foam System, Husky 3, WA0231	1
570	0006999		Warranty, Structure, 20 Year, Aerial Device, WA0052	1
571	0687388		Warranty, Swivels, 5 Year, Aerial Device, WA0197	1
572	0685727		Warranty, Hydraulic System and Components, 3 Year/5 Year, WA0200	1
573	0687327		Warranty, Waterway, 10 Year, Aerial Device, WA0198	1
574	0595860		Warranty, Paint, 4 Year, Aerial Device, Pro-Rated, WA0047	1

Line	Option	Type	Option Description	Qty
575	0725636		Warranty, Harrison Generator, 2 Year	1
576	0595820		Warranty, Paint, 10 Year, Body, Pro-Rate, WA0057	1
577	0595412		Warranty, Graphics Lamination, 1 Year, Apparatus, WA0168	1
578	0819254		Certification, Vehicle Stability, CD0196	1
579	0808577		Certification, Engine Installation, Velocity, Cummins X15, 2027	1
580	0686786		Certification, Power Steering, CD0098	1
581	0892701		Certification, Cab Integrity, Impel/Velocity FR, CD0190	1
582	0548950		Certification, Cab Door Durability, Velocity/Impel, CD0001	1
583	0548967		Certification, Windshield Wiper Durability, Impel/Velocity, CD0005	1
584	0667411		Certification, Electric Window Durability, Velocity/Impel FR, CD0004	1
585	0549273		Certification, Seat Belt Anchors and Mounting, Imp/Vel/Vel SLT, CD0018	1
586	0735950		Certification, Cab HVAC System Perf, Vel/Imp FR, CD0166/CD0168/CD0176/CD0177	1
587	0545073		Amp Draw Report, NFPA Current Edition	1
588	0002758		Amp Draw, NFPA/ULC Radio Allowance	1
589	0799248		Appleton/Florida BTO	1
590	0000050		105' BODY	1
591	0000012		PIERCE CHASSIS	1
592	0004713		ENGINE, OTHER	1
593	0046396		EVS 4000 Series TRANSMISSION	1
594	0520324		PIERCE PUMP, PUC	1
595	0020009		POLY TANK	1
596	0028048		FOAM SYSTEM	1
597	0020006		SIDE CONTROL	1
598	0020007		AKRON VALVES	1
599	0020015		ABS SYSTEM	1
600	0658751		PUMPER BASE	1

Turning Performance Analysis

10/02/2024

Bid Number: 1122
Department: Castle Rock Fire Department
Chassis: Velocity Chassis, Aerials, Tandem, PUC-NG (Big Block)
Body: Aerial, HD Ladder 105', PUC, Alum Body



Parameters:

*Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	16.3 in.
Chassis Overhang:	78 in.
Additional Bumper Depth:	10 in.
Front Overhang:	88 in.
Wheelbase:	252 in.

Calculated Turning Radii:

Inside Turn:	19 ft. 11 in.
Curb to curb:	35 ft. 0 in.
Wall to wall:	40 ft. 6 in.

Category	Option	Description
Bumpers	0790541	Bumper, 10" Extended, Steel Painted, 12" High, Imp/Vel
Tires, Front	0899288	Tires, Front, Goodyear, Armor MAX MSA, 425/65R22.50, 20 ply, Fire Service Speed
Axle, Front, Custom	0508849	Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, Imp/Vel
Wheels, Front	0019611	Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot
Aerial Devices	0673136	Aerial, 105' Heavy Duty Ladder, (750 dry/500 water)

Notes:

*Actual Inside cramp angle may be less than shown.

Curb to Curb turning radius calculated for 9.00 inch curb.

Definitions:	
Inside CrampAngle	Maximum turning angle of the front inside fire.
Axle Track	King-pin to King-pin distance of front axle.
Wheel Offset	Offset from the center line of the wheel to the King-pin.
Tread Width	Width of the tire tread.
Chassis Overhang	Distance of the center line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Wheel	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicles front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures takes into account any front overhang due to chassis , bumper extensions and or aerial devices.

Electrical Analysis

10/2/2024

Bid #: 1122

Desc: 2024 Aerial, 105' Ladder PUC-NG

Customer: Castle Rock Fire Department

Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT

Job #:

Sales Rep: Doucette, Duane

Organization: Front Range Fire Apparatus, Ltd

Type: Multiplexed

Option	Description	Type*	Minimum Load	Intermittent Load	Total Connected
0001244	High Idle w/Electronic Engine, Custom		0.00	1.20	0.00
0002617	PTO switch, w/light - aerial		0.00	0.00	0.08
0006825	Reel, Elect Cable, Hannay, 1600, (3) Wire		0.00	72.00	0.00
0012527	Lights, Engine Compt, (2), All Custom Chassis		0.00	0.00	3.20
0032085	Fans, Window Defrost, Two (2), Location Feature		0.00	2.50	2.50
0072153	Primer, Trident, Air Prime, Air Operated		0.00	0.00	0.00
0079211	Batteries, (6) Stryten/Exide Grp 31, 950 CCA each, Threaded Stud		0.00	3.00	0.00
0122466	Cab Lift, Elec/Hyd, w/Manual Override, Imp/Vel		0.00	180.00	0.00
0543751	Light, Do Not Move Apparatus		0.00	0.80	0.00
0547994	Lights, Wln, 20C0CDCR LED 4.00", Surface Mount, in Compt, Qty		0.00	0.00	1.44
0549333	Indicators, Engine, Included with Pressure Controller		0.00	0.35	0.00
0593561	Stabilizers, 105' HD Rear Mount Steel Aerial, 16' Spread, 12" G		0.00	4.00	0.00
0593759	ESC/ABS/ATC Wabco Brake System, Tandem Rear Axle		0.00	6.00	0.00
0604028	Water Level Gauge, FRC, MaxVision WLA280-A00 Programmable		0.00	0.00	0.00
0604354	Gauge, Foam Level, FRC, Tank Vision Pro, WLA 360-A00, Class		0.00	0.00	1.23
0618234	Light, Visor, Wln, 12V PSL2* Pioneer LED Spotlt 1st		0.00	0.00	6.00
0618458	Light, Pump Compt, Wln 3SC0CDCR LED White, PUC		0.00	0.36	0.00
0645581	Bracket, Remote Two-way Radio Heads in Switch Area		0.00	0.00	0.00
0653519	Camera, Pierce, LS Mux, RS, LS, R, Cameras, SD		0.00	1.20	0.00
0667902	Controls, Electric Windows, All Cab Doors, Impel/Velocity FR		0.00	26.00	0.00
0676021	Foam Sys, Husky 3, Single Agent, PUC, Multi Select Feature		0.00	55.00	0.00
0687994	Engine Brake, Jacobs Compression Brake, Cummins Engine		0.00	0.42	0.00
0691544	Light, GTT, 794* LED Opticom Emitter, Remote Mounted on Cab		0.00	0.03	0.00
0696870	Lights, Side Scene, TecNiq, E960 LED, Stainless 1st Pr		0.00	0.00	1.20
0727913	Spotlight, Golight/RadioRay, Model 20**4GT, LED, 2 Lts		0.00	0.00	7.40
0735006	Intercom, David Clark, 4-Pos, 2-Radio, (D, O, RPTT), 2obC,		0.00	0.00	0.50
0763608	Lights, Wln, PCPSM2*, Pioneer, 12 VDC, 2nd		0.00	0.00	12.00
0763610	Lights, Wln, PCPSM2*, Pioneer, 12 VDC, 1st		0.00	0.00	12.00
0768059	Lights, Wln, PCPSM2* Pioneer, 12 VDC, 2nd		0.00	0.00	12.00
0768061	Lights, Wln, PCPSM2* Pioneer, 12 VDC, 1st		0.00	0.00	12.00
0770513	Divider, Fixed, In Hose Bed, To Stablize Hose Load		0.00	0.00	0.00
0770525	Hose Tray, Aluminum, Hose Storage, Removeable, Hose Chute		0.00	0.00	0.00
0803462	Lights, Tip, Wln MP** LED, 2lts		0.00	0.00	7.03
0804781	Aerial Scene Lts Separated into Aerial Tip Category and Aerial		0.00	0.00	0.00
0806466	Lights, Backup, Wln M62BU, LED, For Tail Lt Housing		0.00	3.20	0.00
0807350	Lights, Side, Wln M6D#, CCCo, 1st		0.00	2.25	2.25
0814078	Lights, Rear, Wln M6D# DUO LED, 1st, CCCo		0.00	2.70	1.80
0820894	Wiring, Spare, 15 A 12V DC, Batt Dir, 1st NFPA1900/ULC		0.00	0.00	15.00
0820897	Wiring, Spare, 15 A 12V DC, Batt Dir, 2nd NFPA1900/ULC		0.00	0.00	15.00
0821194	Wiring, Spare, 20 A 12V DC, Batt Dir, 2nd NFPA1900/ULC		0.00	0.00	20.00
0821226	Wiring, Spare, 2.0 A 12V DC, USB Term Blue Sea 1016 Batt Dir		0.00	0.00	8.00
0821312	Wiring, Spare, 30 A 12V DC Batt Dir 1st NFPA1900/ULC		0.00	0.00	30.00
0827291	Alarm, Back-up Warning, Wln BU112HL		0.00	0.50	0.00
0828267	Lightbars, Wln, Freedom IV-WCXF4MINI, 2-21.5", RBRR RRBR,		0.00	0.00	14.56
0828323	Lights, Side, Wln RS*03ZCR, Horizontally Mntd/Rec in Rub Rail,		0.00	0.00	0.40
0889526	Light, Front, Wln M6**S, 1st, CCCo		0.00	2.70	1.80
0895310	Siren, Federal Q2B		0.00	100.00	0.00

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply

Electrical Analysis

10/2/2024

Bid #: 1122

Desc: 2024 Aerial, 105' Ladder PUC-NG

Customer: Castle Rock Fire Department

Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT

Job #:

Sales Rep: Doucette, Duane

Organization: Front Range Fire Apparatus, Ltd

Type: Multiplexed

Option	Description	Type*	Minimum Load	Intermittent Load	Total Connected
0741239	HVAC, Heavy-Duty, Impel/Velocity FR, CARE	Load Managed	0.00	0.00	136.00
0778712	Compt, Storage, (2) Forward Facing, Overhead, 9 W x 10 H x 14	Load Managed	0.00	0.00	7.20
0804719	Handlts, (4) Streamlight, Fire Vulcan, 44451, C4 LED, Tail Lts,	Load Managed	0.00	0.00	4.40
0820904	Wiring, Spare, 15 A 12V DC 1st NFPA1900/ULC	Load Managed	0.00	0.00	30.00
0821232	Wiring, Spare, 20 A 12V DC, 6 Circuit Fuse Block, Blue Sea 5025	Load Managed	0.00	0.00	20.00
0002565	Hourmeter, Aerial Inside Cab	NFPA	0.10	0.00	0.00
0002615	Switch, Aerial 12V Master	NFPA	0.08	0.00	0.00
0002758	Amp Draw, NFPA/ULC Radio Allowance	NFPA	5.00	0.00	0.00
0006920	Intercom, 2-Way Atkinson (PAL)	NFPA	3.00	0.00	0.00
0006973	Flowminder, Class 1, Waterway (PAL)	NFPA	0.50	0.00	0.00
0063692	Compt, LS Turntable, F/H F/D, Lap Drs, Ascendant Tandem, 105	NFPA	1.80	0.00	1.80
0063719	Compt, RS Turntable, F/H, Lap Drs, Ascendant Tandem, 105 HDL	NFPA	2.70	0.00	2.70
0068701	Lights, Grote Supernova LED, Stabilizer Beam, (2) Sets	NFPA	3.20	3.20	0.00
0092582	Load Manager/Sequencer, MUX	NFPA	0.56	0.56	0.00
0120787	Control Stations, PAL, Four Stabilizers	NFPA	4.26	0.00	0.00
0505417	Siren, Wln 295HFSC9, Dual Tone, 200W	NFPA	0.80	7.20	0.00
0511569	Lights, Clearance/Marker/ID, Rear, P25 LED 7Lts	NFPA	0.50	0.00	0.00
0516983	Gauges, Engine, Included With Pressure Controller, PUC	NFPA	0.30	0.00	0.00
0555915	Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocity	NFPA	2.10	8.40	0.00
0557322	Lights, Step, P25 at Rear Tailboard, PUC, 4lts Perm Lts	NFPA	0.50	0.00	0.00
0568369	Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocity	NFPA	1.26	0.00	0.00
0587034	Air Dryer, Bendix, AD-IP w/Heat, 2010	NFPA	4.70	0.00	0.00
0601949	Light, Turntable Console, TecNiq T-10, LED Strip Light	NFPA	0.20	0.00	0.00
0601972	Lights, Turntable Walkway, P25, LED	NFPA	0.35	0.00	0.00
0602100	Lights, Torque Box Ladder Storage, Pierce LED Strip Lights, 2 Lts	NFPA	1.00	0.00	0.00
0618791	DEF Tank, 4.5 Gallon, LS Fill, Forward of Axle, Common Air	NFPA	0.60	11.40	0.00
0620054	Light, Directional/Marker, Intermediate, Weldon 9186-8580-29	NFPA	0.10	0.90	0.00
0631374	Lights, Deck, Wln (2) MPPBCS Micro Pioneer LED Rear Flood	NFPA	6.70	0.00	0.00
0647647	Lights, Dome, FRP Dual LED 4 Lts	NFPA	0.80	0.80	0.00
0648074	Lights, Clearance/Marker/ID, Front, P25 LED 7 Lts	NFPA	0.49	0.00	0.00
0648425	Light, Directional, Wln 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts,	NFPA	0.70	0.70	0.00
0653081	Light, Pump Operator & Panel, Side Ctrl, PUC, 60354C LED Cab	NFPA	2.00	0.00	0.00
0653937	Flasher, Headlight Alternating	NFPA	0.08	0.00	0.00
0664466	Bracket, License Plate & Light, Weldon 9186-23882-30 Incand,	NFPA	0.69	0.00	0.00
0668313	Cab, Velocity FR, 7010 Raised Roof w/Notch, PUC	NFPA	6.80	10.20	0.00
0673136	Aerial, 105' Heavy Duty Ladder, (750 dry/500 water)	NFPA	5.00	0.00	0.00
0689538	Lights, Compt, Pierce, LED Light Strip, 54", Additional	NFPA	0.53	0.53	0.00
0709438	Lights, Walk Surf, FRP Flood, LED	NFPA	2.00	0.00	0.00
0724463	Controller, Pressure, Pierce LCD , PUC	NFPA	1.70	0.00	0.00
0726731	Lights, Hose Bed, Not Req, Deck Lts	NFPA	1.36	0.00	0.00
0727126	Lights, Rear Zn Lwr, Wln M6**S, For Tail Lt Housing CCCo	NFPA	1.80	2.70	0.00
0729368	Generator, Harrison 4.8kW MSV 120/240V, Hydraulic, Digital Volt,	NFPA	19.30	0.00	0.00
0731884	Lights, Front Zone, Wln M6**S, Q Bezel 4Lts CCCo	NFPA	1.80	5.40	1.80
0739224	Indicator Light @ Pump Panel, Throttle Ready, Incl w/Pressure	NFPA	0.10	0.00	0.00
0747660	Lights, Crosslay Compt, Forward LED, 2Lts	NFPA	1.20	0.00	0.00
0748780	Gauge, Water Level, Pierce, In pressure Controller, PUC Color	NFPA	1.23	0.00	0.00
0762388	Lights, Stabilizer Scene, (2) sets, Amdor AY-LB-12HW012, LED	NFPA	0.72	0.00	0.00
0762413	Light, Boom Support, Amdor AY-LB-12HW012, 12" LED	NFPA	0.18	0.00	0.00

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply

Electrical Analysis

10/2/2024

Bid #: 1122

Desc: 2024 Aerial, 105' Ladder PUC-NG

Customer: Castle Rock Fire Department

Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT

Job #:

Sales Rep: Doucette, Duane

Organization: Front Range Fire Apparatus, Ltd

Type: Multiplexed

Option	Description	Type*	Minimum Load	Intermittent Load	Total Connected
0765941	Lights, Perimeter Body, Amdor AY-LB-12HW012 LED 2lts,	NFPA	0.36	0.00	0.00
0769430	Light, Slide-Out Pump Operator Step, Amdor AY-LB-12HW020,	NFPA	0.30	0.00	0.00
0769569	Lights, Perimeter Cab, Amdor AY-LB-12HW012 LED 4Dr	NFPA	0.72	0.00	0.00
0769572	Lights, Perimeter Pump House, Amdor AY-LB-12HW020 LED 2lts	NFPA	0.58	0.00	0.00
0777473	Compt, IPO Chute, Rear Access, Tandem Axle, Polished S/S	NFPA	0.90	0.00	0.90
0778631	Compt,DS F/H F/D,Lap Drs,w/o Chute,w/FlushReel,Hat,Ascend	NFPA	2.70	0.00	2.70
0778641	Compt, PS F/H F/D Frt, Lap Drs,Flush Reel,Ascend TA,105,100	NFPA	2.70	0.00	2.70
0783153	Headlights, Rect LED, JW Spkr Evo 2, AXT/DCF/Enf/Imp/Sab/Vel	NFPA	4.20	4.20	0.00
0801890	Trans, Allison 6th Gen, 4500 EVS P, w/Prognostics, Imp/Vel/Enf	NFPA	2.00	2.00	0.00
0802753	Lights, Tracking, Wln MP** LED, 2lts	NFPA	8.00	0.00	0.00
0804496	Lights, Side Zone Lower Middle, Wln M6D#, CCCo	NFPA	1.80	2.70	0.00
0804514	Lights, Tail, Wln M62BTT* Red Stop/Tail & M62T* Amber Dir Arw	NFPA	0.83	2.49	0.00
0807294	Lights, Side Zone Lower Rear, Wln M6V2**, CCCo	NFPA	1.80	2.70	0.00
0810761	Lights, Side Zone Lower Front, Wln M6V2**, CCCo	NFPA	1.80	2.70	0.00
0811162	Light, Traffic Directing, Wln TANF85, 45.12" Long, CTA, CCTL9	NFPA	0.60	1.20	0.00
0811976	Engine, Cummins X15, 565 hp, 1850 lb-ft, W/OBD, EPA 2027,	NFPA	6.00	0.00	0.00
0814201	Vehicle Information Center, 7" Color Display, Touchscreen, MUX,	NFPA	1.20	0.00	0.00
0816093	ClearSky Telematics, Remote Fleet & On-scene Management,	NFPA	1.61	0.00	0.00
0825327	Lights, Stabilizer Warn (2) Sets, Wln M6D# DUO, CCCo	NFPA	3.30	4.95	0.00
0828276	Lightbar, Wln, Frdm Q WCXF4MINI, 2-21.5", ARWRR RRWRA,	NFPA	13.76	2.48	0.00
0828388	Light, Rear Zone Up, Wln B63M7**, Rota-Beam & M7 LED Lt, 33	NFPA	3.00	1.50	1.50
0887713	Cabinet, Forward Facing, Center, 32W x 39H x 24D, Roll, Imp/Vel	NFPA	0.48	0.48	0.00
0887714	Cabinet, Rear Facing, LS, 24 W x 34 H x 30.5 D, Radius Sp Web,	NFPA	0.56	0.56	0.00
0887715	Cabinet, Rear Facing, RS, 21.5 W x 34 H x 26.5 D, Radius Sp	NFPA	0.56	0.56	0.00
0892637	Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step	NFPA	1.00	0.00	0.00
0892656	Lights, Step (6), P25 LED, Each Side	NFPA	0.30	0.00	0.00
0647728	Alternator, 430 amp, Delco Remy 55SI	S	0.00	0.00	0.00
0821191	Wiring, Spare, 20 A 12V DC, Batt Dir, 1st NFPA1900/ULC	Mission Critical	20.00	0.00	0.00
		Load Totals:	**169.85**	**544.72**	**399.09**

Note: Minimum Continous Load is in "Blocking Right of Way" mode.(Reference current edition of NFPA 1901)
Note: Intermittent Load items are not factored in on any alternator load comparisons. These items are included on the report for reference only and should be looked at as amp draw exclusion items. (Reference current edition of NFPA 1901)
Note: Total Connected Load "Demand" represents Total Connected Load minus any Load Managed items

Alternator Output at Idle: 253.00

Minimum Continuous Load	
Supply:	253.00
Demand:	169.85
Variance:	83.15

Alternator Output at Governed Speed: 369.00

Total Connected Load	
Supply:	369.00
Demand:	371.34
Variance:	-2.34

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply

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AMP DRAW REPORT 175

Front Range Fire Apparatus is pleased to submit a proposal to Castle Rock Fire Department for a **Pierce® 105' Heavy Duty Aerial Ladder** per your request for quotation. The following paragraphs will describe in detail the apparatus, construction methods, and equipment proposed. This proposal will indicate size, type, model and make of components parts and equipment, providing proof of compliance with each and every item (except where noted) in the departments advertised specifications.

PIERCE MANUFACTURING was founded in 1913. Since then we have been building bodies with one philosophy, "BUILD THE FINEST". Our skilled craftsmen take pride in their work, which is reflected, in the final product. We have been building fire apparatus since the early "forties" giving Pierce Manufacturing over 75 years of experience in the fire apparatus market. Pierce Manufacturing has built and put into service more than 62,500 apparatus, including more than 33,900 on Pierce custom chassis designed and built specifically for fire and emergency applications. Our Appleton, Wisconsin facility has over 870,000 total square feet of floor space situated on approximately 105 acres of land. Our Bradenton, Florida facility has 300,000 square feet of floor space situated on approximately 38 acres of land.

Our beliefs in high ethical standards are carried through in all of our commitments and to everyone with whom we do business. Honesty, Integrity, Accountability and Citizenship are global tenets by which we all live and work. Consequently, we neither engage in, nor have we ever been convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

Pierce has only one brand of fire apparatus "Pierce", ensuring you are receiving top of the line product that meets your specification.

In accordance with the current edition of applicable NFPA standards, this proposal will specify whether the fire department, manufacturer, or apparatus dealership will provide required loose equipment.

Images and illustrative material in this proposal are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.

GENERAL DESIGN AND CONSTRUCTION

To control quality, ensure compatibility, and provide a single source for service and warranty, the custom cab, chassis, pump module and body will be entirely designed, assembled/welded and painted in Pierce owned manufacturing facilities. This includes, but not limited to the cab weldment, the pumphouse module assembly, the chassis assembly, the body and the electrical system.

QUALITY AND WORKMANSHIP

Pierce has set the pace for quality and workmanship in the fire apparatus field. Our tradition of building the highest quality units with craftsmen second to none has been the rule right from the beginning and we demonstrate that ongoing commitment by: Ensuring all steel welding follows American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding follows American Welding society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding follows American welding Society B2.1-2000 requirements for structural welding of

sheet metal. Our flux core arc welding uses alloy rods, type 7000 and is performed to American Welding Society standards A5.20-E70T1. Furthermore, all employees classified as welders are tested and certified to meet the American welding Society codes upon hire and every three (3) years thereafter. Pierce also employs and American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

Pierce Manufacturing operates a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International Organization for Standardization (ISO) specify the quality systems that are established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance is included with this proposal.

In addition to the Quality Management system, we also employ a Quality Achievement Supplier program to insure the vendors and suppliers that we utilize meet the high standards we demand. That is just part of our overall "Quality at the Source" program at Pierce.

To demonstrate the quality of our products and services, a list of at least fifteen (15) fire departments/municipalities that have purchased vehicles for a second time is provided.

DELIVERY

The apparatus will be delivered under its own power to insure proper break-in of all components while the apparatus is still under warranty. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

MANUAL AND SERVICE INFORMATION

At time of delivery, complete operation and maintenance manuals covering the apparatus will be provided. A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

At the time of delivery Pierce will also provide one (1) 39-minute, professionally produced apparatus safety video, in DVD format. A link to the video is also available on the Pierce Training website. This video will address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus, including the following: vehicle pre-trip inspection, chassis operation, pump operation, aerial operation, and safety during maintenance.

PERFORMANCE TESTS

A road test will be conducted with the apparatus fully loaded and a continuous run of no less than ten (10) miles. During that time the apparatus will show no loss of power nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The apparatus when fully loaded will not have less than 25 percent nor more than 50 percent on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle. The apparatus will meet the current edition of applicable NFPA standards acceleration and braking requirements.

SERVICE AND WARRANTY SUPPORT

Pierce dealership support will be provided by Front Range Fire Apparatus by operating a Pierce authorized service center. The service center will have factory-trained mechanics on staff versed in Pierce fire apparatus. The service facility will be located within seventy five (75) miles of the fire department.

In addition to the dealership, Pierce has service facilities located in both, Weyauwega, Wisconsin and Bradenton, Florida. Pierce also maintains a dedicated parts facility of over 100,000 square feet in Appleton, Wisconsin. The parts facility stocks in excess of $5,000,000 in parts dedicated to service and replacement parts. The parts facility employs a staff dedicated solely for the distribution and shipment of service and replacement parts.

Service parts for the apparatus being proposed can be found via Pierceparts.com which, is an interactive online tool that delivers information regarding your specific apparatus as well as the opportunity to register for training classes.

As a Pierce customer you have the ability to view the complete bill of materials for your specific apparatus, including assembly drawings, piece part drawings, and beneficial parts notations. You will also have the ability to search the complete Pierce item master through a parts search function which offers all Pierce SKU's and descriptions offered on all Pierce apparatus. Published component catalogs, which include proprietary systems along with an extensive operators manual library is available for easy reference.

Pierce Manufacturing maintains a dedicated service and warranty staff of over 35 personnel, dedicated to customer support, which also maintains a 24 hour 7 day a week toll free hot line, four (4) on staff EVTs, and offers hands-on repair and maintenance training classes multiple times a year.

LIABILITY

The successful bidder will defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.

INSURANCE PROVIDED BY BIDDER

COMMERCIAL GENERAL LIABILITY INSURANCE

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

Each Occurrence$1,000,000

Products/Completed Operations Aggregate$1,000,000

Personal and Advertising Injury$1,000,000

General Aggregate$2,000,000

Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form and will include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy will include Owner as an additional insured when required by written contract.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE

The successful bidder will, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage will be written on a Commercial Automobile liability form:

Each Accident Combined Single Limit:$1,000,000

UMBRELLA/EXCESS LIABILITY INSURANCE

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Aggregate:$3,000,000

Each Occurrence:$3,000,000

The umbrella policy will be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.

All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as certificate holder.

INSURANCE PROVIDED BY MANUFACTURER

PRODUCT LIABILITY INSURANCE

The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:

Each Occurrence$1,000,000

Products/Completed Operations Aggregate$1,000,000

Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form. The manufacturer's policy will include the owner as additional insured when required by written contract between the Owner and a Pierce authorized dealer.

UMBRELLA/EXCESS LIABILITY INSURANCE

The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Each Occurrence:$25,000,000

Aggregate:$25,000,000

The umbrella policy will be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.

All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as the certificate holder.

SINGLE SOURCE MANUFACTURER

Pierce Manufacturing, Inc. provides an integrated approach to the design and manufacture of our products that delivers superior apparatus and a dedicated support team. From our facilities, the chassis, cab weldment, cab, pump house (including the sheet metal enclosure, valve controls, piping and operators panel) body and aerial device will be entirely designed, tested, and hand assembled to the customer's exact specifications. The electrical system either hardwired or multiplexed, will be both designed and integrated by Pierce Manufacturing. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) will be provided by Pierce as a single source manufacturer. Pierce's single source solution adds value by providing a fully engineered product that offers durability, reliability, maintainability, performance, and a high level of quality.

Your apparatus will be manufactured in Appleton, Wisconsin.

NFPA 2024 STANDARDS

This unit will comply with the NFPA standards effective January 1, 2024, except for fire department directed exceptions. These exceptions will be set forth in the Statement of Exceptions.

Certification of slip resistance of all stepping, standing and walking surfaces will be supplied with delivery of the apparatus.

All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points will be identified on the customer approval print and are shown as approximate. Actual location(s) will be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.

A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating.

The manufacturer will have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company will designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus proposed by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications will be indicated in the proposal as "non-NFPA".

INSPECTION CERTIFICATE

A third party inspection certificate for the aerial device will be furnished upon delivery of the aerial device. The certificate will be Underwriters Laboratories Inc. Type 1 and will indicate that the aerial device has been inspected on the production line and after final assembly.

Visual structural inspections will be performed on all welds on both aluminum and steel ladders.

On critical weld areas, or on any suspected defective area, the following tests will be conducted:

- Magnetic particle inspection will be conducted on steel aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. Magnets will be placed on each side of the weld while iron powder is placed on the weld itself. The powder will detect any crack that may exist. This test will conform to ASTM E709 and be performed prior to assembly of the aerial device.
- A liquid penetrant test will be conducted on aluminum aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. This test will conform to ASTM E165 and be performed prior to assembly of the aerial device.

- Ultrasonic inspection will be conducted on all aerials to detect any flaws in pins, bolts and other critical mounting components.

In addition to the tests above, functional tests, load tests, and stability tests will be performed on all aerials. These tests will determine any unusual deflection, noise, vibration, or instability characteristics of the unit.

PUMP TEST

The pump will be tested, approved and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details will be forwarded to the Fire Department.

GENERATOR TEST

If the unit has a generator, the generator will be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results will be provided to the Fire Department at the time of delivery.

BREATHING AIR TEST

If the unit has breathing air, Pierce Manufacturing will draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection.*

VEHICLE INSPECTION PROGRAM CERTIFICATION

To assure the vehicle is built to current NFPA 1900 standards, the apparatus, in its entirety, except for the Snozzle aerial device, will be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).

A placard will be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

AFTERMARKET SUPPORT WEBSITE

Pierceparts.com will provide Pierce authorized dealer access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool will provide the Pierce authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.

Pierceparts.com is also accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized Pierce dealer for additional support and service.

The website will consist of the following screens at the dealer level:

My Fleet Screen

The My Fleet screen will provide access to truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.

Parts Screens

The Parts screens will provide parts look-up capability of Pierce Manufacturing sourced items, with the aid of digital photographs, part drawings and assembly drawings. The parts search application will permit the searching of parts by item description or function group (major system category). The parts application will provide the ability to submit electronically a parts order, parts quote, or parts return request directly to Pierce Manufacturing for processing.

Warranty Screen

The Warranty screens will provide dealers the ability to submit electronically warranty claims directly to Pierce Manufacturing for reimbursement.

My Reports Screens

The My Reports screens will provide access to multiple dealer reports to allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts.

Technical Support Screens

The Technical Support screens will provide access to all currently published Operation and Maintenance and Service Publications. Access to Pierce Manufacturing Service Bulletins and Work Instructions, containing information on current service topics and recommendations will be provided.

Training

The Training screens will provide access to upcoming training classes offered by Pierce Manufacturing along with interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components will be provided. Access to training manuals used in Pierce Manufacturing training classes will be provided.

About Pierce

Access to customer service articles, corporate news, quarterly newsletters, and key contacts within the Customer Service Department will be provided. The current Customer Service Policy and Procedure Manual, detailing the operation of the Customer Service group will also be accessible.

BID BOND NOT REQUESTED

A bid bond will not be included. If requested, the following will apply:

All bidders will provide a bid bond as security for the bid in the form of a 5 percent bid bond to accompany their bid. This bid bond will be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond will be issued by an authorized representative of the Surety Company and will be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond will include language, which assures that the bidder/principal will give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle will apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle will not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision will prevail.

PERFORMANCE BOND, 1 YEAR

The successful bidder will furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond will be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond will be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type will not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible.

If the Producer Price Index of Components for Manufacturing [www.bls.gov Series ID: WPUID6112] ("PPI") has increased at a compounded annual growth rate of 5.0% or more between the month Pierce accepts the order ("Order Month") and a month 14 months prior to the then predicted Ready For Pickup date ("Evaluation Month"), then pricing may be updated in an amount equal to the increase in PPI over 5.0% for each year or fractional year between the Order Month and the Evaluation Month.

The seller will document any such updated price for the customer's approval before proceeding and provide an option to cancel the order.

APPROVAL DRAWING

A drawing of the proposed apparatus will be prepared and provided to the purchaser for approval before construction begins. The Pierce sales representative will also be provided with a copy of the same drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus will be prepared and submitted by Pierce to the purchaser showing any changes made to the approval drawing.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, will be provided.

VELOCITY CHASSIS

The Pierce Velocity® is the custom chassis developed exclusively for the fire service. Chassis provided will be a new, tilt type custom fire apparatus. The chassis will be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis will be designed and manufactured for heavy duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required. The chassis will be the manufacturer's first line tilt cab.

WHEELBASE

The wheelbase of the vehicle will be 254.00".

GVW RATING

The gross vehicle weight rating will be 74,800 pounds.

FRAME

The chassis frame will be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails will have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail will have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails will be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT

In addition, a mainframe internal liner will be provided. The liner will be an internal "C" design that steps to an internal "L" design over the rear axle. It will be heat-treated steel measuring 12.50" x 3.00" x 0.25" through the front portion of the liner, stepping to 9.38" x 3.00" x 0.25" through the rear portion of the liner. Each liner will have a section modulus of 13.58 cubic inches, yield strength of 110,000 psi, and rbm of 1,494,042 in-lb. Total rbm at wheelbase center will be 4,391,869 in-lb.

The frame liner will be mounted inside of the chassis frame rail and extend the full length of the frame.

FRONT NON DRIVE AXLE

The Oshkosh TAK-4® front axle will be of the independent suspension design with a ground rating of 22,800 lb.

Upper and lower control arms will be used on each side of the axle. Upper control arm castings will be made of 100,000-psi yield strength 8630 steel and the lower control arm casting will be made of 55,000-psi yield ductile iron.

The center cross members and side plates will be constructed out of 80,000-psi yield strength steel.

Each control arm will be mounted to the center section using elastomer bushings. These rubber bushings will rotate on low friction plain bearings and be lubricated for life. Each bushing will also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.

There will be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.

The upper control arm will be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.

Camber at load will be 0 degrees for optimum tire life.

The ball joint bearing will be of low friction design and be maintenance free.

Toe links that are adjustable for alignment of the wheel to the center of the chassis will be provided.

The wheel ends will have little to no bump steer when the chassis encounters a hole or obstacle.

The steering linkage will provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.

The axle will have a turning angle of up to 45 degrees.

FRONT SUSPENSION

Front Oshkosh TAK-4™ independent suspension will be provided with a minimum ground rating of 22,800 lb.

The independent suspension system will be designed to provide maximum ride comfort. The design will allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

Each wheel will have torsion bar type spring. In addition, each front wheel end will also have energy absorbing jounce bumpers to prevent bottoming of the suspension.

The suspension design will be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.

The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

The independent suspension was put through a durability test that simulated 140,000 miles of inner city driving.

FRONT SHOCK ABSORBERS

KONI heavy-duty telescoping shock absorbers will be provided on the front suspension.

FRONT OIL SEALS

Oil seals with viewing window will be provided on the front axle.

FRONT TIRES

Front tires will be Goodyear 425/65R22.50 radials, 20 ply Armor MAX MSA, rated for 22,800 lb maximum axle load and 75 mph maximum speed.

The tires will be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10) stud, 11.25" bolt circle.

REAR AXLE

The rear axle will be a Meritor™, Model RT-50-160, tandem axle assembly with a capacity of 52,000 lb.

An inter-axle differential, which divides torque evenly between axles, will be provided on the rear axle with an indicator light mounted on the cab instrument panel.

TOP SPEED OF VEHICLE

NFPA 1900 and ULC 515, 2024 edition requires limits on the top speed of vehicles. NFPA 7.16.1 requires that the maximum top speed of fire apparatus with a GVWR over 33,000 lb will not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 7.16.2 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb, the maximum top speed of the apparatus will not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph, and tankers or heavy apparatus to 60 mph. By requesting an exception to this requirement, the purchasing authority is consciously choosing to operate their apparatus at speeds above the limits designated as safe speeds by the NFPA Technical Committee on Fire Department Apparatus.

The top speed of the apparatus as manufactured exceeds the NFPA requirements. Per fire department specification of a top speed that exceeds NFPA requirements, the apparatus will be non-compliant to NFPA 1900 and ULC 515 standards at time of contract execution.

The rear tires being specified have a top speed limit of 67 mph / 108 kph from the tire manufacturer.

REAR SUSPENSION

Rear suspension will be a Hendrickson Model FMX 542 EX, air ride with a ground rating of 54,000 lb. The suspension will have the following features:

- Outboard vertical mounted heavy-duty shock absorbers
- Utilizes track bars and torque rods to restrict lateral axle movement and maintain constant pinion angles
- Super heavy-duty transverse beam to help reduce axle stress while increasing roll stability or resistance to lean
- Low spring rate air springs for excellent ride quality
- Dual height control valves to maintain level vehicle from side to side

REAR OIL SEALS

Oil seals will be provided on the rear axle(s).

DRIVER CONTROL DIFFERENTIAL LOCK (DCDL)

The rear axle of the rear tandem axle will be equipped with a driver controlled differential lock (DCDL). The control will be located within easy reach of the driver.

REAR TIRES

Rear tires will be eight (8) Goodyear 12R22.50 radials, load range H, Armor Max MSD, rated for 54,240 lb maximum axle load and 68 mph maximum speed.

The tires will be mounted on Alcoa® 22.50" x 8.25" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.

TIRE BALANCE

All tires will be balanced with Counteract balancing beads. The beads will be inserted into the tire and eliminate the need for wheel weights.

TIRE PRESSURE MANAGEMENT

There will be a RealWheels© LED AirSecure tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of two (2) tires.

The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops five (5) to eight (8) psi.

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

CHROME LUG NUT COVERS

Chrome lug nut covers will be supplied on front and rear wheels.

FRONT HUB COVERS

Stainless steel hub covers will be provided on the front axle. An oil level viewing window will be provided.

MUD FLAPS

Mud flaps with a Pierce logo will be installed behind the front and rear wheels.

TIRE, AIR PRESSURE EQUALIZATION

A Crossfire air pressure equalization system will be provided on the rear dual wheels. This system will equalize the tire air pressure in the rear duals.

WHEEL CHOCKS

There will be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks, with easy-grip handle provided.

Wheel Chock Brackets

There will be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets will be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets will be mounted forward of the left side rear tire.

ELECTRONIC STABILITY CONTROL

A vehicle control system will be provided as an integral part of the ABS brake system from Meritor Wabco.

The system will monitor and update the lateral acceleration of the vehicle and compare it to a critical threshold where a side roll event may occur. If the critical threshold is met, the vehicle control system will automatically reduce engine RPM, engage the engine retarder (if equipped), and selectively apply brakes to the individual wheel ends of the front and rear axles to reduce the possibility of a side roll event.

The system will monitor directional stability through a lateral accelerometer, steer angle sensor and yaw rate sensor. If spinout or drift out is detected, the vehicle control system will selectively apply brakes to the individual wheel ends of the front and rear axles to bring the vehicle back to its intended direction.

ANTI-LOCK BRAKE SYSTEM

The vehicle will be equipped with a Wabco 6S6M, anti-lock braking system. The ABS will provide a six (6) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology will control the anti-lock braking system. Each wheel will be monitored by the system. When any wheel begins to lockup, a signal will be sent to the control unit. This control unit will then reduce the braking of that wheel for a fraction of a second and then reapply

the brake. This anti-lock brake system will eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

AUTOMATIC TRACTION CONTROL

An anti-slip feature will be included with the ABS. The Automatic Traction Control will be used for traction in poor road and weather conditions. The Automatic Traction Control will act as an electronic differential lock that will not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) will work with the engine ECU, sharing information concerning wheel slip. Engine ECU will use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. An "off road traction" switch will be provided on the instrument panel. Activation of the switch will allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

BRAKES

The service brake system will be full air type.

The front brakes will be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system will be certified, third party inspected, for improved stopping distance.

The rear brakes will be Meritor™, Disc Plus, EX225 disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.

BRAKE SYSTEM AIR COMPRESSOR

The air compressor will be a Cummins/WABCO with 18.7 cubic feet per minute output.

BRAKE SYSTEM

The brake system will include:

- Bendix dual brake treadle valve
- Heated automatic moisture ejector on air dryer
- Total air system capacity of 6,653 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, will be provided with an automatic spring brake application at 40 psi
- A pressure protection valve will be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa).
- Quarter turn drain valves on each air tank

The air tank will be primed and painted to meet a minimum 750 hour salt spray test.

The air tanks will be painted same as frame color.

To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

BRAKE SYSTEM AIR DRYER

The air dryer will be a Bendix AD-IP, with coalescing filter and heater.

BRAKE LINES

Color-coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.

AIR INLET

One (1) air inlet with 3D series male coupling will be provided. It will allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet will be located forward in the driver side lower step well of cab. A check valve will be provided to prevent reverse flow of air. The inlet will discharge into the "wet" tank of the brake system. A mating female fitting will also be provided with the loose equipment.

AIR HOSE

There will be one (1) 25' length(s) of air hose furnished with fittings.

An air chuck will be provided with the air hose. The air chuck will fit the valve stems that are provided on the tires.

ALL WHEEL LOCK-UP

An additional all wheel lock-up system will be installed which applies air to the front brakes only. The front brakes will be applied with a switch on the instrument panel.

The standard spring brake control valve system will be used for the rear.

ADDITIONAL AIR TANK FOR AIR HORN

An additional air tank with 1,454 cubic inch displacement will be provided to increase the capacity of the air system. This tank will be dedicated for air horn use.

The air tank will be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

The air tank(s) will be painted same as frame color.

The output flow of the engine air compressor varies with engine rpm. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.

LABEL, AIR TANKS

There will be a stick-on style label provided on all of the chassis air tanks to identify the function a particular tank provides to the chassis (quick build up, isolated, chassis air supply, etc.).

ENGINE

The chassis will be powered by an electronically controlled engine as described below:

Make:	Cummins®
Model:	X15
Power:	565 hp at 1700 rpm
Torque:	1850 lb-ft at 1150 rpm
Governed Speed:	2100 rpm
Emissions Level:	EPA 2027
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	912 cubic inches (14.9L)
Starter:	Delco 39MT+™
Fuel Filters:	Frame mounted spin-on style filter from Cummins®.

The engine will include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected.

The engine will be filled with FA-4 10W30 oil as required by Cummins.

REMOTE MOUNTED ENGINE FILTERS

The engine fuel and oil filters will be remote mounted for ease of maintenance.

HIGH IDLE

A high idle switch will be provided, inside the cab, on the instrument panel, that will automatically maintain a preset engine rpm. A switch will be installed, at the cab instrument panel, for activation/deactivation.

The high idle will be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light will be provided, adjacent to the switch. The light will illuminate when the above conditions are met. The light will be labeled "OK to Engage High Idle."

ENGINE BRAKE

A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver will be able to turn the engine brake system on/off and have a high, medium and low setting.

The engine brake will activate when the system is on and the throttle is released.

The high setting of the brake application will activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.

The engine brake will be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.

The ABS system will automatically disengage the auxiliary braking device, when required.

CLUTCH FAN

A Horton® fan clutch will be provided. The fan clutch will be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.

ENGINE AIR INTAKE

An air intake with an ember separator (to prevent road dirt, burning embers, and recirculating hot air from entering the engine) will be mounted at the front of the apparatus, on the passenger side of the engine. The ember separator will be mounted in the air intake with flame retardant, roto-molded polyethylene housing. It will be easily accessible by the hinged access panel at the front of the vehicle.

EXHAUST SYSTEM

The exhaust system will be stainless steel from the turbo to the engine's aftertreatment device. The exhaust system will include an aftertreatment device to meet current EPA standards. An insulation wrap will be provided on all exhaust pipe between the turbo and the aftertreatment device to minimize the transfer of heat to the cab.

The exhaust will terminate horizontally ahead of the right side rear wheels and will extend 2.00" past the body rub rail. The exhaust pipes will be aluminized steel.

There will be an aluminized steel exhaust diffuser with a standard straight tip on the end provided to reduce the temperature of the exhaust as it exits. Heat deflector shields will be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

EXHAUST MODIFICATION

An adapter for the Nederman exhaust extraction system will be provided on the end of the tail pipe.

There will be a 1-piece Nederman nozzle anchor plate provided The exhaust pipe will be brought straight out from under the body. The exhaust pipe will extend a maximum of 2.00" past the body side. The diameter of the diffuser will be 7.00"..

RADIATOR

The radiator and the complete cooling system will meet or exceed the current edition of applicable NFPA and engine manufacturer cooling system standards.

For maximum corrosion resistance and cooling performance, the entire radiator core will be constructed using long life aluminum alloy. The core will be made of aluminum fins, having a serpentine design,

brazed to aluminum tubes. The tubes will be brazed to aluminum headers. The radiator core will have a minimum frontal area of 1434 square inches. Supply tank made of glass-reinforced nylon and a return tank of cast aluminum alloy will be crimped on to the core assembly using header tabs and a compression gasket to complete the radiator core assembly. The radiator will be compatible with commercial antifreeze solutions.

There will be a full steel frame around the entire radiator core assembly. The radiator core assembly will be isolated within the steel frame by rubber inserts to enhance cooling system durability and reliability. The radiator will be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly will be isolated from the chassis frame rails with rubber isolators.

The radiator assembly will include an integral de-aeration tank permanently mounted to the top of the radiator framework, with a readily accessible remote-mounted overflow tank. For visual coolant level inspection, the radiator will have a built-in sight glass. The radiator will be equipped with a 15 psi pressure relief cap.

A drain port will be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

A heavy-duty fan will draw in fresh, cool air through the radiator. Shields or baffles will be provided to prevent recirculation of hot air to the inlet side of the radiator.

COOLANT LINES

Gates, or Goodyear, rubber hose will be used for all engine coolant lines installed by the chassis manufacturer.

Hose clamps will be stainless steel "constant torque type" to prevent coolant leakage. They will react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

FUEL TANK

A 65 gallon fuel tank will be provided and mounted at the rear of the chassis. The tank will be constructed of aluminum. It will be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank will be mounted with stainless steel straps.

A .75" drain plug will be located in a low point of the tank for drainage.

The engine fuel fill inlet will be located adjacent to the DEF inlet and a single air bottle behind a common door on the driver side of the vehicle. The fuel fill inlet will be marked "Ultra Low Sulfur - Diesel Fuel Only."

A .50" diameter vent will be installed from tank top to just below fuel fill inlet.

The fuel tank will meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.

All fuel lines will be provided as recommended by the engine manufacturer.

DIESEL EXHAUST FLUID TANK

A 4.5 gallon diesel exhaust fluid (DEF) tank will be provided and mounted in the left side body forward of the rear axle.

A 0.50" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be provided and marked "Diesel Exhaust Fluid Only". The fill inlet will be located below the air bottle storage behind a common door on the left side of the vehicle.

The tank will meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank will include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

FUEL PRIMING PUMP

A Cummins automatic electronic fuel priming pump will be integrated as part of the engine.

FUEL SHUTOFF

A fuel line shutoff valve will be installed on both the inlet and outlet of the primary fuel filter.

FUEL COOLER

An air to fuel cooler will be installed in the engine fuel return line.

FUEL SEPARATOR

The engine will be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.

TRANSMISSION

An Allison 6th generation, Model EVS 4500P, electronic, torque converting, automatic transmission will be provided.

The transmission will be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display will indicate when service is due.

Two (2) PTO openings will be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with amber light and buzzer will be installed on the cab instrument panel.

TRANSMISSION SHIFTER

A six (6)-speed push button shift module with five (5) + one (1) "Mode" selector will be mounted to right of driver on console. Shift position indicator will be indirectly lit for after dark operation.

The transmission ratio will be 1st - 4.70 to 1.00, 2nd - 2.21 to 1.00, 3rd - 1.53 to 1.00, 4th - 1.00 to 1.00, 5th - 0.76 to 1.00, 6th - 0.67 to 1.00, R - 5.55 to 1.00.

TRANSMISSION PROGRAMMING

The transmission will be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety.

TRANSMISSION COOLER

A Modine plate and fin transmission oil cooler will be provided using engine coolant to control the transmission oil temperature.

DOWNSHIFT MODE (W/ENGINE BRAKE)

The transmission will be provided with an aggressive downshift mode.

This will provide earlier transmission downshifts to 2nd gear from 6th gear, resulting in improved engine braking performance.

DRIVELINE

Drivelines will be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.

The shafts will be dynamically balanced before installation.

A splined slip joint will be provided in each driveshaft where the driveline design requires it. The slip joint will be coated with Glidecoat® or equivalent.

STEERING

Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, will be provided. For reduced system temperatures, the power steering will incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines will have wire braded lines with crimped fittings.

A tilt and telescopic steering column will be provided to improve fit for a broader range of driver configurations.

STEERING WHEEL

The steering wheel will be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.

LOGO AND CUSTOMER DESIGNATION ON DASH

The dash panel will have an emblem containing the Pierce logo and customer name. The emblem will have three (3) rows of text for the customer's department name. There will be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.

The first row of text will be: Castle

The second row of text will be: Rock

The third row of text will be: Fire Rescue

BUMPER

A 1-piece bumper manufactured from 0.25" formed steel with a 0.38" bend radius will be provided. The bumper will be a minimum of 12.00" high with a 1.50" top and bottom flange, and will extend 10.00" from the face of the cab. The bumper will be 102.00" wide with 45 degree corners. The bumper will be metal finished and painted job color.

To provide adequate support strength, the bumper will be mounted directly to the front of the C channel frame. The frame will be a bolted modular extension frame constructed of 50,000 psi tensile steel.

Gravel Pan

A gravel pan, constructed of bright aluminum treadplate, will be furnished between the bumper and the cab face. The pan will be properly supported from the underside to prevent flexing and vibration.

Documentation will be provided, upon request to show that the options selected have been engineered for fit up and approval for this modular bumper extension. A chart will be provided to indicate the option locations and will include but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays with hose capacities, winches, lights, discharge and suction connections.

LIFT AND TOW MOUNTS

Mounted to the frame extension will be lift and tow mounts. The lift and tow mounts will be designed and positioned to adapt to certain tow truck lift systems.

The lift and tow mounts with eyes will be painted the same color as the frame.

TOW EYES

Two (2) Chicago style tow eyes will be mounted through the top of the bumper extension. The inner and outer edges of the tow eyes will have a .25" radius.

The tow eyes will be designed and positioned to allow up to a 6,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow eyes will not be used for lifting of the apparatus.

The tow eyes will be painted same color as frame.

RHINO COATING - FRONT BUMPER

Protective black Rhino Linings® coating will be provided on the outside exterior of the top front bumper flange. It will not be sprayed on the underside of the flange.

The lining will be properly installed by an authorized Rhino Linings® dealer.

CAB

The Velocity cab will be designed specifically for the fire service and will be manufactured by Pierce Manufacturing.

To provide quality at the source and single source customer support, the cab will be built by the apparatus manufacturer in a facility located on the manufacturer's premises.

For reasons of structural integrity and enhanced occupant protection, the cab will be of heavy duty design, constructed to the following minimal standards.

The cab will have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar will be constructed of 0.25" heavy wall extrusions joined by a solid A356-T6 aluminum joint casting. The B-pillar and C-pillar will also be constructed from 0.25" heavy wall extrusions. The rear wall will be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members will run from the floor to 7.50" x 3.50" x 0.125" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.75" thick corner casting at each of the front corners of the roof assembly.

The front of the cab will be constructed of a 0.25" thick firewall, covered with a 0.125" front skin (for a total thickness of 0.38"), and reinforced with 24.50" wide x 10.00" deep x 0.50" thick supports on each side of the engine tunnel. The cross-cab support will be welded to the A-pillar, 0.25" firewall, and engine tunnel, on the left and right sides.

The cab floors will be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.44" of structural material at the front floor area. The front floor area will also be supported with three (3) 0.50" plates bolted together that also provides the mounting point for the cab lift. This tubing will run from the front of the cab to the 0.1875" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab will be a full-tilt style. A 3-point cab mount system with rubber isolators will improve ride quality by isolating chassis vibrations from the cab.

The crew cab will be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.

The centerline of front axle to the rear of the cab will be 70.00" long.

The forward cab section will have an overall height (from the cab roof to the ground) of approximately 102.00". The crew cab section will have a 10.00" raised roof, with an overall cab height of approximately 112.00". The raised portion will start at the most forward point of the B-pillar and continue rearward to the back of the cab. The overall height listed will be calculated based on a truck

configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension will increase the overall height listed.

The raised roof section of the crew cab will have a 58.00" wide x 10.00" high square notch in the center section of the roof. This will allow the aerial device to be bedded in the same location as a non-raised roof.

The cab will have an interior width of not less than 93.50". The driver and passenger seating positions will have a minimum 24.00" clear width at knee level.

To reduce injuries to occupants in the seated positions, proper head clearance will be provided. The floor-to-ceiling height inside the forward cab will be no less than 60.25". The floor-to-ceiling height inside the crew cab will be no less than 52.95" in the center position and 68.75" in the outboard positions.

The crew cab will measure a minimum of 57.50" from the rear wall to the backside of the engine tunnel (knee level) for optimal occupant legroom.

CAB PUMP ENCLOSURE

The rear of the cab will be made to house the fire pump below the forward facing crew cab seats. The cab side panels will be notched to accommodate the pump panel.

FENDER LINERS

Full-circular, aluminum inner fender liners in the wheel wells will be provided.

PANORAMIC WINDSHIELD

A one (1)-piece, safety glass windshield with more than 2,802 square inches of clear viewing area will be provided. The windshield will be full width and will provide the occupants with a panoramic view. The windshield will consist of three (3) layers: the outer light, the middle safety laminate, and the inner light. The 0.114" thick outer light layer will provide superior chip resistance. The middle safety laminate layer will prevent the windshield glass pieces from detaching in the event of breakage. The inner light will provide yet another chip resistant layer. The cab windshield will be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern will be applied on the outside perimeter of the windshield for a finished automotive appearance.

WINDSHIELD WIPERS

Three (3) electric windshield wipers with a washer, in conformance with FMVSS and SAE requirements, will be provided. The wiper blades will be 21.65" long and together will clear a minimum of 1,783 square inches of the windshield for maximum visibility in inclement weather.

The windshield washer fluid reservoir will be located at the front of the vehicle and be accessible through the access hood for simple maintenance.

FAST SERVICE ACCESS FRONT TILT HOOD

A full-width access hood will be provided for convenient access to engine coolant, steering fluid, wiper fluid, cab lift controls, headlight power modules, and ember separator. The hood will also provide complete access to the windshield wiper motor and components. The hood will be contoured to provide a sleek, automotive appearance. The hood will be constructed of two (2) fiberglass panels bonded together and will include reinforcing ribs for structural integrity. The hood will include air cylinders to hold the hood in open and closed positions, and a heavy duty latch system that will meet FMVSS 113 (Hood Latch System). The spring-loaded hood latch will be located at the center of the hood with a double-action release lever located behind the Pierce logo. The two (2)-step release requires the lever first be pulled to the driver side until the hood releases from the first latch (primary latch) then to the passenger side to fully release the hood (secondary latch).

ENGINE TUNNEL

To provide structural strength, the engine tunnel sidewalls will be constructed of 0.50" aluminum plate that is welded to both the 0.25" firewall and 0.38" heavy wall extrusion under the crew cab floor. To maximize occupant space, the top edges will be tapered.

The engine tunnel will be insulated for protection from heat and sound. Perforated foil faced insulation will be over a 1.00" thick closed cell foam affixed with pressure sensitive adhesive and further secured with mechanical fasteners. Thermal rating for this insulation will be -40 degrees Fahrenheit to 300 degrees Fahrenheit. The noise insulation keeps the dBA level within the limits stated in the current edition of applicable NFPA standards.

INTERIOR CAB INSULATION

The cab will include 1.50" insulation in the ceiling, 3.00" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.

CAB REAR WALL EXTERIOR COVERING

The exterior surface of the rear wall of the cab will be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.

CAB LIFT

A hydraulic cab lift system will be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves. The hydraulic pump will have a backup manual override, for use in the event of an electrical failure.

The cab lift controls will be located at the driver side front of the cab, easily accessible under the full width front access hood. The controls will include a permanently mounted raise/lower switch. For enhanced visibility during cab tilt operations, a remote control tether with on/off switch will be supplied on a coiled cord that will extend from 2.00' (coiled) to 6.00' (extended).

The cab will be capable of tilting 42 degrees and 80 degrees with crane assist to accommodate engine maintenance and removal. The cab pivots will be located 46.00" apart to provide stability while tilting the cab.

The rear of the cab will be locked down by a two (2)-point, automatic, hydraulic, double hook mechanism that fully engages after the cab has been lowered (self-locking). The dual 2.25" diameter hydraulic cylinders will be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position.

For increased safety, a redundant mechanical stay arm will be provided that must be manually put in place on the driver side between the chassis and cab frame when cab is in the raised position. This device will be manually stowed to its original position before the cab can be lowered.

Cab Lift Interlock

The cab lift safety system will be interlocked to the parking brake. The cab tilt mechanism will be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism will be disabled.

GRILLE

A bright finished aluminum mesh grille screen, inserted behind a formed bright finished grille surround, will be provided on the front center of the cab, and will serve as an air intake to the radiator.

DOOR JAMB SCUFFPLATES

All cab door jambs will be furnished with a 1.00" brushed stainless steel scuffplate, mounted on the striker side of the jamb.

FRONT CAB TRIM

There will be polished stainless steel rectangular garnish plates installed behind the two (2) headlight bezels for an enhanced appearance.

There will be no covers provided over the painted cab corner where the cab turn signals are located.

SIDE OF CAB MOLDING

Chrome molding will be provided on both sides of cab.

MIRRORS

A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, will be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass will be heated and adjustable with remote control within reach of the driver.

FRONT CROSS VIEW MIRROR

An 8.00" diameter convex mirror will be provided over the officer's side front corner of the cab. The mirror will provide the driver with a view of the front bumper and the area several feet in front of the truck.

The mirror housing, tubing, clamps, and hardware will be constructed of corrosion resistant stainless steel.

CAB DOORS

The forward cab and crew cab doors will be the half-height style door. To enhance entry and egress to the cab, the forward cab doors will be a minimum of 43.59" wide x 64.71" high. The crew cab doors will measure a minimum of 37.87" wide x 73.75" high.

The forward cab and crew cab doors will be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins will be constructed from 0.090" aluminum.

The forward cab door windows will include a 7.50" high x 10.00" wide drop area at the front to enhance visibility.

A customized, vertical, pull-down type door handle will be provided on the exterior of each cab door. The finish of the door handle will be chrome/black. The exterior handle will be designed specifically for the fire service to prevent accidental activation, and will provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.

Each door will also be provided with an interior flush, open style paddle handle that will be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles will provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.

The cab doors will be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys will be Model 751. The locks will be capable of activating when the doors are open or closed. The doors will remain locked if locks are activated when the doors are opened, then closed.

A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf will be provided on all cab doors. There will be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.

A chrome grab handle will be provided on the inside of each cab and crew cab door.

A red webbed grab handle will be installed on the crew cab door stop strap. The grab handles will be securely mounted.

The cab steps at each cab door location will be located below the cab doors and will be exposed to the exterior of the cab.

Door Panels

The inner cab door panels will be constructed out of brushed stainless steel. The cab door panels will be removable.

BLANK FACE PLATE

Blank face plate/s will be provided, in place of standard storage pockets, within the overhead console.

ELECTRIC WINDOW CONTROLS

Each cab entry door will be equipped with an electrically operated tempered glass window. A window control panel will be located on the door panel within easy reach of the respective occupant. Each switch will allow intermittent or auto down operation for ease of use. Auto down operation will be actuated by holding the window down switch for approximately 1 second. The driver control panel will contain a control switch for each cab door's window. All other door control panels will contain a single switch to operate the window within that door.

The window switches will be connected directly to the battery power. This allows the windows to be raised and lowered when the battery switch is in the off position.

ELECTRIC CAB DOOR LOCKS

The front driver and passenger doors will have a door lock master switch (custom designed rotary lock knob) built into the interior door latch that will control all front and rear side exit door locks. Each rear cab door will have its own lock control. Each door will have a keyed exterior lock mechanism built into the door handle assembly.

There will be one (1) concealed switch on the exterior of the cab, located under the front full width service access panel, that operates the cab door locks.

The lock system will include two (2) key FOBs that allow for keyless entry into the vehicle. The key FOB system will use code hopping technology for high security and be FCC part 15 compliant.

CAB STEPS

The forward cab and crew cab access steps will be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps will be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps will be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps will be a minimum 31.00" wide, and the crew cab steps will be 24.25" wide with an 8.00" minimum depth. The inside cab steps will not exceed 18.00" in height and be limited to two (2) steps.

CAB EXTERIOR HANDRAILS

A 1.25" diameter slip-resistant, knurled aluminum handrail will be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.

STEP LIGHTS

There will be four (4) white P25 LED step lights provided. The lights will be installed at each cab and crew cab door, one (1) per step. The lights will be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

The light(s) will have a chrome housing.

The lights will be activated when the adjacent door is opened.

FENDER CROWNS

Stainless steel fender crowns will be installed at the cab wheel openings. The fender crowns will have a radius outside corner that will allow the fender crown to extend out further than the standard width crown, thus extending beyond the sidewall of the front tires and allow the crew cab doors to open fully.

WEBBED GRAB HANDLE ON INTERIOR CAB DOORS

Installed on the interior of the driver and officer cab door stop strap will be a red webbed grab handle. The grab handles will be securely mounted.

LEFT SIDE UPPER CREW CAB DOOR WINDOW TINT

The upper window in the left side crew cab door will be tinted medium gray.

RIGHT SIDE ROLLUP CREW CAB DOOR WINDOW TINT

The rollup window in the right side crew cab door will be tinted medium gray.

RIGHT SIDE UPPER CREW CAB DOOR WINDOW TINT

The upper window in the right side crew cab door will be tinted medium gray.

LEFT SIDE ROLLUP CREW CAB DOOR WINDOW TINT

The rollup window in the left side crew cab door will be tinted medium gray.

PIKE POLE MOUNTING

A total of two (2) set(s) of Fire Hooks Unlimited, model Hooks Nest 4 and PAC Handlelok, model 1004, mounting brackets will be provided for the mounting of Fire Hooks Unlimited pike poles. The Hooks Nest 4 head bracket will be used to secure the upper portion of the pike pole in conjunction with the Handlelok to secure the handle of the pike pole. The lower pinned portion of the Nest 4 bracket will be shipped with loose equipment. The brackets will be installed rear of cab each side, as high and outboard as possible.

MOUNTING PLATE ON ENGINE TUNNEL

Equipment installation provisions will be installed on the engine tunnel.

A .188" smooth aluminum plate will be bolted to the top surface of the engine tunnel. The plate will be located to the left of the officer and on the rear of the tunnel. It will follow the contour of the engine tunnel and will run the entire length of the engine tunnel. The edges on all sides, including left, right, front and back will be kinked downward so that items do not slip under the plate. The plate will be spaced off the engine tunnel .75" to allow for wire routing below the plate.

The mounting surface will be painted to match the cab interior.

CAB INTERIOR

With safety as the primary objective, the wrap-around style cab instrument panel will be designed with unobstructed visibility to instrumentation. The dash layout will provide the driver with a quick reference to gauges that allows more time to focus on the road.

The center console will be a high impact ABS polymer and will be easily removable.

The passenger side dashboard will be constructed of painted aluminum for durability and low maintenance. For enhanced versatility, the passenger side dash will include a flat working surface.

To provide optional (service friendly) control panels, switches and storage modules, a painted aluminum overhead console will also be provided.

To complete the cab front interior design, painted aluminum modesty panels will be provided under the dash on both sides of the cab. The driver side modesty panel will provide mounting for the battery switch and diagnostic connectors, while the passenger side modesty panel provides a glove box, and ground access to the main electrical distribution panel via quick quarter turn fasteners.

To provide a deluxe automotive interior, the engine tunnel, side walls and rear wall will be covered by a leather grain vinyl that is resistant to oil, grease, and mildew.

The headliner will be installed in both forward and rear cab sections. The headliner panel will be a composition of an aluminum panel covered with a sound barrier and upholstery.

The cab structure will include designated raceways for electrical harness routing from the front of the cab to the rear upper portion of the cab. Raceways will be extruded in the forward door frame, floor, walls and overhead in the area where the walls meet the ceiling. The raceways located in the floor will be covered by aluminum extrusion, while the vertical and overhead raceways will be covered by painted aluminum covers. The raceways will improve harness integrity by providing a continuous harness path that eliminates wire chafing and abrasion associated with exposed wiring or routing through drilled metal holes. Harnesses will be laid in place.

CAB INTERIOR UPHOLSTERY

The cab interior upholstery will be 36 oz dark silver gray vinyl. All cab interior materials will meet FMVSS 302 (flammability of interior materials).

CAB INTERIOR PAINT

The following metal surfaces will be painted black, vinyl textured paint:

- Modesty panel in front of driver
- Vertical surface of dash in front of the officer (not applicable for recessed dash)
- Glove box in front of the officer (if applicable)
- Power distribution in front of the officer
- Rear heater vent panels

The remaining cab interior metal surfaces will be painted fire smoke gray, vinyl texture paint.

CAB FLOOR

The cab and crew cab floor areas will be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.

The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.

DEFROST/AIR CONDITIONING SYSTEM

A ceiling mounted combination heater, defroster and air conditioning system will be installed in the cab above the engine tunnel area.

Cab Defroster

A 54,000 BTU heater-defroster unit with 690 SCFM of air flow will be provided inside the cab. The heater-defrost will be installed in the forward portion of the cab ceiling. Air outlets will be strategically located in the cab header extrusion per the following:

- One (1) adjustable will be directed towards the left side cab window
- One (1) adjustable will be directed towards the right side cab window
- Six (6) fixed outlets will be directed at the windshield

The defroster will be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system will meet or exceed SAE J382 requirements.

Cab/Crew Auxiliary Heater

There will be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat riser with a dual scroll blower. An aluminum plenum incorporated into the cab structure to be used to transfer heat to the forward positions.

Air Conditioning

A 19.10 cubic inch compressor will be installed on the engine.

A roof-mounted condenser with a 78,000 BTU output at 2,400 SCFM that meets and exceeds the performance specification will be installed on the cab roof. The condenser cover to be painted to match the cab roof.

The air conditioning system will be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test will be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.

The evaporator unit will be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator will include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

The evaporator unit will have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.

Adjustable air outlets will be strategically located on the forward plenum cover per the following:

- Four (4) will be directed towards the seating position on the left side of the cab
- Four (4) will be directed towards the seating position on the right side of the cab

Adjustable air outlets will be strategically located on the evaporator cover per the following:

- Five (5) will be directed towards crew cab area

A high efficiency particulate air (HEPA) filter will be included for the system. Access to the filter cover will be secured with four (4) screws.

The air conditioner refrigerant will be R-134A and will be installed by a certified technician.

Climate Control

An automotive style controller will be provided to control the heat and air conditioning system within the cab. The controller will have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.

The system will control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.

The AC system will be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob will engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.

Gravity Drain Tubes

Two (2) condensate drain tubes will be provided for the air conditioning evaporator. The drip pan will have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps will be provided.

The drain tubes will terminate under the cab, on the inboard side of the front wheelwells.

WINDOW DEFROST FANS

Two (2) window defrost fans will be mounted on the ceiling of the cab, located each side on the overhead console.

SUN VISORS

Two (2) smoked Lexan™ sun visors will be provided. The sun visors will be located above the windshield with one (1) mounted on each side of the cab.

There will be no retention bracket provided to help secure each sun visor in the stowed position.

GRAB HANDLE

A black rubber covered grab handle will be mounted on the door post of the driver side and passenger side cab door to assist in entering the cab. The grab handle will be securely mounted to the post area between the door and windshield.

ENGINE COMPARTMENT LIGHTS

Two (2) engine compartment lights will be installed under the engine hood, with an integral switch. The lights will have a .125" diameter hole in its lens to prevent moisture retention.

ACCESS TO ENGINE DIPSTICKS

For access to the engine oil and transmission fluid dipsticks, there will be a door on the engine tunnel, inside the crew cab. The door will be on the rear wall of the engine tunnel, on the vertical surface. The door will be flush with the wall of the engine tunnel.

The engine oil dipstick will allow for checking only. The transmission dipstick will allow for both checking and filling. An additional port will be provided for filling the engine oil.

The door will have a rubber seal for thermal and acoustic insulation. One (1) flush lift and turn latch will be provided on the access door.

STORAGE BOX

There will be four (4) storage box(es) designed to hold and dispense boxes of latex gloves provided. Each box will have four (4) sides. One (1) side will be hinged with a latch so the latex gloves box can be changed when empty.

Each box will be constructed of aluminum and located Next to driver and office in cab and on inside vertical surface of the rear facing EMS cabinets. see pictures of 30369 previous unit..

Each storage box will be 10.00" wide x 5.00" deep x 3.50" high and painted to match the cab interior. A slot will be provided on the top of each box to dispense the gloves.

MAP BOX

A map box with four (4) bins, open from top, will be installed vertically on the EMS compartments facing the engine tunnel. The map box will be divided into four (4) bins, each being 12.50" wide x 2.25" high x 12.00" deep. Each bin will slant 30 degrees from horizontal. The sides of the top bin will have rounded corners.

The map box top will be finished and include a small storage area and cup holder hole. The cup holder hole will be 3.75" in diameter and toward the crew cab.

The map box will be constructed of 0.125" aluminum and will be painted to match the cab interior.

There will be two (2) map boxes provided.

CAB SAFETY SYSTEM

The cab will be provided with a safety system designed to protect occupants in the event of a side roll or frontal impact, and will include the following:

- A supplemental restraint system (SRS) sensor will be installed on a structural cab member behind the instrument panel. The SRS sensor will perform real time diagnostics of all critical subsystems and will record sensory inputs immediately before and during a side roll or frontal impact event.
- A slave SRS sensor will be installed in the cab to provide capacity for eight (8) crew cab seating positions.
- A fault-indicating light will be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.
- A driver side front air bag will be mounted in the steering wheel and will be designed to protect the head and upper torso of the occupant, when used in combination with the 3-point seat belt.
- A passenger side knee bolster air bag will be mounted in the modesty panel below the dash panel and will be designed to protect the legs of the occupant, when used in combination with the 3-point seat belt.
- Air curtains will be provided in the outboard bolster of outboard seat backs to provide a cushion between occupant and the cab wall.
- Suspension seats will be provided with devices to retract them to the lowest travel position during a side roll or frontal impact event.
- Seat belts will be provided with pre-tensioners to remove slack from the seat belt during a side roll or frontal impact event.

Frontal Impact Protection

The SRS system will provide protection during a frontal or oblique impact event. The system will activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis will have been subjected, via third party test facility, to a crash impact

during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor will activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected.

The SRS system will deploy the following components in the event of a frontal or oblique impact event:

- Driver side front air bag
- Passenger side knee bolster air bag
- Air curtains mounted in the outboard bolster of outboard seat backs
- Suspension seats will be retracted to the lowest travel position
- Seat belts will be pre-tensioned to firmly hold the occupant in place

Side Roll Protection

The SRS system will provide protection during a fast or slow 90 degree roll to the side, in which the vehicle comes to rest on its side. The system will analyze the vehicle's angle and rate of roll to determine the optimal activation of the advanced occupant restraints.

The SRS system will deploy the following components in the event of a side roll:

- Air curtains mounted in the outboard bolster of outboard seat backs
- Suspension seats will be retracted to the lowest travel position
- Seat belts will be pre-tensioned to firmly hold the occupant in place

SEATING CAPACITY

The seating capacity of the vehicle (including tiller cab and belted seat positions in the rescue body) will be four (4).

DRIVER SEAT

A Pierce PS6® seat will be provided in the cab for the driver. The seat will be a cam action type, with air suspension. For increased convenience, the seat will include manual controls to adjust the height (1.12" travel) and horizontal (6.00" travel) position. The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat will have a reclining back adjustable from 20 degrees back to 45 degrees forward. The seat back will be a high back style, and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep foam cushions.

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.

- A suspension seat safety system will be included. When activated in the event of a side roll, this system will pretension the seat belt and retract the seat to its lowest travel position.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

OFFICER SEAT

A Pierce PS6® seat will be provided in the cab for the officer. The seat will be a fixed type, with no suspension. For optimal comfort, the seat will be provided with 17.00" deep foam cushions. To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled. The seat back will be an SCBA back style with 7.5 degree fixed recline angle, and will include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A seat safety system will be included. When activated, this system will pretension the seat belt.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

RADIO COMPARTMENT

A compartment for the radio amplifier will be located under the front passenger's seat. The size of the compartment will be approximately 16.00" wide x 7.50" high x 16.50" deep. A drop-down door with a chrome plated, flush lift and turn latch will be provided for access. The compartment will be constructed of smooth aluminum and painted to match the cab interior.

REAR FACING LEFT SIDE CABINET

A rear facing cabinet will be provided in the crew cab at the left side outboard position with interior and exterior access.

The cabinet will be 24.00" wide x 34.00" high x 30.50" deep. The interior door will be web netting. The netting is to be made with 1.00" wide nylon material with 2.00" openings. Front top corners of cabinet will be radiused. This will allow access through the front and top section of the cabinet. Heavy nylon webbing will be provided over the opening with Velcro® strap fasteners each side.The clear door opening will be 19.25" wide x 33.75" high.

The cabinet will include one (1) infinitely adjustable shelf with a 0.75" up-turned lippainted to match the cab interior.

The cabinet will include no louvers.

The cabinet will also provide exterior access with one (1) double pan door painted to match the cab exterior with a non-locking D-ring latch. A web strap will be provided as a door stop. The clear door opening will 19.75" wide x 31.50" high.

The exterior access will be provided with a brushed stainless steel scuffplate on the lower door frame.

The cabinet will be constructed of smooth aluminum and painted to match the cab interior.

Cabinet Light

There will be one (1) white LED strip light installed on the right side of the interior cabinet door opening and one (1) white LED strip light installed on the left side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch and a rocker switch on the front of the cabinet.

REAR FACING RIGHT SIDE CABINET

A rear facing cabinet will be provided in the crew cab at the right side outboard position with interior and exterior access.

The cabinet will be 21.50" wide x 34.00" high x 26.50" deep. The interior door will be web netting. The netting is to be made with 1.00" wide nylon material with 2.00" openings. Front top corners of cabinet will be radiused. This will allow access through the front and top section of the cabinet. Heavy nylon webbing will be provided over the opening with Velcro® strap fasteners each side.The clear door opening will be 16.75" wide x 33.75" high.

The cabinet will include one (1) infinitely adjustable shelf with a 0.75" up-turned lippainted to match the cab interior.

The cabinet will include no louvers.

The cabinet will also provide exterior access with one (1) double pan door painted to match the cab exterior with a non-locking D-ring latch. A web strap will be provided as a door stop. The clear door opening will 16.00" wide x 31.50" high.

The exterior access will be provided with a brushed stainless steel scuffplate on the lower door frame.

The cabinet will be constructed of smooth aluminum and painted to match the cab interior.

Cabinet Light

There will be one (1) white LED strip light installed on the right side of the interior cabinet door opening and one (1) white LED strip light installed on the left side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch and a rocker switch on the front of the cabinet.

FORWARD FACING DRIVER SIDE OUTBOARD SEAT

There will be one (1) forward facing Pierce PS6® seat provided at the driver side outboard position in the crew cab. To provide improved ride comfort, and maximize accessibility to the crew cab, the seat will be provided with 15.00" deep foam cushions, and the seat back will be provided with 0 degree fixed recline

angle. To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled.

The seat back will be an SCBA back style. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A seat safety system will be included. When activated, this system will pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

The seat will be moved approximately 3.00" inboard from the standard location.

FORWARD FACING CENTER CABINET

A forward facing cabinet will be provided in the crew cab at the center position.

The cabinet will be 32.00" wide x 39.00" high x 24.00" deep with one (1) Amdor rollup door with anodized finish, non-locking. The cabinet will be provided with no false floor. The upper rear wall will be notched for the wireway covers. The frame to frame opening of the cabinet will be 29.50" wide x 33.00" high. The minimum clear door opening will be 26.75" wide x 27.12" high.

CLEAR DOOR OPENINGS (F-F = Frame to Frame)					
AMDOR		GORTITE		ROM	
HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL
Subtract 2.00" from F-F	Subtract 5.88" from F-F	Subtract 2.75" from F-F	Subtract 4.75" from F-F	Subtract 2.56" from F-F	Subtract 4.50" from F-F

The cabinet will include one (1) infinitely adjustable shelf with a 0.75" up-turned lippainted to match the cab interior.

The cabinet will include no louvers.

The cabinet will be constructed of smooth aluminum, and painted to match the cab interior.

Cabinet Light

There will be one (1) white LED strip light installed on the right side of the interior cabinet door opening and one (1) white LED strip light installed on the left side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch.

FORWARD FACING PASSENGER SIDE OUTBOARD SEAT

There will be one (1) forward facing Pierce PS6® seat provided at the passenger side outboard position in the crew cab. To provide improved ride comfort, and maximize accessibility to the crew cab, the seat will be provided with 15.00" deep foam cushions, and the seat back will be provided with 0 degree fixed recline angle. To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled.

The seat back will be an SCBA back style. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A seat safety system will be included. When activated, this system will pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

The seat will be moved approximately 3.00" inboard from the standard location.

SHELVING

There will be two (2) shelves provided in the EMS compartment. Each shelf will be constructed of 0.090" aluminum with a .75" up-turned lip. Shelving will be infinitely adjustable by means of a threaded tightener sliding in a track.

The location will be one in each rear facing cabinet.

CUP HOLDER/STORAGE CONSOLE

There will be two (2) console(s) located Shipped loose. Each console will be 14.50" long x 5.00" wide x 3.00" high. A 3.75" diameter hole will be provided for a cup holder. The other side of the console will have a recessed rectangle storage area.

The console(s) will be painted to match the cab interior.

SLIDE-OUT ADJUSTABLE TRAY

There will be one (1) slide out tray(s) provided in the cab cabinet.

The capacity rating will be 250 lb minimum in the extended position.

The construction will consist of 0.188" thick aluminum formed to provide a 1.00" high lip around the perimeter of tray.

Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.

An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand. There will only be one (1) lock provided on the front of the tray to allow for one (1) handed operation.

The tray(s) will be located center forward facing EMS.

FORWARD FACING OVERHEAD STORAGE COMPARTMENTS

There will be two (2) overhead forward facing storage compartments installed at the raised roof within the crew cab, each side of the roof notch. Each compartment will be approximately 9.00" wide x 10.00" high x 14.00" deep.

Each compartment will include one (1) lift up compartment door. Non-locking latch paddle handle and gas operated stay arms will be provided.

The compartment will be constructed of smooth aluminum and painted to match the cab interior.

Compartment Light

There will be one (1) white LED strip light installed horizontally above each compartment door opening. The light will be controlled by an automatic door switch.

SEAT UPHOLSTERY

All seat upholstery will be black Turnout Tuff material.

AIR BOTTLE HOLDERS

All SCBA type seats in the cab will have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket will include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp will constrain the SCBA bottle in the seat and will exceed the NFPA standard of 9G.

There will be a quantity of three (3) SCBA brackets.

SEAT BELTS

All seating positions in the cab, crew cab and tiller cab (if applicable) will have red seat belts.

To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length will meet or exceed the current edition of applicable NFPA and CAN/ULC - S515 standards.

The 3-point shoulder type seat belts will also include the ReadyReach® D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.

Any flip up seats will include a 3-point shoulder type belts only.

SHOULDER HARNESS HEIGHT ADJUSTMENT

All seating positions furnished with 3-point shoulder type seat belts will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter.

A total of four (4) seating positions will have the adjustable shoulder harness.

HELMET HOLDER

There will be four (4) On Scene Talon, Model 92510, helmet holder bracket(s) provided in the cab. Each bracket will provide quick access and secure storage of the helmet.

The bracket location(s) will be determined at time of final inspection.

CAB DOME LIGHTS

There will be four (4) dual LED dome lights with black bezels provided. Two (2) lights will be mounted above the inside shoulder of the driver and officer and two (2) lights will be installed and located, one (1) on each side of the crew cab.

The color of the LED's will be red and white.

The white LED's will be controlled by the door switches and the lens switch.

The color LED's will be controlled by the lens switch.

In order to ensure exceptional illumination, each white LED dome light will provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.

ENHANCED SOFTWARE FOR CAB AND CREW CAB DOME LIGHTS

The cab and crew cab dome lights will remain on for 10 seconds for improved visibility after the doors are closed.

The dome lights will dim after 10 seconds or immediately if the vehicle's transmission is put into gear.

CAB SPOTLIGHT

There will be two (2) Golight, Model 20**4GT, white LED spotlights located on the cab roof, each side of cab roof. The spotlights will be mounted on painted pedestals.

These lights may be load managed when the parking brake is applied.

Spotlight Controller

There will be one (1) wired dash mounted remote provided for each spotlight.

Spotlight Controller Locations

The remotes to control the spotlights will be located one (1) within reach of the driver and one (1) within reach of the officer.

HAND HELD LIGHT

There will be four (4) Streamlight, Fire Vulcan, Model #44451, hand lights provided with a vehicle mount with 12VDC direct wire charging rack and quick release buckle strap mounted one at officer, three at rear of engine tunnel.

Each light housing will be orange in color and be provided with a C4, LED and two (2) "ultra bright blue tail light LEDs". The tail light LEDs will have a dual mode of blinking or steady.

CAB INSTRUMENTATION

The cab instrument panel will consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches will be identified by a label adjacent to each item. Actuation of the headlight switch will illuminate the labels in low light conditions. Telltale indicator lamps will not be illuminated unless necessary. The cab instruments and controls will be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels will be designed to be removable for ease of service and low cost of ownership.

Gauges

The gauge panel will include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

- Voltmeter gauge (Volts)
  - Low volts (11.8 VDC)
    - Amber indicator on gauge assembly with alarm
  - High volts (15 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very low volts (11.3 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very high volts (16 VDC)
    - Amber indicator on gauge assembly with alarm
- Tachometer (RPM)
- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)
- Fuel level gauge (Empty - Full in fractions)
  - Low fuel (1/8 full)
    - Amber indicator on gauge assembly with alarm
  - Very low fuel (1/32) fuel
    - Amber indicator on gauge assembly with alarm
- Engine oil pressure gauge (PSI)
  - Low oil pressure to activate engine warning lights and alarms
    - Red indicator on gauge assembly with alarm
- Front air pressure gauge (PSI)
  - Low air pressure to activate warning lights and alarm
    - Red indicator on gauge assembly with alarm

- Rear air pressure gauge (PSI)
  - Low air pressure to activate warning lights and alarm
    - Red indicator on gauge assembly with alarm
- Transmission oil temperature gauge (Fahrenheit)
  - High transmission oil temperature activates warning lights and alarm
    - Amber indicator on gauge assembly with alarm
- Engine coolant temperature gauge (Fahrenheit)
  - High engine temperature activates an engine warning light and alarm
    - Red indicator on gauge assembly with alarm
- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions)
  - Low fluid (1/8 full)
    - Amber indicator on gauge assembly with alarm

All gauges and gauge indicators will perform prove out at initial power-up to ensure proper performance.

Indicator Lamps

To promote safety, the following telltale indicator lamps will be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps will be "dead-front" design that is only visible when active. The colored indicator lights will have descriptive text or symbols.

The following amber telltale lamps will be present:

- Low coolant
- Trac cntl (traction control) (where applicable)
- Check engine
- Check trans (check transmission)
- Aux brake overheat (Auxiliary brake overheat)
- Air rest (air restriction)
- Caution (triangle symbol)
- Water in fuel
- DPF (engine diesel particulate filter regeneration)
- Trailer ABS (where applicable)
- Wait to start (where applicable)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)

The following red telltale lamps will be present:

- Warning (stop sign symbol)

- Seat belt
- Parking brake
- Stop engine
- Rack down

The following green telltale lamps will be provided:

- Left turn
- Right turn
- Battery on

The following blue telltale lamp will be provided:

- High beam

Alarms

Audible steady tone warning alarm: A steady audible tone alarm will be provided whenever a warning message is present.

Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) will be provided whenever a caution message is present without a warning message being present.

Alarm silence: Any active audible alarm will be able to be silenced by holding the ignition switch at the top position for 3 to 5 seconds. For improved safety, silenced audible alarms will intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp will act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition will enable the steady or pulsing tones respectively.

Indicator Lamp and Alarm Prove-Out

Telltale indicators and alarms will perform prove-out at initial power-up to ensure proper performance.

Control Switches

For ease of use, the following controls will be provided immediately adjacent to the cab instrument panel within easy reach of the driver.

Emergency master switch: A molded plastic push button switch with integral indicator lamp will be provided. Pressing the switch will activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.

Headlight / Parking light switch: A three (3)-position maintained rocker switch will be provided. The first switch position will deactivate all parking lights and the headlights. The second switch position will activate the parking lights. The third switch position will activate the headlights.

Panel backlighting intensity control switch: A three (3)-position momentary rocker switch will be provided. The first switch position decreases the panel backlighting intensity to a minimum level as the

switch is held. The second switch position is the default position that does not affect the backlighting intensity. The third switch position increases the panel backlighting intensity to a maximum level as the switch is held.

The following standard controls will be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications.

High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp will be provided. The first switch position is the default switch position. The second switch position will activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch will indicate when the high idle function is engaged.

"Ok To Engage High Idle" indicator lamp: A green indicator light will be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.

The following standard controls will be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches will have backlit labels for low light applications.

Ignition switch: A three (3)-position maintained/momentary rocker switch will be provided. The first switch position will deactivate vehicle ignition. The second switch position will activate vehicle ignition. The third momentary position will disable the Command Zone audible alarm if held for 3 to 5 seconds. A green indicator lamp will be activated with vehicle ignition.

Engine start switch: A two (2)-position momentary rocker switch will be provided. The first switch position is the default switch position. The second switch position will activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.

4-way hazard switch: A two (2)-position maintained rocker switch will be provided. The first switch position will deactivate the 4-way hazard switch function. The second switch position will activate the 4-way hazard function. The switch actuator will be red and includes the international 4-way hazard symbol.

Heater, defroster, and air conditioning control panel.

Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls will be provided. The windshield wiper control will have high, low, and intermittent modes.

Parking brake control: An air actuated push/pull park brake control valve will be provided.

Chassis horn control: Activation of the chassis horn control will be provided through the center of the steering wheel.

Custom Switch Panels

The design of cab instrumentation will allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There will be positions for up to four (4) switch

panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to four (4) switch panels in the overhead console on the officer's side and up to two (2) switch panels in the engine tunnel console facing the officer. All switches will have backlit labels for low light applications.

Diagnostic Panel

A diagnostic panel will be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel will allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches will allow ABS systems to provide blink codes should a problem exist.

The diagnostic panel will include the following:

- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- ABS diagnostic switch (blink codes flashed on ABS telltale indicator)
- Diesel particulate filter regeneration switch (where applicable)
- Diesel particulate filter regeneration inhibit switch (where applicable)

Cab LCD Display

A digital four (4)-row by 20-character dot matrix display will be integral to the gauge panel. The display will be capable of showing simple graphical images as well as text. The display will be split into three (3) sections. Each section will have a dedicated function. The upper left section will display the outside ambient temperature.

The upper right section will display, along with other configuration specific information:

- Odometer
- Trip mileage
- PTO hours
- Fuel consumption
- Engine hours

The bottom section will display INFO, CAUTION, and WARNING messages. Text messages will automatically activate to describe the cause of an audible caution or warning alarm. The LCD will be capable of displaying multiple text messages should more than one caution or warning condition exist.

AIR RESTRICTION INDICATOR

A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm will be provided.

"DO NOT MOVE APPARATUS" INDICATOR

A flashing red indicator light, located in the driving compartment, will be illuminated automatically per the current NFPA requirements. The light will be labeled "Do Not Move Apparatus If Light Is On."

The same circuit that activates the Do Not Move Apparatus indicator will activate a pulsing alarm when the parking brake is released.

DO NOT MOVE TRUCK MESSAGES

Messages will be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages will designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).

The following messages will be displayed (where applicable):

- Do Not Move Truck
- DS Cab Door Open (Driver Side Cab Door Open)
- PS Cab Door Open (Passenger's Side Cab Door Open)
- DS Crew Cab Door Open (Driver Side Crew Cab Door Open)
- PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)
- DS Body Door Open (Driver Side Body Door Open)
- PS Body Door Open (Passenger's Side Body Door Open)
- Rear Body Door Open
- DS Ladder Rack Down (Driver Side Ladder Rack Down)
- PS Ladder Rack Down (Passenger Side Ladder Rack Down)
- Deck Gun Not Stowed
- Lt Tower Not Stowed (Light Tower Not Stowed)
- Fold Tank Not Stowed (Fold-A-Tank Not Stowed)
- Aerial Not Stowed (Aerial Device Not Stowed)
- Stabilizer Not Stowed
- Steps Not Stowed
- Handrail Not Stowed

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved will be displayed as a caution message after the parking brake is disengaged.

SWITCH PANELS

The emergency light switch panel will have a master switch for ease of use plus individual switches for selective control. Each switch panel will contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments will include non-functioning black appliqués. Documentation will be provided by the manufacturer indicating the rated cycle life of the switches. The switch panel(s) will be located in the overhead position above the windshield on the driver side overhead to allow for easy access.

Additional switch panel(s) will be located in the overhead position(s) above the windshield or in designated locations on the lower instrument panel layout.

The switches will be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch will be illuminated white whenever back lighting is activated and illuminated green whenever the switch is active. An active illuminated switch will flash when interlock requirements are not met or device is actively being load managed. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch will be placed in the center of the switch. The label will allow light to pass through the letters for ease of use in low light conditions.

WIPER CONTROL

For simple operation and easy reach, the windshield wiper control will be an integral part of the directional light lever located on the steering column. The wiper control will include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control will have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.

HOURMETER - AERIAL DEVICE

An hourmeter for the aerial device will be provided and located within the cab display or instrument panel.

AERIAL MASTER

There will be a master switch for the aerial operating electrical system provided.

AERIAL PTO SWITCH

A PTO switch for the aerial with indicator light will be provided.

SPARE CIRCUIT

There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power
- The negative wire shall be connected to ground
- Wires shall be protected to 20 amps at 12 volts DC
- Power and ground shall terminate in electrical distribution box on the engine tunnel
- Termination shall be with 3/8" studs and plastic covers
- Wires shall be sized to 125 percent of the protection

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground
- Wires will be protected to 15 amps at 12 volts DC
- Power and ground will terminate in crew cab tucked under seat riser
- Termination will be with heat shrinkable butt splicing
- Wires will be sized to 125 percent of the protection

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be two (2) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery switched power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate two in the front of cab under instrument panel and one in the crew cab tucked in seat riser.
- Termination will be with heat shrinkable butt splicing.
- Wires will be sized to 125 percent of the protection.

The circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground
- Wires will be protected to 30 amps at 12 volts DC
- Power and ground will terminate center forward facing EMS cabinet on back wall near floor
- Termination will be with a 10-place bus bar with screws and removable cover
- Wires will be sized to 125% of the protection

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be four (4) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 2.0 amps at 12 volts DC.
- Power and ground will terminate officer dash area #132 and driver dash area panel location #8 with mirror controls 1 each side between the driver and passenger forward facing seat and EMS cabinet on rear wall just a little above the seat riser height..
- Termination will be a Blue Sea Systems part number 1016 dual USB charger socket.
- Wires will be sized to 125 percent of the protection.

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground
- Wires will be protected to 20 amps at 12 volts DC
- Power and ground will terminate inside passenger side EMS compartment to be located at pre-construction
- Termination will be with heat shrinkable butt splicing
- Wires will be sized to 125 percent of the protection

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the ignition switched power.
- The negative wire will be connected to ground.
- Wires will be protected to 20 amps at 12 volts DC.
- Power and ground will terminate inside passenger EMS compartment to be located at pre-construction..
- Termination will be to a Blue Sea System, Model 5025, 6 circuit with negative bus bar. The terminal block will include a cover with circuit labels.

Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate front of cab under instrument pane.
- Termination will be with heat shrinkable butt splicing.
- Wires will be sized to 125 percent of the protection.

Battery direct loads cannot be Load Managed.

LABEL

two (2) special instrument panel switch label(s) will replace the following label(s), Change the Clear Master switch wording to Clear Disable" Change the Rear Flashing Switch to "Rear Disable".

The new labels will read "Clear Disable" & "Rear Disable".

DASH PANEL RECESS

The dash panel across from the officer will be recessed to accommodate the mounting of miscellaneous items. The recess will be 7.25" down x 7.81" back and 20.88" wide.

INFORMATION CENTER

An information center employing a 7.00" diagonal touch screen color LCD display will be encased in an ABS plastic housing.

The information center will have the following specifications:

- Operate in temperatures from -40 to 158 degrees Fahrenheit
- LCD optically bonded to hardened AR glass lens
- Five weather resistant user interface switches
- Grey with black accents
- Sunlight Readable
- Linux operating system
- Minimum of 1000nits rated display
- Display can be changed to an available foreign language
- A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area.
- Programmed to read US Customary

General Screen Design

Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used.

If a caution or warning situation arises the following will occur:

    - An amber background/text color will indicate a caution condition
- A red background/text color will indicate a warning condition
- The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.
- A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

Home/Transit Screen

This screen will display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if the water level system includes compatible communications to the information center)
- Foam Level (if the foam level system includes compatible communications to the information center)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms

On Scene Screen

This screen will display the following and will be auto activated with pump engaged (if equipped):

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM
- Water Level (if equipped)
- Foam Level (if equipped)
- Foam Concentration (if equipped)
- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

Virtual Buttons

There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

Page Screen

The page screen will display the following and allow the user to progress into other screens for further functionality:

- Diagnostics
  - Faults
    - Listed by order of occurrence
    - Allows to sort by system
  - Interlock
    - Throttle Interlocks
    - Pump Interlocks (if equipped)
    - Aerial Interlocks (if equipped)
    - PTO Interlocks (if equipped)
  - Load Manager
    - A list of items to be load managed will be provided. The list will provide a description of the load.
    - The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.
    - The screen will indicate if a load has been shed (disabled) or not shed.
    - "At a glance" color features are utilized on this screen.
  - Systems
    - Command Zone
      - Module type and ID number
      - Module Version
      - Input or output number
      - Circuit number connected to that input or output
      - Status of the input or output
      - Power and Constant Current module diagnostic information
    - Foam (if equipped)
    - Pressure Controller (if equipped)
    - Generator Frequency (if equipped)
  - Live Data
    - General Truck Data
- Maintenance
  - Engine oil and filter
  - Transmission oil and filter
  - Pump oil (if equipped)
  - Foam (if equipped)
  - Aerial (if equipped)
- Setup
  - Clock Setup
  - Date & Time

        - 12 or 24 hour format
        - Set time and date
    - Backlight
        - Daytime
        - Night time
        - Sensitivity
    - Unit Selection
    - Home Screen
    - Virtual Button Setup
    - On Scene Screen Setup
    - Configure Video Mode
        - Set Video Contrast
        - Set Video Color
        - Set Video Tint
- Do Not Move
    - The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicated
        - Driver Side Cab Door
        - Passenger's Side Cab Door
        - Driver Side Crew Cab Door
        - Passenger's Side Crew Cab Door
        - Driver Side Body Doors
        - Passenger's Side Body Doors
        - Rear Body Door(s)
        - Ladder Rack (if applicable)
        - Deck Gun (if applicable)
        - Light Tower (if applicable)
        - Hatch Door (if applicable)
        - Stabilizers (if applicable)
        - Steps (if applicable)
- Notifications
    - View Active Alarms
        - Shows a list of all active alarms including date and time of the occurrence is shown with each alarm
        - Silence Alarms - All alarms are silenced
- Timer Screen
- HVAC (if equipped)
- Tire Information (if equipped)
- Ascendant Set Up Confirmation (if equipped)

Button functions and button labels may change with each screen.

COLLISION MITIGATION

There will be a HAAS Alert®, Model HA7 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA7 cellular transponder module will be installed behind the cab windshield, as high and near to the center as practical, to allow clear visibility to the sky. The module dimensions are 5.40" long x 2.70" wide x 1.30" high, and operating temperature range is -40 degrees Celsius to 85 degrees Celsius.

The transponder will be connected to the vehicle's emergency master circuit and battery direct power and ground.

While responding with emergency lights on, the HA7 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.

While on scene with emergency lights on, the HA7 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.

The HA7 Responder-to-Vehicle (R2V) collision avoidance system will include the transponder and a 5 year cellular plan subscription.

Activation of the HAAS Alert system requires a representative of the customer to accept the End User License Agreement (EULA) via an on-line portal.

VEHICLE DATA RECORDER

There will be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.

The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position
- Seat Belt Buckled Status - Yes/No by Position
- Master Optical Warning Device Switch - On/Off
- Internal clock syncs the time and date when a laptop is connected.

Seat Belt Monitoring System

A seat belt monitoring system (SBMS) will be provided on the Command Zone™ color display. The SBMS will be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:

- Seat Occupied & Buckled = Green LED indicator illuminated
- Seat Occupied & Unbuckled = Red LED indicator with audible alarm
- No Occupant & Buckled = Red LED indicator with audible alarm
- No Occupant & Unbuckled = No indicator and no alarm

The seat belt monitoring screen will become active on the Command Zone color display when:

- The home screen is active:
  - and there is any occupant seated but not buckled or any belt buckled with an occupant.
  - and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS will be activated.

The SBMS will include an audible alarm that will warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.

INTERCOM SYSTEM

There will be a four (4) position David Clark, Model U3800, intercom system with single radio interface capability at the driver and officer positions and remote radio push to talk buttons located driver and officer positions, see picture. Two (2) crew cab outboard seats will have intercom only capability.

The following components will be provided:

- One (1) U3805 Radio Cord Junction Module
- Two (2) U3815 Radio interface modules (Driver, Officer)
- Two (2) Remote Push To Talk Button Kits
- One (1) U3800 Master station (1 Crew)
- One (1) U3801 Remote headset intercom station (1 Crew)
- One (1) C3820 Power cord
- All necessary station cables and connectors

RADIO / INTERCOM INTERFACE INCLUDED

All radio interfaced stations will have universal radio interfaces installed. The interface wiring will be routed within the cab to center overhead position .

UNDER THE HELMET HEADSET

There will be four (4) under the helmet, headset(s) provided driver, officer and crew cab.

Each David Clark, Model H3442, headset will feature:

- M-7A noise canceling electret microphone
- Hybrid wire/flex boom assembly, 280Â rotating, for perfect microphone placement on left or right side
- Dynamic earphone elements
- Advanced Undercut Gel Ear Seals for superior comfort
- Microphone on/off switch
- 6 ft. extended coil cord
- Adjustable overhead support assembly
- Carbon steel nape-band spring, black finish, rotates for left or right side mic positioning
- Independently Certified NRR: 23dB

REMOTE RADIO HEAD BRACKET

There will be three (3) black aluminum bracket(s) provided for installation of mobile two-way radio remote head(s).

The brackets will be designed for the following:

- Motorola High Power·Motorola APX mobile 05 · · located Shipped loose with the unit
- Bendix King· ·VHF KNG-M150R remote head & · · ·VHF GMH remote head located Shipped loose with the unit

RADIO ANTENNA MOUNT

There will be two (2) Maxrad, Model BMATM, antenna-mounting base(s) with 17.00' coax cable and weatherproof cap provided.

The mount(s) will be located on the cab roof one each side of cab roof just to the rear of the lightbar.

The cable will be routed to the officer side seat box.

VEHICLE CAMERA SYSTEM

There will be a color vehicle camera system provided with the following:

- One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse.
- One (1) camera located on the right side of the apparatus, pointing rearward, displayed automatically with the right side turn signal.

- One (1) camera located on the left side of the apparatus, pointing rearward, displayed automatically with the left side turn signal.

The camera images will be displayed on the left side vehicle information center display. Audio from the microphone on the rear camera will be not provided.

The following components will be included:

- One (1) SV-CW134639CAI Rear Camera
- Two (2) CS134404CI Side Cameras
- All necessary cables

Camera Switcher

There will be one (1), HMU318 HD Image Processor multiplexer, 4 channel camera video switcher with remote control provided to allow single, dual, triplex, quad, trefoil, Y split and PIP view display modes on the vehicle information center display provided. The switcher will have one (1) CVBS, Composite Video Blanking and Sync, standard Definition video output and one (1) AHD, Analog High Definition video output for High Definition cameras.

ELECTRICAL POWER CONTROL SYSTEM

The primary power distribution will be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers will be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers will be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers will be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays will be easily accessible.

Distribution centers located throughout the vehicle will contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.

Circuit protection devices, which conform to SAE standards, will be utilized to protect electrical circuits. All circuit protection devices will be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers will be Type-I automatic reset (continuously resetting). When required, automotive type fuses will be utilized to protect electronic equipment. Control relays and solenoid will have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.

Solid-State Control System

A solid-state electronics based control system will be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network will consist of electronic modules, electronic control modules to include black housings, a power indicator and status indicator located near their point of use to reduce harness lengths and improve reliability. The control system will comply with SAE J1939-11 recommended practices.

The control system will operate as a master-slave system whereas the main control module instructs all other system components. The system will contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system will utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.

For increased reliability and simplified use the control system modules will include the following attributes:

- Green LED indicator light for module power
- Red LED indicator light for network communication stability status
- Control system self test at activation and continually throughout vehicle operation
- No moving parts due to transistor logic
- Software logic control for NFPA mandated safety interlocks and indicators
- Integrated electrical system load management without additional components
- Integrated electrical load sequencing system without additional components
- Customized control software to the vehicle's configuration
- Factory and field programmable to accommodate changes to the vehicle's operating parameters

To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules will meet the following specifications:

- Module circuit board will meet SAE J771 specifications
- Operating temperature from -40C to +70C
- Storage temperature from -40C to +70C
- Vibration to 50g

IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)

Operating voltage from eight (8) volts to 32 volts DC

The main controller will activate status indicators and audible alarms designed to provide warning of problems before they become critical.

Circuit Protection and Control Diagram

Copies of all job-specific, computer network input and output (I/O) connections will be provided with each chassis. The sheets will indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.

On-Board Electrical System Diagnostics

The on-board information center will include the following diagnostic information:

- Text description of active warning or caution alarms
- Simplified warning indicators

- Amber caution indication with intermittent alarm
- Red warning indication with steady tone alarm

Advanced diagnostic feature will be provided in this control system. From the Command Zone display or connected wireless device, these features allow the user to monitor the real-time status of every input or output on the vehicle. It also allows users logged in as an administrator to force on inputs or outputs to assist the troubleshooting process.

TCU Module with WiFi

An in cab module will provide WiFi wireless interface and data logging capability. The WiFi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will communicate through a black WiFi antenna allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a WiFi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.

The TCU capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data TCU will provide up to 2 Gigabytes of data storage.

The TCU will provide a means to download the TCU information and update software in the device.

Indicator Light and Alarm Prove-Out System

A system will be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

Voltage Monitor System

A voltage monitoring system will be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system will provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm will activate if the system falls below 11.8 volts DC for more than two (2) minutes.

Dedicated Radio Equipment Connection Points

There will be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment. The studs will consist of the following:

- 12-volt 40-amp battery switched power
- 12-volt 60-amp ignition switched power
- 12-volt 60-amp direct battery power

There will also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

EMI/RFI Protection

To prevent erroneous signals from crosstalk contamination and interference, the electrical system will meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system will be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.

The apparatus will have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system will meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, will provide EMC testing reports from testing conducted on an entire apparatus and will certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.

EMI/RFI susceptibility will be controlled by applying appropriate circuit designs and shielding. The electrical system will be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing will be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

TELEMATICS SYSTEM

Your vehicle will include a cellular-based vehicle telematics system including a telematic control unit with external cellular Wi-Fi and GPS antenna. Pierce will provide access to a web-based user interface portal that will allow users to access vehicle data collected as part of the system, allow users to configure monitoring tools, provide a global view of the location of each vehicle that has the system, provide a summary of fleet data, etc. The web-based user interface portal or certain features thereof may be provided on a subscription basis.

The telematic control unit will be fully integrated into the electrical system of the vehicle, will monitor the vehicle through the CAN data bus, and will transmit data through a secure AT&T 4G LTE cellular connection, and be provided with a 3 year subscription.

The web-based user interface portal will provide, among other features:

- User defined interval notifications
- User defined fault alerts
- Remote access to Command Zone™ diagnostics
- Vehicle analytics and activity monitoring
- Vehicle system status

The system is activated while building your vehicle and thereafter remains active for a 60-day grace period starting when your vehicle ships from the factory. This means that the system is active at the time of factory acceptance and during the 60-day grace period. By selecting this option, it is agreed that use of the system and the web-based user interface portal will be subject to the terms set forth in the Data Systems Agreement referenced at https://www.piercemfg.com/privacy-statement. Customers will be provided with an initial login at the time of factory acceptance to verify performance of the system and the web-based user interface portal. The term of the subscription, if any, will begin when the vehicle ships from the factory. If customers do not log into the web-based user interface portal and confirm acceptance of the terms before the 60-day grace period ends, the system will be deactivated, and no new data will be collected or retained Pierce. Reactivation can be coordinated through the customer's authorized Pierce Dealer.

ELECTRICAL

All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices. All wiring will be high temperature crosslink type. Wiring will be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers will be provided which conform to SAE Standards. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors will be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.

Electrical wiring and equipment will be installed utilizing the following guidelines:

1. All holes made in the roof will be caulked with silicon. Large fender washers, liberally caulked, will be used when fastening equipment to the underside of the cab roof.
2. Any electrical component that is installed in an exposed area will be mounted in a manner that will not allow moisture to accumulate in it. Exposed area will be defined as any location outside of the cab or body.
3. Electrical components designed to be removed for maintenance will not be fastened with nuts and bolts. Metal screws will be used in mounting these devices. Also a coil of wire will be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.
4. Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).
5. All lights that have their sockets in a weather exposed area will have corrosion preventative compound added to the socket terminal area.
6. All electrical terminals in exposed areas will have silicon applied completely over the metal portion of the terminal.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, will be furnished. Rear identification lights will be recessed mounted for protection. Lights and wiring mounted

in the rear bulkheads will be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test will be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests will be recorded and provided to the purchaser at time of delivery.

ELECTRICAL SYSTEM PROGNOSTICS

There will be a software based vehicle tool provided to predict remaining life of the vehicles critical fluid and events.

The system will send automatic indications to the Command Zone™ information center and/or wireless enabled devices to proactively alert of upcoming service intervals.

Prognostics will include the following:

- Engine oil and filter
- Transmission oil and filter

BATTERY SYSTEM

There will be six (6) 12 volt Stryten/Exide®, Model 31S950X3W, batteries that include the following features will be provided:

- 950 CCA, cold cranking amps
- 190 amp reserve capacity
- High cycle
- Group 31
- Rating of 5700 CCA at 0 degrees Fahrenheit
- 1140 minutes of reserve capacity
- Threaded stainless steel studs

Each battery case will be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover will be manifold vented with a central venting location to allow a 45 degree tilt capacity.

The inside of each battery will consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.

BATTERY SYSTEM

There will be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.

MASTER BATTERY SWITCH

There will be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

An indicator light will be provided on the instrument panel to notify the driver of the status of the battery system.

BATTERY COMPARTMENTS

The batteries will be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments will be constructed of 3/16" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The compartments will include formed fit heavy-duty roto-molded polyethylene battery tray inserts with drains on each side of the frame rails. The batteries will be mounted inside of the roto-molded trays.

JUMPER STUDS

One (1) set of battery jumper studs with plastic color-coded covers will be installed on the battery box on the driver's side. This will allow enough room for easy jumper cable access.

BATTERY CHARGER

There will be a Kussmaul™, Chief Series Smart Charger 6012, product code 091-266-12-60, 60 amp battery charger with build-in touch screen display provided.

The battery charger will be wired to the AC shoreline inlet through a junction box located near the battery charger.

Battery charger will be located in the cab, on the vertical wall of the left side EMS compartment.

REMOTE CONTROL PANEL - BATTERY CHARGER

There will be a Kussmaul™, Chief Series Smart Charger remote control panel, product code 091-266-RCP included.

The battery charger indicator will be located near the driver's seat riser with special bracketry.

AUTO EJECT FOR SHORELINE

There will be one (1) Kussmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline inlet(s) will include red weatherproof flip up cover(s).

There will be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) will be connected to the battery charger and the six place outlet in the crew cab.

There will be a mating connector body supplied with the loose equipment.

There will be a label installed near the inlet(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

The shoreline receptacle will be located driver seat riser match customers previous unit 29657.

GENERATOR TO SHORELINE TRANSFER SWITCH

There will be an automatic transfer switch between the onboard generator and the shoreline inlet. The loads connected to the transfer switch will be power from the onboard generator when the generator is running.

ALTERNATOR

A Delco Remy®, Model 55SI, alternator will be provided. It will have a rated output current of 430 amps, as measured by SAE method J56. The alternator will feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator will be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

ELECTRONIC LOAD MANAGER

An electronic load management (ELM) system will be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.

For improved reliability and ease of use, the load manager system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components will not be allowed.

The system will include the following features:

- System voltage monitoring.
- A shed load will remain inactive for a minimum of five minutes to prevent the load from cycling on and off.
- Sixteen available electronic load shedding levels.
- Priority levels can be set for individual outputs.
- High Idle to activate before any electric loads are shed and deactivate with the service brake.
    - If enabled:
        - "Load Man Hi-Idle On" will display on the information center.
        - Hi-Idle will not activate until 30 seconds after engine start up.
- Individual switch "on" indicator to flash when the particular load has been shed.
- The information center indicates system voltage.

The information center, where applicable, includes a "Load Manager" screen indicating the following:

- Load managed items list, with priority levels and item condition.
- Individual load managed item condition:
  - ON = not shed
  - SHED = shed

SEQUENCER

A sequencer will be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation will allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

For improved reliability and ease of use, the load sequencing system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components will not be allowed.

Emergency light sequencing will operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights will be activated one by one at half-second intervals. Sequenced emergency light switch indicators will flash while waiting for activation.

When the emergency master switch is deactivated, the sequencer will deactivate the warning light loads in the reverse order.

Sequencing of the following items will also occur, in conjunction with the ignition switch, at half-second intervals:

- Cab Heater and Air Conditioning
- Crew Cab Heater (if applicable)
- Crew Cab Air Conditioning (if applicable)
- Exhaust Fans (if applicable)
- Third Evaporator (if applicable)

HEADLIGHTS

There will be four (4) JW Speaker®, Model 8800, 4" x 6" rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:

- the outside light on each side will contain a part number 055***1 low beam module
- the inside light on each side will contain a part number 055***1 high beam module
- the headlights to include chrome bezels

The low beam lights will be activated when the headlight switch is on.

The high beam and low beam lights will be activated when the headlight switch and the high beam switch is activated.

DIRECTIONAL LIGHTS

There will be two (2) Whelen 600® series, LED combination directional/marker lights provided. The lights will be located on the outside cab corners, next to the headlights.

The color of the lenses will be the same color as the LED's.

INTERMEDIATE LIGHT

There will be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light will double as a turn signal and marker light.

CAB CLEARANCE/MARKER/ID LIGHTS

There will be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights will be installed in the center of the cab above the windshield.
- Two (2) amber LED clearance lights will be installed, one (1) on each outboard side of the cab above the windshield.
- Two (2) amber LED marker lights will be installed, one (1) on each side above the cab doors.

REAR CLEARANCE/MARKER/ID LIGHTING

There will be three (3) LED identification lights located at the rear installed per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There will be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There will be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline

- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

The lights will be mounted with no guard.

There will be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There will be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

MARKER LIGHTS

There will be one (1) pair of amber and red LED marker lights with rubber arm, located rear lower corners of body each side. The amber lens will face the front and the red lens will face the rear of the truck.

These lights will be activated with the running lights of the vehicle.

REAR FMVSS LIGHTING

The rear stop/tail and directional lighting included in the rear tail light housing will include the following:

- Two (2) Whelen®, Model M62BTT, 4.30" high x 6.70" wide x 1.40" deep brake/tail lights with red LEDs
- Two (2) Whelen, Model M62T, 4.30" high x 6.70" wide x 1.40" deep directional lights with amber LEDs. The directional lights will be set to Steady On (Arrow) flash pattern.
- The lens color(s) to be the same as the LEDs.

There will be two (2) Whelen Model M62BU, LED backup lights provided in the tail light housing.

LICENSE PLATE BRACKET

There will be one (1) Weldon, Model 0J10-0393-00, license plate bracket located below the tailboard on a removable bolt-on bracket located driver side.

A Weldon, Model 9186-23882-30, incandescent step light will illuminate the license plate.

LIGHTING BEZEL

There will be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.

BACK-UP ALARM

There will be a Whelen®, Model BU112HL, 112 dB solid state electronic audible back-up alarm provided that actuates when the truck is shifted into reverse.

CAB PERIMETER SCENE LIGHTS

There will be four (4) Amdor, Model AY-LB-12HW012, 190 lumens each, 12.00" white LED strip lights provided.

- One (1) under the driver's side cab access step.
- One (1) under the passenger's side cab access step.
- One (1) under the passenger's side crew cab access step.
- One (1) under the driver's side crew cab access step.

The lights will be activated when the battery switch is on and the respective door is open and whenever control has been selected for the body perimeter lights.

PUMP HOUSE PERIMETER LIGHTS

There will be two (2) Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" LED weatherproof strip lights with brackets provided under the pump panel running boards, one (1) each side.

If the combination of options in the vehicle does not permit clearance for a 20.00" light, a 12.00" version of the Amdor light will be installed.

The lights will be controlled by the same means as the body perimeter lights.

BODY PERIMETER SCENE LIGHTS

There will be two (2) Amdor®, Model AY-LB-12HW012, 190 lumen, 12.00" long, 12 volt DC white LED lights provided.

The lights will be mounted in the following locations:

- One (1) light under the driver's side turntable access steps
- One (1) light under the passenger's side turntable access steps

The perimeter scene lights will be activated when a switch within reach of the driver is activated and the parking brake is applied.

ENHANCED SOFTWARE FOR PERIMETER LIGHTS

All perimeter lights will be deactivated when the parking brake is released unless alternate control is selected.

The cab and crew cab perimeter lights will remain on for ten (10) seconds for improved visibility after the doors closed.

STEP LIGHTS

There will be four (4) white LED step lights provided at the rear to illuminate the tailboard/step area.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

These step lights will be actuated with the perimeter scene lights.

All other steps on the apparatus will be illuminated per the current edition of applicable NFPA standards.

SCENE LIGHTS

There will be one (1) pair of TecNiq, Model E960, LED scene light(s) with stainless steel housing, installed on the side of the apparatus, near rear wheels each side.

A control for the light(s) selected above will be the following:

- a switch at the driver's side switch panel
- no additional switch location
- when the emergency master switch is on the the transmission is shifted into reverse
- no additional switch location

These lights may be load managed when the parking brake is set.

12 VOLT LIGHT BRACKET

There will be two (2) aluminum treadplate bracket(s) installed above LS2 and RS2 body compartments for the surface mounted flood light(s). The bracket(s) will have all wiring totally enclosed.

12 VOLT LIGHTING

There will be one (1) Whelen® Pioneer™, Model PSL2*, 12 volt DC LED floodlight(s) provided on the front visor, centered.

The housing(s) painted parts of this light assembly to be white.

The lights will be steady burning with the selected switch features.

The light will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the passenger's side switch panel
- no additional switch location
- no additional switch location

These light(s) may be load managed when the parking brake is applied.

12 VOLT DC SCENE LIGHTS

There will be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC powered light(s) with white LEDs installed on the cab located, behind driver side cab door, high as possible.

The surface mount housing(s) will be provided with a chrome cover.

The light(s) will be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT DC SCENE LIGHTS

There will be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC powered light(s) with white LEDs installed on the cab located, behind passenger side cab door, high as possible.

The surface mount housing(s) will be provided with a chrome cover.

The light(s) will be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC surface mount light(s) installed on the body of the apparatus located, driver side rear body above LS2.

The light(s) will include housing(s) with a chrome cover.

The light(s) will be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC surface mount light(s) installed on the body of the apparatus located, passenger side rear body above RS2.

The light(s) will include housing(s) with a chrome cover.

The light(s) will be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

DECK LIGHTS

There will be two (2) Whelen®, Model MPPBCS, black with chrome housing 12 volt DC LED floodlights with on/off switch. Each light will be provided with a low profile pedestal/swivel mount provided at the rear of the hose bed, one (1) each side.

The lights will be activated when the parking brake is applied and by the switch included on the light(s).

WALKING SURFACE LIGHT

There will be Model FRP, 4" round black 12 volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.

The light(s) will be activated when the body step lights are on.

FRONT WHITE WARNING LIGHT CONTROL

There will be switch(es) installed in the cab on the switch panel that will allow the operator to activate/deactivate all the front white warning lights whenever the emergency master switch is activated and the parking brake is released. The headlight flash option is included in this white warning light control if applicable. Each time the emergency master switch is activated, and the parking brake is released, the white warning light control switch and the white warning lights will default to off.

WATER TANK

It will have a capacity of 400 gallons and will be constructed of polypropylene plastic in an L-shape with a notch for hose storage. The joints and seams will be nitrogen welded inside and out. The tank will be baffled in accordance with the current edition of applicable NFPA standards. The baffles will have vent openings at both the top and bottom of each baffle to permit movement of air and water between compartments. The longitudinal partitions will be constructed of .38" polypropylene plastic and extend from the bottom of the tank through the top cover to allow positive welding. The transverse partitions extend from 4" off the bottom to the underside of the top cover. All partitions interlock and will be welded to the tank bottom and sides. The tank top will be constructed of .50" polypropylene. It will be recessed .38" and will be welded to the tank sides and the longitudinal partitions. It will be supported to keep it rigid during fast filling conditions. Construction will include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two of the dowels will be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes. A sump will be provided at the bottom of the water tank. The sump will include a drain plug and the tank outlet. Tank will be installed in a fabricated "cradle" assembly constructed of structural steel. Sufficient crossmembers are provided to properly support bottom of tank. Crossmembers are constructed of steel bar chsnnel or rectangular tubing. Tank "floats" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, will be placed on all horizontal surfaces that the tank rests on. Stops are provided to prevent an empty tank from bouncing excessively while moving vehicle. Tank mounting system is approved by the manufacturer.

Fill tower will be constructed of .50" polypropylene and will be a minimum of 8.00" wide x 14.00" long.

Fill tower will be furnished with a .25" thick polypropylene screen and a hinged cover.

An overflow pipe, constructed of 4.00" schedule 40 polypropylene, will be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.

The overflow will be routed using a section of 4.00" PVC at the hose end and secured to the tank strap on the right side pointing straight to ground so it does not dump water on any chassis component.

HOSE BED

The hose bed will be fabricated of 0.125" thick 5052-H32 aluminum with a tensile strength of 31,000.

The sides of the hose bed will not form any portion of the fender compartments.

The hose bed will be located ahead of the ladder turntable between the tank and side body compartments.

Hose removal will be at the rear of the body via "chutes" under the turntable on the right side. Each chute will be enclosed with a full height polished stainless steel door. There will be a lift and turn latch and a pneumatic cylinder at the top of the door (if applicable).

The hose bed flooring will consist of removable aluminum grating with a top surface that is corrugated to aid in hose aeration.

The grating slats will be 0.50" wide x 4.50" long with spacing between the slats for hose ventilation.

The hose bed/cargo area interior will be painted to match the lower body color.

Hose capacity will be a minimum of 800' of 5.00".

FIXED DIVIDER IN HOSE BED

A fixed single sheet aluminum divider/wall will be provided on the right side of the hose bed. The divider will be spaced away from the water tank side of the hose bed far enough to allow for a single 5.00" double jacket hose lay (approximately) 10.00" and as tall as the top of the water tank. The divider will extend from the front cross divider in the hose trough to the point in the hose bed where the rear of the water tank ends. The front edge of the divider will be secured to the front divider and the aluminum grating at the rear.

AERIAL HOSE BED HOSE RESTRAINT

The hose in the hose bed will be restrained by one (1) black nylon Velcro® strap at the top of the hose bed. The strap will be installed to the top of the hose bed side sheets.

HOSE STORAGE BOX, HOSE CHUTE COMPARTMENT

A removable hose tray will be provided in the DS compartment in place of the hose chute. rear hose chute. The tray will be constructed of aluminum to provide a lightweight sturdy tray.Four (4) hand holes will be provided in the sides for easy removal and installation from the hose trough. Both ends of the hose tray will be closed off for storage, The tray will be 6.00" high x the full depth and width of the compartment.

HOSE BED HOSE RESTRAINT

A red hose bed cover will be furnished with velcro fasteners at the front and velcro fasteners on the sides.

RUNNING BOARDS

A running board will be provided on each side of the front body to allow access to the backboard/crosslay storage area. The running boards will be designed with a grip pattern punched into .125" bright aluminum treadplate material providing support, slip resistance, and drainage.

HANDRAILS

The handrails will be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.

Chrome plated end stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces.

Drain holes will be provided in the bottom of all vertically mounted handrails.

- Two (2) handrails will be provided, one above each running board.

TURNTABLE STEPS

Steps to access the turntable from the left and right side will be provided just behind the compartmentation. There shall be no bottom flip step provided. The bottom step will have a step height not exceeding 24.00" from the ground to the top surface of the step at any time. All steps will have a height no greater than 14.00" from top surface to top surface.

The steps will be a swing-down design, with the stepping area made of Morton Tread-Grip® channel.

The stepwell will be lined with bright aluminum treadplate to act as scuffplates.

The steps will be connected to the "Do Not Move Truck" indicator.

A knurled aluminum handrail will be provided on each side of the access steps.

A hand hold will be provided in the left and right side of each set of access steps.

STEP LIGHTS

There will be three (3) white LED step lights with chrome housing provided for each set of aerial turntable access steps.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The step lights will be activated when the aerial master switch is activated.

SMOOTH ALUMINUM REAR WALL

The rear wall will be smooth aluminum.

TOW EYES

Two (2) rear painted tow eyes will be located at the rear of the apparatus and will be mounted directly to the torque box. The inner and outer edges of the tow eyes will be radiused. Each tow eye will be rated for 9000lb and painted to match the lower job color.

COMPARTMENTATION

Compartmentation will be fabricated of 0.125" 5052 aluminum. The side compartments are an integral assembly with the rear fenders. Fully enclosed rear wheel housings will be provided to prevent rust pockets and for ease of maintenance. Due to the severe loading requirements of this aerial, a method of compartment body support suitable for the intended load will be provided.

The backbone of the support system will be the chassis frame rail, which is the strongest component of the chassis and is designed for sustaining maximum loads.

A support system will be used which will incorporate a floating substructure by using Neoprene Elastomer isolators to allow the body to remain rigid while the chassis goes through its natural flex. The isolators will have a broad range of proven viability in vehicular applications, be of a fail safe design, and allow for all necessary movement in three (3) transitional and rotational modes. This will result in a 500 lb equipment rating for each lower compartment of the body.

The compartmentation in front of the rear axle will include a 3.00" steel support assemblies which are bolted to the chassis frame rails. A steel framework will be mounted to the body above these support assemblies connected to the support assemblies with isolators. There will be one (1) support assembly mounted to each chassis frame rail.

The compartmentation behind the rear axle will include 3.00" steel support assemblies which are bolted to the chassis frame rails and extend underneath to the outside edge of the body. The support assembly will be coated to isolate the dissimilar metals before it is bolted to the body. There will be one (1) support assembly mounted to each chassis frame rail.

Compartment flooring will be of the sweep out design with the floor higher than the compartment door lip. The compartment door openings are framed by flanging the edges in 1.75" and bending out again 0.75" to form an angle. Drip protection is provided over all door openings by means of bright aluminum extrusion or formed bright aluminum treadplate. Side compartment tops will be covered with bright aluminum treadplate with a 1.00" rolled over edge on the front, rear and outward side. The covers are fabricated in one (1) piece and have the corners welded. A bright aluminum treadplate cover will be provided on the front wall of each side compartment. All screws and bolts which protrude into a compartment will have acorn nuts at the ends to prevent injury.

The body design has been fully tested. Proven engineering and test techniques such as finite element analysis, model analysis, stress coating and strain gauging have been performed with special attention given to fatigue life and structural integrity of the compartment body and substructure.

AGGRESSIVE WALKING SURFACE

All exterior surfaces designated as stepping, standing, and walking areas will comply with the required average slip resistance of the current NFPA standards.

LOUVERS

All body compartments will have a minimum of one (1) set of louvers stamped into a wall to provide the proper airflow inside the compartment and to prevent water from dripping into the compartment. These louvers will be formed into the metal and not added to the compartment as a separate plate.

DRIVERS SIDE COMPARTMENTATION

A full height double door compartment ahead of the rear wheels will be approximately 41.75" wide x 64.00" high x 24.25" deep inside with a clear door opening of approximately 40.00" wide x 60.50" high.

One (1) lift-up door compartment above the fender compartments and over the rear axles will be provided. The compartment will be approximately 72.13" wide x 33.25" high x 24.25" deep inside with a clear door opening of approximately 65.00" wide x 29.62" high.

A compartment will be located above the front stabilizer. The compartment will be approximately 23.00" high x 18.00" wide x 24.25" deep with a door opening of approximately 15.75" high x 12.00" wide. There will be no blister for the reel in the top of this compartment. There will be a removable access panel specified within the hatch compartment over the front body. A lift up stainless steel, single pan door with pneumatic cylinders for payout of the cord will be provided on the side of the apparatus. The three (3) sides of the door opening will have stainless steel scuffplates.

A full height double door compartment behind the rear wheels will be approximately 43.75" wide x 49.25" high x 21.25" deep inside with a door opening of approximately 42.00" wide x 45.75" high.

One (1) compartment below the turntable with a lift-up door will be provided. The compartment will be approximately 39.38" wide x 18.38" high x 21.25" deep inside with a door opening of approximately 35.00" wide x 14.88" high.

PASSENGER SIDE COMPARTMENTATION

A full height double door compartment ahead of the rear wheels will be 41.75" wide x 64.00" high x 24.25" deep inside with a door opening of 40.00" wide x 60.50" high.

One (1) lift-up door compartment will be provided above the fender compartments and over the rear axles. The compartment will be 72.13" wide x 33.25" high x 12.00" deep inside with a door opening of 65.00" wide x 29.62" high.

A compartment will be located above the front stabilizer. The compartment will be 18.00" wide x 23.00" high x 24.25" deep with a door opening of 12.00" wide x 15.75" high. There will be no blister for the reel in the top of this compartment. There will be a removable access panel specified within the hatch compartment over the front body. A lift up stainless steel, single pan door with pneumatic cylinders for payout of the cord will be provided on the side of the apparatus. The three (3) sides of the door opening will have stainless steel scuffplates.

A full height double door compartment behind the rear wheels will be 43.75" wide x 49.25" high x 21.25" deep inside the lower 29.75" and 12.00" in the upper portion with a door opening of 42.00" wide x 45.75" high.

A compartment below the turntable with a lift-up door will be 39.38" wide x 18.38" high x 12.00" deep inside with a door opening of 35.00" wide x 14.88" high.

SIDE COMPARTMENT DOORS

All hinged compartment doors will be lap style with double panel construction and fabricated of .09" 5052H32 aluminum. Doors will be a minimum of 1.50" thick. To provide additional door strength, a C section reinforcement will be installed between the outer and interior panels.

Doors will be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core will be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.

All lap compartment doors will have polished stainless steel continuous hinge with a pin diameter of .25", that is bolted or screwed on with stainless steel fasteners. A dielectric substance will be applied to each hinge fastener.

All door lock mechanisms will be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.

Doors will be latched with recessed, polished stainless steel D ring handles and Eberhard 106 locks.

To prevent corrosion caused by dissimilar metals, compartment door handles will not be attached to outer door panel with screws. A rubber gasket will be provided between the D ring handle and the door.

ROLL-UP DOOR(S)

There will be two (2) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand roll-up doors.

Door(s) will be constructed using 1.00" extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats will be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain will be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats will be mounted in reusable slat shoes with positive snap-lock securement.

Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingression.

The doors will be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.

Bottom panel flange of roll-up door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.

A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar will be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.

All injection molded roll-up door wear components will be constructed of Type 6 nylon.

Each roll-up door will have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door.

The header for the roll-up door assembly will not exceed 4.00".

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

COMPARTMENT BLISTER

A blister in the compartment ahead of the rear wheels will be provided to clear the front bracket of the Firemaax suspension. This blister will take away some of the interior area of the compartment.

REAR BUMPER

An 8.00" rear bumper will be furnished. The bumper will be constructed of steel framework and will be covered with polished aluminum treadplate. The bumper will be 7.00" deep x 5.00" high and will be spaced away from the body approximately 1.00". The corners of the bumper will be angled at 30 degrees. It will extend the full width of the body. The driver's side 12.00" portion will be notched to allow clearance for the elbow on the aerial inlet.

KEYED LOCK(S)

There will be nine (9) compartment doors that require a keyed lock. The compartments to have a keyed lock will be body compartment doors.

ROLLUP DOOR PULL STRAPS

two (2) compartment doors will be provided with pull straps. The pull straps will be 14.00" long and black in color.

The straps will be installed directly to the inside of the rollup door.

The rollup door compartments to have these straps will be Over the wheel well compartments..

SCUFFPLATE, INSIDE DOOR PAN

The two (2) compartment doors will include a polished stainless steel scuffplate to cover the lower portion of the inside door pan of each door. Each scuffplate will be 8.00" high and full width of the compartment door pan.

Scuffplate will be located RS1 and RS4.

AERIAL OVERRIDE CONTROL DOOR

The door for the aerial override controls will be drop down, polished stainless steel.

COMPARTMENT LIGHTING

There will be nine (9) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips will be centered vertically along each side of the door framing. There will be two (2) light strips per compartment. The dual light strips will be in all body compartment(s).

Any remaining compartments without light strips will have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light will have a number 1076 one filament, two wire bulb.

Opening the compartment door will automatically turn the compartment lighting on.

COMPARTMENT LIGHTING, ADDITIONAL

There will be one (1) Pierce LED strip light(s) provided in the compartment(s) located installed by the hinge side of the on the door over the crosslay.. Each light will be 54.00" in length.

Opening the compartment door(s) will automatically turn the compartment lighting on.

ADDITIONAL COMPARTMENT LIGHT

A total of one (1) additional Whelen, Model 20COCDCR, 4.00" surface mount LED lights with chrome housing will be provided.

The lights will be located in Installed in place of the 6" standard round incandecent light in the ladder storage compartment.

The light will be controlled by the automatic door switch.

MOUNTING TRACKS

There will be nine (9) sets of tracks for mounting shelf(s) in LS1, upper portion of LS1, LS2, LS3, RS1, upper portion of RS1, RS2, RS3 and RS4. These tracks will be installed vertically to support the adjustable shelf(s) and will be full height of the compartment. The tracks will be painted to match the compartment interior.

ADJUSTABLE SHELVES

There will be ten (10) shelves with a capacity of 500 lb provided.

The shelf construction will consist of .188" aluminum painted spatter gray with 2.00" sides.

Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

The location(s) will be in RS1 at the transition point, in RS4 centered between the floor and the ceiling, in RS4 in the lower third, in RS6 in the upper third, in RS4 in the upper third, in RS1 in the upper third, in LS1 in the lower third, in LS4 in the lower third, in LS4 in the upper third and in LS1 in the upper third.

SLIDE-OUT/TILT-DOWN TRAY

There will be one (1) slide-out tray provided.

The bottom of each tray will be constructed of 0.188" thick aluminum painted spatter gray while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended position.

The capacity rating of the tray will be a minimum of 215 lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The location(s) will be in LS3 centered between the floor and ceiling.

SLIDE-OUT FLOOR MOUNTED TRAY

There will be two (2) floor mounted slide-out tray(s) provided P1 and P4. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of a minimum .13" aluminum with welded corners. The finish will be painted to match compartment interior.

The side height of the tray(s) will be as follows:

- Front: 2.00" high
- Rear: 2.00" high
- Left and Right Sides: 2.00" high

There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

VERTICAL COMPARTMENT PARTITION

One (1) partition will be provided.

The partition construction will consist of body material painted spatter gray. Each partition will be the full vertical height of the compartment.

The location(s) will be in RS6, 10.00" from the forward door frame.

STORAGE COMPARTMENT

There will be one (1) bright aluminum treadplate compartment(s) provided above the left and right side body compartments. The overall compartment will be approximately 14.00" deep x 116.00" long. The compartment will be bolted to the top of the body compartment.

There will be three (3) separate doors: a rear door for the area above the standard depth compartment, a middle door that is standard depth compartment width and rearward of the reel, and a door over the reel area, sized for the reel. A partition will separate the reel storage area from the remainder of the compartment. There will be a removable false floor provided over the reel. The floor will be screwed in to allow access to the reel for maintenance if needed. All doors will be hinged to the outside. The doors will be sealed for the weather and will be reinforced to allow them to be used as a walking surface. A single chrome grab handle will be provided on the center of each door to assist in opening and closing the cover. Gas cylinders will be provided as needed to hold the doors open.

There will be a white LED strip light on the inside edge of the compartment.

COMPARTMENT IPO HOSE CHUTE

There will be one (1) compartment(s) located on the rear hose chute doors side of the body at the rear, in place of the hose chute. Each compartment will be approximately 10.00" wide x 16.00" high x 46.00" deep in the lower 14.00" of height and 22.75" deep in the upper 2.00" of height. Each compartment will have a polished stainless steel lift-up door with a spring-loaded hinge and a pawl latch.

STORAGE COMPARTMENT

There will be one (1) bright aluminum treadplate compartment(s) provided above the on top of the driver side body side body compartments. The compartment will be approximately 14.00" deep x 24.00" wide x 116.00" long. A hinged aluminum treadplate hatch style cover with plunger latches will be provided. The compartment(s) will be hinged to the outside and the latches to the inside. The cover will be sealed for the weather and will be reinforced to allow it to be used as a walking surface. Three (3) chrome grab handles will be provided, spaced evenly on the cover, to assist in opening and closing the cover. A gas cylinder will be provided on each end of the door to hold in the open position.

There will be a removable false floor provided over the reel. The floor will be screwed in to allow access to the reel for maintenance if needed.

There will be a full length white 12 volt DC LED strip light installed on the inside edge of the compartment.

COMPARTMENT SHELF MODIFICATION

The adjustable shelf will be notched or reworked to fit the new contour of the compartment and wire covers.

REMOVABLE ACCESS PANEL

There will be a removable access panel provided.

A total of one (1) will be provided and located Make the access panel in the P6 compartment two piece so that the back half can be removed with out removing the vertical partiton.

RUB RAIL

Bottom edge of the side compartments will be trimmed with a bright aluminum extruded rub rail.

Trim will be 2.12" high with 1.38" flanges turned outward for rigidity.

The rub rails will not be an integral part of the body construction, which allows replacement in the event of damage.

BODY FENDER CROWNS

Polished stainless steel fender crowns will be provided around the rear wheel openings with a dielectric barrier will be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

The fender crowns will be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion. Rubber welting will be provided between the body and crown.

BODY FENDER LINER

A aluminum painted to match the lower body color fender liner will be provided. The liners will be removable to aid in the maintenance of rear suspension components.

HARD SUCTION HOSE

Hard suction hose will not be required.

HANDRAILS

The handrails will be 1.25" diameter knurled aluminum to provide a positive gripping surface.

Chrome plated end stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces.

Drain holes will be provided in the bottom of all vertically mounted handrails.

Handrails will be located on the front of the body in positions needed to meet NFPA requirements.

ONE AIR BOTTLE/TWO EXTINGUISHER STORAGE COMPARTMENT

A total of two (2) air bottle/extinguisher storage holder(s) will be provided on the left side and the right side, centered between the tandem rear wheels. The storage area will consist of two (2) individual bins each designed to hold an extinguisher with a maximum depth of 26.00". There will also be storage for one (1) air bottle in the same location(s). The air bottle will be partially behind the face of the fender panel.

Flooring will be rubber lined and have a drain hole. A drop down door with support cables and a pair of flush lift & turn latches will be provided for each compartment. The door will be polished stainless steel. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.The door will closely resemble the size and shape of the door used on the four (4) air bottle storage compartment between the tandems.

AIR BOTTLE STORAGE (SINGLE)

A quantity of one (1) 8.50" in diameter x 26.00" deep air bottle storage compartment will be provided ahead of the left side tandems. A triangular, polished stainless steel door with a chrome plated flush lift & turn latch will be provided to contain the air bottle and also cover the DEF tank opening. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.

AIR BOTTLE COMPARTMENT STRAP

A strap will be provided in the air bottle compartment to help contain the air bottle. The strap will wrap around the neck of the bottle and attach to the wall of the compartment.

EXTINGUISHER STORAGE

A quantity of three (3) extinguisher compartments will be provided on the left side forward of the rear wheels, on the right side forward of the rear wheels and on the right side rearward of the rear wheels. The extinguisher compartment will be in the form of a 9.00" square tube and of adequate depth to accommodate different size extinguishers. A polished stainless steel door with a chrome plated flush lift & turn latch will be provided to contain the extinguisher. A dielectric barrier will be provided between the door hinge, hinge fasteners, and the body sheet metal.

Inside the compartment, black rubber matting will be provided. There will also be a drain hole for each compartment.

EXTINGUISHER STORAGE

There will be one (1) extinguisher compartment(s) provided on the left side rearward of the rear wheels. The triangular door to cover the air bottle opening and the fuel tank access. The extinguisher compartment(s) will be 9.00" square and of adequate depth to accommodate different size extinguishers. A polished stainless steel door with a chrome plated flush lift & turn latch will be provided to contain the extinguisher and fuel fill. A dielectric barrier will be provided between the door hinge, hinge fasteners, and the body sheet metal.

Inside the compartment, black rubber matting will be provided. There will also be a drain hole for each compartment.

AIR BOTTLE HOLDERS

One (1) bracket will be provided for mounting air bottles. Each bracket will be a Ziamatic, model UH-5-30-3-SFPHS, be mounted on tracks, and be used for adjusting the location of the bracket within the compartment. Install mounted in P5 to be located at pre-construction..

EXTENSION LADDER

There will be two (2) 35' two (2) section aluminum Duo-Safety Series 1200-A extension ladder(s) provided.

ADDED EXTENSION LADDER

There will be one (1) 24', two (2) section, aluminum, Duo-Safety Series 900A extension ladder provided.

AERIAL EXTENSION LADDERS

There will be one (1) 28' two (2) section aluminum Duo-Safety Series 1200-A extension ladder(s) provided and located in the aerial torque box.

ROOF LADDER

There will be one (1) 16' aluminum Duo-Safety Series 875-A roof ladder(s) provided.

ADDED ROOF LADDER(S) PROVIDED BY DEALER

There will be two (2) roof ladder provided by the dealer. The ladder(s) will be a 14' Duo-Safety 775-A and 16' Duo-Safety 875-DR Special Width.

ADDED ROOF LADDER

There will be one (1) 14' roof, aluminum, Series 775-A provided.

ADDED ROOF LADDER

There will be one (1) 16' roof, aluminum, Series 875-A-DR that is 16.00" wide provided.

This ladder is non compliant to NFPA 1931, Chapter 4.4.3.1, "*Standard on Design of and Design Verification Tests for Fire Department Ground Ladders*".

Per Fire Department specification request of this ladder, the apparatus will be non compliant to the current edition of applicable NFPA standards at time of contract execution.

AERIAL FOLDING LADDER

There will be one (1) 10' aluminum Duo-Safety Series 585-A folding ladder(s) provided and located in the aerial torque box.

GROUND LADDER STORAGE

The ground ladders will be stored within the torque box and will be removable from the rear.

Ladders will be enclosed to prevent road dirt and debris from fouling or damaging the ladders.

The ladders rest in full length stainless steel slides and are arranged in such a manner that any one ladder can be removed without having to move or remove any other ladder.

Vertically hinged double lap doors will be provided at the rear to close the ladder compartment.

Doors will be of double pan aluminum construction. Single sheet aluminum doors will not be considered.

The lock door will be latched with Eberhard latches with "D" ring handles. The free floating door will be provided with a locking mechanism on the top of the door to allow it to be secured to the door frame. There will be no stay arm device provided on either door. Door grabbers will be provided on the outside of each door and the rear body surface to hold each door open.

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

LADDER STORAGE LIGHTING

There will be 21.00" white 12 volt DC LED strip lights in the torque box ladder storage compartment. One (1) light will be provided on each side of the ladder storage area.

The lights will be activated when the ladder storage compartment door is opened.

NESTED LADDER STORAGE

There will be nested ladders on the right side of the ladder storage compartment.

NESTED LADDER STORAGE

There will be nested ladders on the left side of the ladder storage compartment. The ladders will be nested so that one ladder can be removed without removing the adjoining ladder.

PIKE POLES

There will be two (2) Fire Hooks Unlimited, Model APH-12, 12' pike pole(s) with fiberglass handles provided. The pike pole(s) will be located in the ground ladder compartment.

8' PIKE POLE

There will be two (2) Fire Hooks Unlimited, New York Hook, 8' long roof hook with steel shaft and chisel (pry) end provided torque box.

6' PIKE POLE

There will be three (3) Fire Hooks Unlimited NY roof hook RH-6, 6' pike pole(s) with steel handles and pry end provided rear of cab each side as high as possible outboard and one in the torque box.

PIKE POLE STORAGE IN TORQUE BOX/LADDER STORAGE

There will be ABS tubing provided in the torque box/ladder storage area for a total of five (5) pike poles.

If the head of a pike pole can come into contact with a painted surface, a stainless steel scuffplate will be provided.

PUC MODULE

The pump module will be separate from the hose body and compartments so that each may flex independently of the other. It will be a fabricated assembly of aluminum tubing, angles and channels which supports both the plumbing and the side running boards.

The pump module will be mounted on the chassis frame rails with standard body angles in four places to allow for chassis frame twist.

Pump module, plumbing and gauge panels will be removable from the chassis in a single assembly.

PUMP CONTROL PANELS (LEFT SIDE CONTROL)

Pump controls and gauges will be located midship at the left side of the apparatus and properly identified.

The main pump operator's control panel will be completely enclosed and located in the forward section of the body compartment. There will be a roll up door to protect against road debris and weather elements. This roll-up door compartment will include a drip pan below the roll of the door. The pump operator's panels will be no more than 31.00" wide, and made in four (4) sections with the center section easily removable with simple hand tools. For the safety of the pump operator, there will be no discharge outlets or pump inlets located on the main pump operators panel.

Layout of the pump control panel will be ergonomically efficient and systematically organized. The upper section will contain the master gauges. This section will be angled down for easy visibility. The center section will contain the pump controls aligned in two horizontal rows. The pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable) will be located on or adjacent to the center panel, on the side walls for easy operation and visibility. The lower section will contain the outlet drains.

Manual controls will be easy moving 8" long lever style controls that operate in a vertical, up and down swing motion. These handles will have a 2.25" diameter knob and be able to lock in place to prevent valve creep under any pressure. Bright finish bezels will encompass the opening, be securely mounted to the pump operator's panel, and will incorporate the discharge gauge bezel. Bezels will be bolted to the panel for easy removal and gauge service. The driver's side discharges will be controlled directly at the valve. There will be no push-pull style control handles.

Identification tags for the discharge controls will be recessed within the same bezel. The discharge identification tags will be color coded, with each discharge having its own unique color.

All remaining identification tags will be mounted on the pump panel in chrome-plated bezels.

All discharge outlets will be color coded and labeled to correspond with the discharge identification tag.

The pump panels for the discharge and intake ports will be located ahead of the pump module with no side discharge or intake higher than the frame rail. The pump panels will be easily removable with simple hand tools.

A recessed cargo area will be provided at the front of the body, ahead of the water tank above the plumbing.

PASSENGER SIDE PUC MODULE COMPARTMENT

A full height compartment with a roll-up door ahead of the front stabilizer will be provided, as convenient large storage compartment for often used items for the crew. The interior dimensions of this compartment will be 30.25" wide x 52.00" high x 25.13" deep. The depth of the compartment will be calculated with the compartment door closed. The compartment interior will be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment will be 28.00" wide x 52.00 high.

The roll up door spool and drip pan will be raised 10.00" to match the height of the crosslay doors.

Closing of the door will not require releasing, unlocking, or unlatching any mechanism and will easily be accomplished with one hand.

This roll-up door compartment will include a drip pan below the roll of the door.

PUMP

Pump will be a Pierce, low profile, 1500 gpm single stage midship mounted centrifugal type, mounted below the cab. The pump will have a 15 percent reserve capacity to allow for extended time between pump rebuild. To ensure efficient pump/vehicle design the capacity to weight ratio will not be less than 1.5:1.

The pump casing will consist of three (3) discharge outlets, one (1) to each side in line with the impeller and one (1) to the rear. The pump casing will incorporate two (2) water strippers to maintain radial balance.

Pump will be the Class A type.

Pump will be certified to deliver the percentage of rated discharge from draft at pressure indicated below:

- 100 percent of rated capacity at 150 psi net pump pressure
- 70 percent of rated capacity at 200 psi net pump pressure
- 50 percent of rated capacity at 250 psi net pump pressure

The pump will have the capacity to deliver the percentage of rated discharge from a pressurized source as indicated below:

- 135 percent of rated capacity at 100 psi net pump pressure from a 5 psi source

Pump body will be fine-grained gray iron. Pump will incorporate a heater/cooling jacket integral to the pump housing.

The impeller will be high strength vacuum cast bronze alloy accurately machine balanced and splined to a 10 spline stainless steel pump shaft for precision fit, exceptional durability, and efficiency. Double replaceable reverse flow labyrinth type bronze wear ring design will help to minimize end thrust. The impeller will be a twisted vane design to create higher lift.

The pump will include o-ring gaskets throughout the pump.

Deep groove radial type oversize ball bearings will be provided. The bearings will be protected at the openings from road dirt and water with an oil seal and a water slinger.

The pump will have a flat, patterned area on the top of the pump intake wye to allow standing for plumbing maintenance. The main inlet manifold will be 6.00" in diameter and will have a low profile design to facilitate low crosslays and high flows.

For ease of service, the pump housing, intake wye, impeller, mechanical seal, and gear case will be accessible from above the chassis frame by tilting the cab. Removal of the main inlet wyes will provide access to the impeller, mechanical seal, and wear ring.

The tank to pump line and the primary discharge line will be the only piping required to be removed for overhaul.

For ease of service and overhaul there will be no piping or manifolding located directly over the pump.

PUMP MOUNTING

Pump will be mounted to the chassis frame rails directly below the crew cab, to minimize wheelbase and facilitate service, using rubber isolators in a modified V pattern that include one (1) central mounted isolators located between the frame rails, and one (1) on each side outside the frame rails. The mounting will allow chassis frame rails to flex independently without damage to the fire pump. Each isolator will be 2.55" in total outside diameter and will be rated at 490 lb. The pump will be completely accessible by tilting the cab with no piping located directly above the pump.

MECHANICAL SEALS

Silicon carbide mechanical seals will be provided. The seals will be spring loaded and self-adjusting. The seals will have a minimum thermal conductivity of 126 W/m*K to run cooler. Seals will have a minimum hardness of 2800 kg/mm2 to be more resistant to wear, and have thermal expansion characteristics of no more than 4.0 X106mm/mm*K to be more resistant to thermal shock.

PUMP GEAR CASE

The integrated pump transmission gear case will use a pressure-lubricated system to cool, lubricate, and filter the oil. The gear case will be constructed of lightweight aluminum, and impregnated with resin in accordance to MIL Spec MIL-I-17563. A sight glass, accessible by tilting the cab, will be provided for easy fluid level checks.

The gear case will consist of three (3) gears to drive the pump.

CLUTCH

There will be a heavy-duty hydraulic clutch mounted directly to the integrated pump transmission to engage and disengage the pump without gear clash. The clutch will be a multiple disc design for maximum torque. The clutch will be fully self-adjusting to provide automatic wear compensation, and consistent torque throughout the life of the clutch. Positive engagement and disengagement will be provided through a high efficient and dependable hydraulic system to assure superior performance.

LOW PRESSURE/HIGH TEMPERATURE LIGHTS

Lights will be provided to indicate when a high temperature or low pressure situation occurs. Lights will be provided next to the master gauges at the pump panel as well as on the control panel in the cab. A pair of lights will be provided in each location. One (1) light will be provided to indicate high temperature. The second light will be provided to indicate a low pressure. All lights will be labeled accordingly.

PUMPING MODE

Stationary pumping mode will be accomplished by stopping the vehicle, setting the parking brake and engaging the water pump switch on the cab switch panel. The transmission will shift to "Neutral" range automatically when the parking brake is set. The "OK to Stationary Pump" indicator will also illuminate when the parking brake is set. If the vehicle is equipped with a foam system or CAFS system, this systems will be engaged from the cab switch panel as well.

There will be no pump pressure or water level gauge inside the cab.

PUMP SHIFT

Pump will be engaged in not more than two steps, by simply setting the parking brake, which will automatically put the transmission into neutral, and activating a rocker switch in the cab. Switches in the cab will also allow for water, foam, or CAFS if equipped, and activate the appropriate system to preset parameters. The engagement will provide simple two-step operation, enhance reliability, and completely eliminate gear clash. The shift will include the indicator lights as mandated by NFPA. A direct override switch will be located behind a door in the lower pump operator's panel. The switch will automatically disengage when the door is closed.

As the parking brake is applied, the pump panel throttle will be activated and deactivate the chassis foot throttle for stationary operation.

TRANSMISSION LOCK UP

Transmission lock up is not required as transmission will automatically shift to neutral as soon as the parking brake is set.

AUXILIARY COOLING SYSTEM

A supplementary heat exchange cooling system will be provided to allow the use of water from the discharge side of the pump for cooling the engine water. A water-to-coolant heat exchanger will be used.

INTAKE RELIEF VALVE - PUMP

There will be One (1) Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 185 psig.

The relief valve(s) will have a working range of 75 psi to 250 psi.

The outlet will terminate below the frame rails with a 2.50" National Standard hose thread adapter and will have a "do not cap" warning tag.

The relief valve pressure control will be located behind the right side pump panel with a stainless steel access door.

PIERCE PRESSURE CONTROLLER

A Pierce electronic pressure controller will be provided.

A pressure transducer will be installed in the discharge side of the water pump. The transducer continuously monitors pump pressure sending a signal to the electronic pressure controller.

The pressure controller can be used in two (2) modes of operation, RPM mode and pressure modes. The controller will be programmed to turn on/default to Pressure Setting mode.

In the RPM mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller will maintain the set engine speed, regardless of engine load (within engine operation capabilities).

In the pressure mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller will automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow.

A 2.00" diameter throttle control knob with no mechanical stops, a serrated grip, and a red idle push button in the center will be a integrated/part of the pressure controller. The throttle control knob will be programmed for Clockwise rotation to increase engine speed.

Individual LED indicators for ok to pump, throttle ready, pressure mode and rpm mode will be located on the pressure controller for easy viewing.

A pump cavitation protection feature will also be provided which will return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.

Other safety features include recognition of low water and no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure controller LCD screen will be 4.20" in size with a minimum brightness of 750 nits. The LCD screen and LED intensity will automatically adjust for day and nighttime operation. The LCD screen intensity can also be manually adjusted if needed.

The following information will be provided/displayed on the LCD screen:

- Engine RPM
- Check engine and stop engine warning indicators
- Engine oil pressure
- Engine coolant temperature
- Water pump transmission temperature
- Fuel Level
- Water tank level
- Battery voltage
- Operating mode (RPM or pressure)
- Pressure or RPM setting

On screen messaging show diagnostic and warning messages as they occur. It will show apparatus information, stored data, and program options when selected by the operator. It will monitor inputs outputs 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 water pump temperature
- Low fuel
- Low engine oil pressure
- High engine coolant temperature
- Water tank out of water (visual alarm only)
- No engine response (visual alarm only)

The pressure controller will store the accumulated operating hours for the pump and engine. These items are to be displayed within the pressure controller menu.

The pressure controller will include a USB port on the back of the controller for easy software upgrades if needed.

PRIMING PUMP

The priming pump will be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of applicable NFPA standards.

All wetted metallic parts of the priming system are to be of brass and stainless steel construction.

One (1) priming control will open the priming valve and start the pump primer.

DRAINS- SPECIAL INSTRUCTIONS

All valves drains/bleeders will be tapped into the lowest point of each plumbing discharge and inlet. (This includes the ports on each valve as well).

PUMP MANUALS

There will be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals will be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual will cover pump operation, maintenance, and parts.

PLUMBING, STAINLESS STEEL AND HOSE

All inlet and outlet lines will be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's will be equipped with brass or stainless steel couplings. All stainless steel hard plumbing will be a minimum of a schedule 10 wall thickness.

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping will be equipped with victaulic or rubber couplings.

Plumbing manifold bodies will be ductile cast iron or stainless steel.

All piping lines are to be drained through a master drain valve or will be equipped with individual drain valves. All drain lines will be extended with a hose to drain below the chassis frame.

All water carrying gauge lines will be of flexible polypropylene tubing.

All piping, hose and fittings will have a minimum of a 500 PSI hydrodynamic pressure rating.

FOAM SYSTEM PLUMBING

All piping that is in contact with the foam concentrate or foam/water solution will be stainless steel. The fittings will be stainless steel or brass. Cast iron pump manifolds will be allowed.

MAIN PUMP INLETS

A 6.00" pump manifold inlet will be provided on each side of the vehicle. The suction inlets will include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

Main pump inlets will not be located on the main operator's panel and will maintain a low connection height by terminating below the top of the chassis frame rail.

SHORT SUCTION TUBE(S)

The suction tube(s) on the water pump will have short suction tube(s) installed to allow for installation of adapters, elbows or intake valves without excessive overhang.

INLET BUTTERFLY VALVE

There will be one (1) butterfly valve provided on the right side main pump inlet.

The 6.00" inlet valve will be recessed behind the pump panel.

A built-in, adjustable pressure relief valve and a bleeder valve will be provided on the inlet side of the valve.

There will be an Akron 9327 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller will provide position indication with 5 colored LED's. It will have manual adjustment of the brightness as well as an auto dimming option.

The electric actuator will be furnished with a manual override, extended to the pump panel.

A manual override wrench will be provide to manually open or close the valve.

INLET BUTTERFLY VALVE

There will be one (1) butterfly valve provided on the left side main pump inlet.

The 6.00" inlet valve will be recessed behind the pump panel.

A built-in, adjustable pressure relief valve and a bleeder valve will be provided on the inlet side of the valve.

There will be an Akron 9327 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller will provide position indication with 5 colored LED's. It will have manual adjustment of the brightness as well as an auto dimming option.

The electric actuator will be furnished with a manual override, extended to the pump panel.

A manual override wrench will be provide to manually open or close the valve.

MAIN PUMP INLET CAP

The main pump inlets will have National Standard Threads with a long handle chrome cap.

The cap will be the Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

VALVES

All ball valves will be Akron® Brass. The Akron valves will be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.

Valves will have a **ten (10) year** warranty.

The location of the valve for the one (1) inlet will be recessed behind the pump panel.

INLET CONTROL

The side auxiliary inlet(s) will incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism will indicate the position of the valve.

LEFT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

RIGHT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the right side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

ANODE, INLET

A pair of sacrificial zinc anodes will be provided in the water pump inlets to protect the pump from corrosion.

ADAPTER, INLET

Two (2) adapters for the inlets will be provided. The elbow adapter will be furnished for the left and right main pump inlet/s. The elbow/s will be 6.00"" female NST threads converting to 5.00" Storz. A 5.00" Storz cap will be provided with the elbow.

INLET BLEEDER VALVE

A 0.75" bleeder valve will be provided for each side gated inlet.

The valves will be located behind the panel with a "T" swing style handle control extended to the outside of the panel.

The handles will be chrome plated and provide a visual indication of valve position. The swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.

The water discharged by the bleeders will be routed below the chassis frame rails.

TANK TO PUMP

The booster tank will have a 3.00" outlet and be connected to the intake side of the pump with heavy duty 4.00" piping and a quarter turn 3.00" full flow line valve with the control located at the operator's panel. A rubber coupling will be included in this line to prevent damage from vibration or chassis flexing.

A check valve will be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.

TANK REFILL

A 1.50" combination tank refill and pump re-circulation line will be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

DISCHARGE OUTLET CONTROLS

The right side discharges will incorporate a quarter-turn ball valve and be controlled by Akron 9335 electric valve controllers provided on the pump operators panel. The electric controls must be of a true position feedback design, requiring no clutches in the motor or current limiting. The units must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate their corresponding valve actuator. The controllers will provide position indication on a full color, backlit LCD display. They will have manual adjustment of the brightness as well as an auto dimming option. In addition to the valve controls, the electric valve controllers will include a pressure display

All other outlets will have manual swing handles that operate in a vertical up and down motion. These handles will be able to lock in place to prevent valve creep under pressure.

LEFT SIDE DISCHARGE OUTLETS

There will be two (2) discharges with a 2.50" valves on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter. Discharges will be located below the cab, and will be no higher than the top of the chassis frame rail. Discharges will not be located on the pump operator's panel. Lever controls will be provided at the valve.

LEFT SIDE OUTLET ELBOWS

The 2.50" discharge outlets, located on the left side pump panel, will be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 30 degree elbow.

The elbow will be Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

RIGHT SIDE DISCHARGE OUTLETS

There will be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" MNST adapter. The discharge(s) will be located below the crew cab and will be no higher than the top of the chassis frame rail.

There will be Akron 9335 electric valve controller(s) provided on the pump operators panel. The electric control(s) must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit(s) must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller(s) will provide position indication on a full color, backlit LCD display. They will have manual adjustment of the brightness as well as an auto dimming option.

In addition to valve position, each controller will include a pressure display.

RIGHT SIDE OUTLET ELBOWS

The 2.50" discharge outlets, located on the right side pump panel, will be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 30 degree elbow.

The elbow will be the Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

LARGE DIAMETER DISCHARGE OUTLET

There will be an Akron 8800 4.00" flat ball valve with 4.00" plumbing terminating with a 4.00" MNST chrome adapter on the right side pump panel.

The valve will be controlled with a(n) Akron 9335 with pressure located at the pump operator's panel.

LARGE DIAMETER OUTLET ADAPTER

one (1) 4.00" outlet will be furnished with a 4.00" (F) National Standard hose thread x 5.00" Storz adapter. A 5.00" Storz cap and chain will be provided with the adapter.

DISCHARGE CAPS

Chrome plated, rocker lug, caps with chains will be furnished for all discharge outlets 1.50" thru 3.00" in size, besides the pre-connected hose outlets.

The cap will incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

OUTLET BLEEDER VALVE

A 0.75" bleeder valve will be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.

The valves will be located behind the panel with a T swing style handle control extended to the outside of the side pump panel.

The handles will be chrome plated and provide a visual indication of valve position.

The T swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.

Bleeders will be located at the bottom of the pump panel. They will be properly labeled identifying the discharge they are plumbed in to.

The water discharged by the bleeders will be routed below the chassis frame rails.

AERIAL WATERWAY OUTLET

The aerial waterway will be plumbed from the water pump to the aerial device waterway with 4.00" pipe and a 4.00" Akron valve.

The valve will be controlled with a Pierce large handwheel with indicator located at the pump operator's panel.

CROSSLAY MODULE

The crosslay module will be full width of the rear body.

The crosslay module will include a boom support compartment. The interior of the boom support compartment will be a DA finish.

The forward, upper corners of the module will have full body corners.

The crosslay module will be manufactured for installation of roll up doors on each side to include the boom support compartment with on common roll up door.

ROLL-UP DOOR, CROSSLAY ENDS, PUC

All compartment doors will be roll-up style double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™. The crosslay enclosure will be full width of the body.

The track will be the flanged track with the screws installed to the rear of the track guide.

The slats will be double wall box frame extrusion. The exterior surface will be flat and the interior surface will be concave to help loose equipment fall to the ground and prevent it from jamming the door.

Between each slat will be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments.

Each door will have a 4.00" counter balance to assist in lifting.

A polished stainless steel lift bar to be provided for each roll-up door. The lift bar will be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door

strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.

The crosslays will not have a drip pan below the roll of the door.

CROSSLAY COMPARTMENT LIGHTING

There will be two (2) 12 volt DC light strips with white LEDs and mechanical fasteners, provide behind the front door frame on the crosslay compartments per the following:

- One (1) strip light for the left side crosslay compartment door
- One (1) strip light for the right side crosslay compartment door

The lights will be activated when the battery switch is on and the respective door is opened.

CROSSLAY(S), LOWER

There will be two (2) lower crosslays provided.

The crosslays will be low mounted with the bottom of both crosslay trays no more than 11.00" above the frame rails for simple, safe reloading and deployment.

1.50" Crosslays

There will be one (1) 1.50" crosslays plumbed with 2.50" welded or formed schedule 10 304L stainless steel pipe.

There will be a 1.50" National Standard hose thread 90-degree swivel provided in each hose bed, so that the hose may be removed from either side of apparatus. The swivel will be as far outbound as possible for ease of changing hose.

Each crosslay will be gated with a 2.50" quarter turn ball valve with the controls located at the pump operator's panel.

Each hose bed will be capable of carrying 200' of 1.75" double jacket hose .

2.50" Crosslays

There will be one (1) 2.50" crosslays plumbed with 2.50" welded or formed schedule 10 304L stainless steel pipe.

There will be a 2.50" National Standard hose thread 90-degree swivel provided in each hose bed, so that the hose may be removed from either side of apparatus. The swivel will be as far outbound as possible for ease of changing hose.

Each crosslay will be gated with a 2.50" quarter turn ball valve with the controls located at the pump operator's panel.

Each hose bed will be capable of carrying 200' of 2.50" double jacket hose .

Crosslay Hose Trays

A removable tray will be provided for each crosslay hose bed. The crosslay tray will be constructed of aluminum to provide a lightweight sturdy tray. Two (2) hand holes will be in the floor and additional hand holes will be provided in the sides for easy removal and installation from the compartment. The floor of the trays will be perforated to allow for drainage and hose drying.

Trays will be held in place by a mechanical spring-loaded stainless-steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.

UPPER DEADLAY HOSE BED

One (1) dead lay, without plumbing, will be provided in the upper crosslay compartment capable of carrying 400' of 2.5" D.J. Hose and 200' 1.5" D.J on top .

Crosslay Hose Trays

A removable tray will be provided for each crosslay hose bed. The crosslay tray will be constructed of aluminum to provide a lightweight sturdy tray. Two (2) hand holes will be in the floor and additional hand holes will be provided in the sides for easy removal and installation from the compartment. The floor of the trays will be perforated to allow for drainage and hose drying.

Trays will be held in place by a mechanical spring-loaded stainless-steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.

LONG TOOL ENCLOSURE

An enclosure will be provided for storage in the upper crosslay module. The enclosure will be removable to allow access to the pump. The stored items will removable from either side of the truck. The enclosure will be 400' of 2.5" three stacks on bottom and 200' of 1.50" finish load on top stored vertical in horse shoe load.

A strap will be provided on each end of the storage to retain the equipment.

CROSSLAY COVER

An aluminum treadplate access cover will be installed over the deadlay, hinged at the front, to allow additional access to the hose storage area. It will include a latch at each rearward end of the cover to hold it securely in place, a chrome grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface.

SCUFFPLATE

There will be an aluminum treadplate scuffplate provided One each side on the front exterior wall of the speedlay compartment

HUSKY 3 FOAM PROPORTIONER

A Pierce Husky® 3 foam proportioning system will be provided. The Husky 3 is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation will be

based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system will automatically proportion foam solution at rates from 0.1 percent to 3 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system will allow operation from draft, hydrant, or relay operation.

System Capacity

The system will have the ability to deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements at a pump rating of 150 psi.

100 gpm @ 3 percent

300 gpm @ 1 percent

600 gpm @ 0.5 percent

Class A foam setting in 0.1 percent increments from 0.1 percent to 1 percent. Typical settings of 1 percent, 0.5 percent and 0.3 percent (maximum capacity will be limited to the plumbing and water pump capacity).

Control System

The system will be equipped with a digital electronic control display located on the pump operators panel. Push button controls will be integrated into the panel to turn the system on/off, control the foam percentage, and to set the operation modes.

The percent of injection will have a preset. This preset can be changed at the fire department as desired. The percent of injection will be able to be easily changed at the scene to adjust to changing demands.

Three (3) 0.50" high LEDs will display the foam percentage in numeric characters. Three (3) indicator LEDs will also be included: one (1) green, one (1) red, and one (1) yellow. The LEDs will indicate various system operation or error states.

The indications will be:

- Solid Green - System On
- Solid Red - Valve Position Error
- Solid Yellow - Priming System
- Flashing Green - Injecting Foam
- Flashing Red - Low Tank Level
- Flashing Yellow - Refilling Tank

The control display will house a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor will compare the values of the water flow versus the position/rate of the foam pump, to ensure the

proportion rate is accurate. One (1) check valve will be installed in the plumbing to prevent foam from contaminating the water pump.

Hydraulic Drive System

The foam concentrate pump will be powered by an electric over hydraulic drive system. The hydraulic system and motor will be integrated into one unit.

Foam Concentrate Pump

The foam concentrate pump will be of positive displacement, self-priming; linear actuated design, driven by the hydraulic system. The pump will be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum will be present in its construction.

A relief system will be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump.

The foam concentrate pump will have minimum capacity for 3 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system will deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump will be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.

External Foam Concentrate Connection

An external foam pick-up will be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up will be designed to allow continued operation after the on-board foam tank is empty, or the use of foam different than the foam in the foam tank.

Panel Mounted External Pick-Up Connection / Valve

A bronze three (3)-way valve will be provided. The unit will be mounted to the pump panel. The valve unit will function as the foam system tank to pump valve and external suction valve. The external foam pick-up will be one (1) 0.75" male connection GHT (garden hose thread) with a cap.

Pick-Up Hose

A 0.75" flexible hose with an end for insertion into foam containers will be provided. The hose will be supplied with a 0.75" female swivel GHT (garden hose thread) swivel connector. The hose will be shipped loose.

Discharges

The foam system will be plumbed to the lower rear crosslay and lower front crosslay.

System Electrical Load

The maximum current draw of the electric motor and system will be no more than 55 amperes at 12 VDC.

SINGLE FOAM TANK REFILL

The foam system's proportioning pump will be used to fill the foam tank. This will allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch will be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation will be controlled by a mode in the foam system controller. While the proportioner pump is filling the tank, the controller will display a flashing yellow LED to indicate that the tank is filling. When the tank is full, as determined by the float switch in the tank dome, the pump will stop and the controller will shut the yellow LED off. If it attempted to use tank fill and the refill valve and suction valve are in the wrong position(s), then a red LED will illuminate to indicate the improper valve position(s). When the valves are positioned properly, then filling will commence.

RELOCATE HYDRAULIC RESERVOIR

The foam system hydraulic reservoir will be turned 90 degrees relocated toward the left front corner of the generator on the Move as far as the hoses will allow with out redoing them side.

FOAM TANK

The foam tank will be an integral portion of the polypropylene water tank. The cell will have a capacity of 20 gallons of foam with the intended use of Class A foam. The foam cell will not reduce the capacity of the water tank. The foam cell will have a screen in the fill dome and a breather in the lid.

FOAM TANK DRAIN

The foam tank drain will be a 1.00" quarter turn drain valve located inside the pump/plumbing compartment.

The following drawing(s) will be provided for approval by the customer. The drawing(s) will be made for up One (01) Truck apparatus and/or similar Pierce job number.

PUMP OPERATOR'S PANEL DRAWING

A detailed drawing to scale of the pump operator's panel will be provided for the customer to review. The drawing will include all of the gauges, controls, switching, etc.., located on the pump operator's panel. The customer will be allowed to make changes and/or mark-ups to this approval drawing. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved pump operator's panel drawing will become part of the contract documents.

Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.

REMAINING PUMP PANEL(S)

Detailed drawing(s) to scale of the remaining pump panel(s) will be provided for the customer to review. The drawing(s) will include all of the gauges, controls, switching, etc.., located on the pump panel(s).

The customer will be allowed to make changes and/or mark-ups to these approval drawing(s). The fire apparatus manufacturer will make revisions (If needed) to the drawing(s) per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved pump panel drawing(s) will become part of the contract documents.

Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.

COLOR CODED TAGS

A detailed drawing/chart of the colors used on all of the inlet(s) and outlet(s) will be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved drawing/chart of the colors will become part of the contract documents.

SPECIAL TEXT/VERBIAGE TAGS

A detailed drawing/chart of the text/verbiage used on all of the inlet(s) and outlet(s) will be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved drawing/chart of the text/verbiage will become part of the contract documents.

PUMP PANEL CONFIGURATION

The pump panel configuration will be arranged and installed in an organized manner that will provide user-friendly operation.

PUMP OPERATOR'S PLATFORM

A pull out, flip down platform will be provided at the pump operator's control panel.

The front edge and the top surface of the platform will be made of DA finished aluminum with a Morton Cass insert.

The platform will be approximately 13.75" deep when in the stowed position and approximately 22.00" deep when extended. The platform will be as wide as possible. The platform will lock in the retracted and the extended position.

The sides, bottom and rear portions of the support assembly will be painted to match lower job color.

The platform will be wired to the "step not stowed" indicator in the cab.

PUMP OPERATOR'S PLATFORM PERIMETER LIGHT

There will be an Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" white 12 volt DC LED strip light provided to illuminate the ground area.

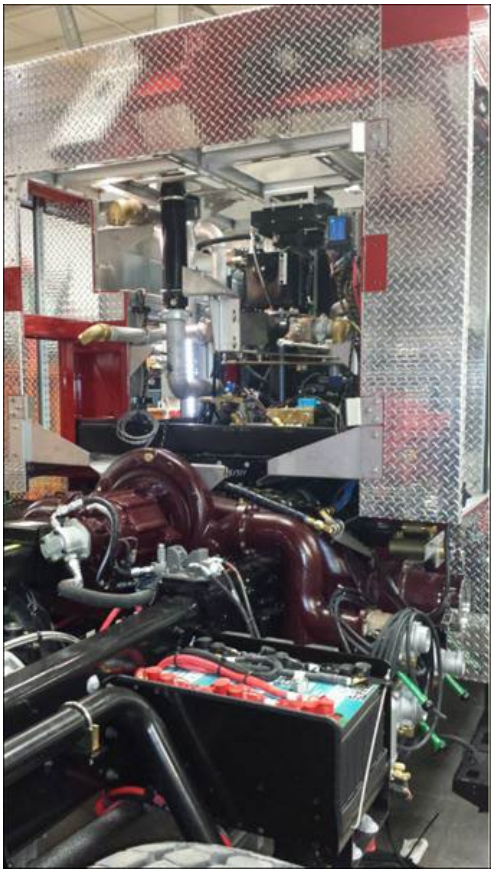
PUMP AND GAUGE PANEL

The pump operator's panel and gauge panels will be constructed of stainless steel with a brushed finish.

The side control panels will be constructed of stainless steel with a black UL-LX® spray-on polyurethane/polyurea material finish.

PUMP AND PLUMBING ACCESS

Simple access to the plumbing will be provided through the front of the body area by raising the cab for complete plumbing service and valve maintenance. Access to valves will not require removal of operator panels or pump panels. Access for rebuilding of the pump will not require removal of more than the tank to pump line and a single discharge line. This access will allow for fast, easy valve or pump rebuilding, making for reduced out of service times. Steps will be provided for access to the top of the pump.



Access to the pump will be provided by raising the cab. The pump will be positioned such that all maintenance and overhaul work can be performed above the frame and under the tilted cab. The service and overhaul work on the pump will not require the removal of operator panels or pump panels. Complete pump casing and gear case removal will require no more than removal of the intake and discharge manifolds, driveline, coolers and a single discharge line. The pump case and gear case will be able to be removed by lifting upward without interference from piping and be removable in less than 3 hours.

PUMP COMPARTMENT LIGHT

There will be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the plumbing area.

The light(s) will be activated by a toggle switch located in the pump compartment area.

Engine monitoring graduated LED indicators will be incorporated with the pressure controller.

THROTTLE READY GREEN INDICATOR LIGHT

There will be a green indicator light integrated with the pressure governor and/or engine throttle installed on the pump operators panel that is activated when the pump is in throttle ready mode.

PUMP HOUSE SWITCH PANEL

Remove the empty switch panel plate at mid inspection and replace with a spatter painted plate.

VACUUM AND PRESSURE GAUGES

The pump vacuum and pressure gauges will be silicone filled and manufactured by Class 1 Incorporated ©.

The gauges will be a minimum of 6.00" in diameter and will have white faces with black lettering, with a pressure range of 30.00"-0-600#.

The pump pressure and vacuum gauges will be installed adjacent to each other at the pump operator's control panel.

Test port connections will be provided at the pump operator's panel. One (1) will be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They will have 0.25 in. standard pipe thread connections and polished stainless steel plugs. They will be marked with a label.

PRESSURE GAUGES

The individual "line" pressure gauges for the discharges will be interlube filled and manufactured by Class 1©.

The gauges will be a minimum of 3.00" in diameter and will have white faces with black lettering.

Gauge construction will include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

Gauges will have a pressure range of 30"-0-400#.

The individual pressure gauge will be installed as close to the outlet control as practical.

This gauge will include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

WATER LEVEL GAUGE

An electric water level gauge will be incorporated in the pressure controller that registers water level by means of 9 LEDs. They will be at 1/8 level increments with a tank empty LED. The LEDs will be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.

To further alert the pump operator, the gauge will have a warning flash when the tank volume is less than 25%, and will have "Down Chasing LEDs when the tank is almost empty.

The level measurement will be ascertained by sensing the head pressure of the fluid in the tank or cell.

There will be a water level gauge provided on the Command Zone™, color display in the cab.

There will be a light driver module with this installation to power additional water level gauge(s) included on the apparatus.

ADDITIONAL WATER LEVEL GAUGE

There will be two (2) additional Fire Research MaxVision, model WLA280-A00, water tank remote indicator(s) provided and installed upper rear corners of the crew cab, to the rear of the crew doors. The indicators will show the volume of water in the tank on 96 easy to see super bright Tri-color LEDs. The indicator case will be waterproof and manufactured of Polycarbonate material with an integrated lens.

The remote indicator will indicate the level as a single color:

- Red for 25 percent or less
- Amber for up to 50 percent volume
- Blue for up to 75 percent volume
- Green for up to 100 percent volume

When the level reaches 25 percent, 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 (3) times.

The flash rate will be determined by the main water tank sensor.

It will have the program capability to adjust the brightness level for day time and night time viewing. The LEDs can also be programmed for different colors.

This module will be activated when the parking brake is applied.

CLASS "A" FOAM LEVEL GAUGE

A Fire Research TankVision Pro model WLA360-A00 cell/tank level indicator kit will be installed on the pump operators panel. The kit will include an electronic indicator module, a pressure sensor, a 10' sensor cable and a tank vent. The indicator will show the volume of Class "A" foam concentrate in the cell/tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs will provide for a viewing angle of 180 degrees. The indicator case will be waterproof, manufactured of Polycarbonate/Nylon material and have a distinctive green label.

The program features will be accessed from the front of the indicator module. The program will support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display cell/tank volume, adjustable brightness control levels and a data link to connect remote indicators. Low foam level warnings will include flashing LEDs at 1/4 cell/tank and down chasing LEDs when the cell/tank is almost empty.

The indicator will receive an input signal from an electronic pressure sensor. The sensor will be mounted from the outside of the foam cell/tank near the bottom. No probe will be placed on the interior of the cell/tank. Wiring will be weather resistant and have automotive type plug-in connectors.

SIDE CONTROL PUMP OPERATOR'S/PUMP PANEL LIGHTING

Illumination will be provided for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination will be a minimum of five (5) foot-candles on the face of the device. Internal illumination will be a minimum of four (4) footlamberts.

The pump panels will be illuminated by two (2) Truck-Lite, Model 60354C, 6.00" x 2.00" oval white LED lights with Model 60700, grommets and chrome covers installed on the back of the cab, one (1) on the driver's side and one (1) on the passenger's side.

The pump operator's panel will utilize the same LED strip lighting at the forward doorframe as all other compartment lighting.

There will be a small white LED pump engaged indicator light installed overhead.

AIR HORN SYSTEM

Two (2) Hadley®, eTone, chrome air horns will be recessed in the front bumper. The air horn system will be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve will be installed to prevent the loss of air in the brake system.

Air Horn Location

The air horns will be located on the left side of the bumper, outside of the frame rail.

Air Horn Control

The air horn(s) will be activated by the following:

- Right side lanyard. The lanyard to be a nylon rope.
- Left side lanyard. The lanyard to be a nylon rope.
- Steering wheel horn ring with electric/air horn selector switch

ELECTRONIC SIREN

A Whelen, Model: 295HFSC9, 200 watt, dual tone, electronic siren with noise canceling microphone will be provided.

This siren to be active when the battery switch is on and that emergency master switch is on.

ELECTRIC SIREN, LOCATION,

Siren head will be mounted overhead location #3.

The electronic siren will be controlled on the siren head only. No horn button or foot switches will be provided.

SPEAKERS

There will be two (2) Whelen Projector™ Series, Model SA314A, 100-watt, cast aluminum speakers with natural finish provided. Each speaker will be connected to the siren amplifier.

The speakers will be recessed in each side of the front bumper, inside of the frame rails.

AUXILIARY MECHANICAL SIREN

There will be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.

The Q2B will be chrome finish.

The siren will have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and will be labeled Q2B+ at the battery. The power solenoid will only be enabled when the emergency master switch is on.

The siren will have a 2-gauge ground wire connected to the chassis battery stud. The cable will be labeled Q2B- at the battery.

The mechanical siren will be recessed in the front bumper on the right side. The siren will be supported by the bumper framework. The face of the siren will be flush with the face of the bumper. The hole in the bumper face will match the face of the siren.

MECHANICAL SIREN CONTROL

The mechanical siren will be activated by the following:

- Right side foot switch.
- Left side foot switch.

A momentary chrome push button switch will be included in the right side dash panel to activate the siren brake.

WEDGE STYLE FOOT SWITCH BRACKET

There will be one (1) wedge style bracket provided at the driver side Q-Siren switch side on cab the floor. The bracket will be large enough to hold one (1) foot switch. The bracket will be angled approximately 30 degrees.

WARNING SYSTEM CONTROL

There will be a Whelen®, CenCom CORE™ WeCanX™ warning system control provided. The system will be a microprocessor based system that utilizes a centralized means of controlling the warning lighting on the vehicle.

The system will include a photocell mounted in a location in the cab with a clear view of the ambient light to sense external ambient light.

The warning system controlled warning lighting will be controlled as following:

When in respond mode (high ambient light):

When the emergency master switch is active, the associated warning light switch is activated, and the parking brake is released, and the vehicle is in high ambient light conditions, the warning light control system will change the flash pattern to LONG FLASH 75 RANDOM flash with high intensity light output.

When in respond mode (low ambient light):

When the emergency master switch is active, the associated warning light switch is activated, and the parking brake is released, and the vehicle is in low ambient light conditions, the warning light control system will change the flash pattern to SIGNAL ALERT 75 ALTERNATING flash with high intensity light output.

When in blocking mode (high ambient light):

When the emergency master switch is active, the associated warning light switch is activated, and the parking brake is applied, and the vehicle is in high ambient light conditions, the warning light control system will change the flash pattern to SINGLE FLASH 75 ALTERNATING flash with high intensity light output.

When in blocking mode (low ambient light):

When the emergency master switch is active, the associated warning light switch is activated, the parking brake is applied, and the vehicle is in low ambient light conditions, the warning light control system will enter the Whelen® Dynamic Variable Intensity (DVI) mode. DVI mode lowers warning light output intensity and creates a "calming" effect by slowing flash rates and synchronizing warning light flash patterns.

CONTROL HEAD MODULE

There will be one (1) Whelen® WeCanX® Model CCTL9, 2.51" H x 6.01" W x 2.07" D, six (6) button control head module with rotary knob installed in the cab locate at preconstruction .

The CCTL9 control head will have the following functions available:

- Pushbutton switches - six (6) programmable for various functions (Air horn, Siren, Traffic Directing, Scene Lights, etc.).
- Rotary knob - seven (7) position rotary switch for RAD (Radio), PA (Public Address), MAN (Manual Control), HF (Hands Free), T1 (Open), T2 (Open), and T3 (Open).
- Microphone input jack and microphone extension cable.

The control head will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

FRONT ZONE UPPER WARNING LIGHTS

There will be two (2) Whelen®, Model WCXF4MINI, 21.50" long lightbars mounted on the cab roof, one (1) on each side, above the left and right cab doors, at a 30 degree angle.

The left side lightbar will include the following:

- One (1) amber flashing LED module in the outside end position.
- One (1) red flashing LED module in the outside front corner position.
- One (1) white flashing LED module in the outside front position.
- One (1) red flashing LED module in the inside front position.
- One (1) red flashing LED module in the inside front corner position.

The right side lightbar will include the following:

- One (1) red flashing LED module in the inside front corner position.
- One (1) red flashing LED module in the inside front position.
- One (1) white flashing LED module in the outside front position.
- One (1) red flashing LED module in the outside front corner position.
- One (1) amber flashing LED module in the outside end position.

There will be clear lenses included on the lightbar.

These light bars will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

There will be a switch in the cab on the switch panel to control the lightbars.

The white LEDs will be deactivated when the parking brake is applied.

TRAFFIC LIGHT CONTROLLER

There will be a GTT, Model 794* LED Opticom traffic light controller with national standard high priority remote mounted on the front edge of the cab driver side.

The Opticom traffic light controller will be activated by a cab switch with emergency master control.

The Opticom traffic light controller will have a driver side momentary cab switch with no emergency master control.

The Opticom traffic light controller will be disabled when the parking brake is applied.

SIDE WARNING LIGHTS

There will be two (2) Whelen®, Freedom IV WeCanX™ LED Mini lightbars, 21.50" long, mounted on the roof, one (1) on each side, over the crew cab doors.

Each lightbar will include the following:

- One (1) red flashing LED module in the outside rear corner position.

- One (1) blue flashing LED module in the rear outside position.
- One (1) red flashing LED module in the front outside position.
- One (1) red flashing LED module in the outside front corner position.

There will be clear lenses included on the lightbar.

These light bars will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

There will be a switch in the cab on the switch panel to control the lightbars.

CAB FACE WARNING LIGHTS

There will be four (4) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" steady burn LED warning lights installed on the cab face, above the headlights, mounted in a common bezel.

- The left side outside warning light to include red LEDs
- The left side inside warning light to include blue LEDs
- The right side inside warning light to include blue LEDs
- The right side outside warning light to include red LEDs
- The warning light lens color(s) to be clear
- The housing to be polished and the trim shall be chrome

There will be a switch located in the cab, on the switch panel, to control the lights.

The flash pattern of the lights will be controlled through the supplier based electrical control system.

FRONT WARNING LIGHT

There will be two (2) Whelen®, Model M6*CS, steady burn LED warning lights with lens color(s) to be clear and chrome trim provided cab grill center each side.

The color of the light(s) will be red.

The light(s) will be activated with the front warning switch.

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

Any white light will be disabled and any amber light activated when the parking brake is applied.

HEADLIGHT FLASHER

The high beam headlights will flash alternately between the left and right side.

There will be a switch installed in the cab on the switch panel to control the high beam flash. This switch will be live when the battery switch and the emergency master switches are on.

The flashing will automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.

SIDE ZONE LOWER FRONT WARNING

There will be two (2) Whelen®, Model M6V2**, 4.30" high x 6.70" wide x 2.50" deep LED warning and scene lights with chrome trim installed per the following:

- There will be one (1) each side on the bumper extension.
- The left side, side front light to include red warning LEDs.
- The right side, side front light to include red warning LEDs.
- The warning light lens color(s) to be clear.

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

The warning light portion of the M6V2* warning/scene lights will be set to steady burn pattern #32.

The scene LEDs will be activated when the perimeter lights are activated and when the left directional signal is activated, the left scene lights will activate. When the right directional signal is activated, the right scene lights will activate.

There will be a switch in the cab on the switch panel to control the lights.

SIDE ZONE LOWER MIDDLE WARNING

There will be two (2) Whelen®, DUO™ Model M6D#, 4.31" high x 6.75" long x 1.37" deep two color LED warning lights with chrome trim and clear lenses, installed per the following:

- There will be one (1) each side of cab rearward of crew cab doors.
- The left side middle dual color flashing LED light(s) to include red alternating with amber.
- The right side middle dual color flashing LED light(s) to include red alternating with amber.

The lights will be set to steady burn.

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

There will be a switch in the cab on the switch panel to control the lights.

Any white LED's will be disabled when the parking brake is applied.

SIDE ZONE LOWER REAR WARNING

There will be two (2) Whelen®, Model M6V2**, 4.30" high x 6.70" wide x 2.50" deep LED warning and scene lights with chrome trim installed per the following:

- There will be one (1) each side on the rear fender panel.
- The left side, side rear light to include red warning LEDs.
- The right side, side rear light to include red warning LEDs.
- The warning light lens color(s) to be clear .

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

The warning light portion of the M6V2* warning/scene lights will be set to steady burn pattern #32.

The scene LEDs will be activated when the perimeter lights are activated and side scene lights activated when the chassis transmission is shifted into reverse.

There will be a switch in the cab on the switch panel to control the lights.

SIDE WARNING LIGHTS

There will be two (2) Whelen®, DUO™ Model M6D#, 4.31" high x 6.75" long x 1.37" deep two color LED flashing warning light(s) with chrome trim and clear lens(es), provided on the 45 degree angled corners of the bumper extension.

The light(s) to include red and white LEDs.

These light(s) will be activated with the side warning switch.

The warning lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

White LEDs will be disabled when the parking brake is applied.

SIDE WARNING LIGHTS

There will be one (1) Whelen® TIR3™, Model RS*03ZCR LED light(s) with chrome trim and clear lenses provided on the side of the apparatus, one each side of rear body rubrail.

The light(s) to include red LEDs.

The light(s) will be set to flash pattern #25 - Steady.

The light(s) will be activated with the side warning switch.

The light(s) will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

White LEDs will be deactivated when the parking brake is applied.

REAR ZONE LOWER LIGHTING

There will be two (2) Whelen®, Model M6**S, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning lights located at the rear of the apparatus included in the tail light housings.

- The left side rear warning light to include blue LEDs.
- The right side rear warning light to include red LEDs.
- The warning light lens color(s) to be clear.

The flash pattern of the lights will be controlled through the supplier based electrical control system.

There will be a switch in the cab on the switch panel to control the lights.

REAR WARNING LIGHTS

There will be two (2) Whelen®, Model M6D#, DUO LED warning lights and chrome trim provided at the rear of the apparatus, above the tail lights.

The light(s) to include red and amber LEDs.

The warning light lens color(s) to be clear.

These light(s) will be controlled with a separate switch in cab.

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

REAR AND SIDE ZONE UPPER WARNING LIGHTS

There will be two (2) Whelen®, Model B63M7** LED beacon with lower LED flashing warning lights provided at the rear of the truck, one (1) each side.

Each light will include a flashing LED beacon and a Whelen, Model M7* LED flashing light, mounted in a polished aluminum housing.

The beacons will have red LEDs and be provided with color of the domes to be clear.

The color of the Whelen, Model M7* LED flashing lights will be light(s) to include amber LEDs and include a lens that is warning light lens color(s) to be clear.

These beacons/lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

There will be a switch located in the cab on the switch panel to control the lights.

The rear beacons shall be installed at a 33 degree angle to the outside of the rear of the truck.

TRAFFIC DIRECTING LIGHT

There will be one (1) Whelen®, Model TANF85, 45.12" long x 2.37" high x 2.37" deep, amber LED traffic directing light installed for use with the Whelen CORE™ system control head Model CCTL9, at the rear of the apparatus.

The traffic directing lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

This traffic directing light will be surface mounted on a full width treadplate wedge bracket at the rear of the apparatus as high as practical.

ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT

The following guidelines will apply to the 120/240 VAC system installation:

General

Any fixed line voltage power source producing alternating current (ac) line voltage will produce electric power at 60 cycles plus or minus 3 cycles.

Except where superseded by the requirements of the current edition of applicable NFPA standards, all components, equipment and installation procedures will conform to NFPA 70, National Electrical Code (herein referred to as the NEC).

Line voltage electrical system equipment and materials included on the apparatus will be listed and installed in accordance with the manufacturer's instructions. All products will be used only in the manner for which they have been listed.

Grounding

Grounding will be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems will not be used. Only stranded or braided copper conductors will be used for grounding and bonding.

An equipment grounding means will be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

The grounded current carrying conductor (neutral) will be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor will be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.

In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure will be bonded to the vehicle frame by a copper conductor. This conductor will have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements will be permitted to be used.

All power source system mechanical and electrical components will be sized to support the continuous duty nameplate rating of the power source.

Operation

Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, will be permanently attached to the apparatus at any point where such operations can take place.

Provisions will be made for quickly and easily placing the power source into operation. The control will be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train will be equipped with a means to prevent the unintentional movement of the control device from its set position.

A power source specification label will be permanently attached to the apparatus near the operator's control station. The label will provide the operator with the following information:

- Rated voltage(s) and type (ac or dc)
- Phase
- Rated frequency
- Rated amperage
- Continuous rated watts
- Power source engine speed

Direct drive (PTO) and portable generator installations will comply with Article 445 (Generators) of the NEC.

Overcurrent protection

The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device will not exceed 144.00" (3658 mm) in length.

For fixed power supplies, all conductors in the power supply assembly will be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).

For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device will be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).

Wiring Methods

Fixed wiring systems will be limited to the following:

- Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)
- or
- Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)

Electrical cord or conduit will not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring will be run as follows.

- Separated by a minimum of 12.00" (305 mm), or properly shielded, from exhaust piping
- Separated from fuel lines by a minimum of 6.00" (152 mm) distance

Electrical cord or conduit will be supported within 6.00" (152 mm) of any junction box and at a minimum of every 24.00" (610 mm) of continuous run. Supports will be made of nonmetallic materials or corrosion protected metal. All supports will be of a design that does not cut or abrade the conduit or cable and will be mechanically fastened to the vehicle.

Wiring Identification

All line voltage conductors located in the main panel board will be individually and permanently identified. The identification will reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends will be labeled showing function and wire size.

Wet Locations

All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, will be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.

All receptacles located in a wet location will be not less than 24.00" (610 mm) from the ground. Receptacles on off-road vehicles will be a minimum of 30.00" (762 mm) from the ground.

The face of any wet location receptacle will be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle will be installed in a face up position.

Dry Locations

All receptacles located in a dry location will be of the grounding type. Receptacles will be not less than 30.00" (762 mm) above the interior floor height.

All receptacles will be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they will be so marked.

Listing

All receptacles and electrical inlet devices will be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages will be rated for the appropriate service.

Electrical System Testing

The wiring and associated equipment will be tested by the apparatus manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment will be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test will be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test will be conducted after all body work has been completed.

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

Operational Test per Current Edition NFPA Standard

The apparatus manufacturer will perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in

working order. The test will be witnessed and the results certified by an independent third-party certification organization.

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

The power source will be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current edition of applicable NFPA standards.

Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current edition of applicable NFPA standards will be applied to the low voltage electrical system during the operational test.

GENERATOR

The apparatus will be equipped with an alternating current (AC) electrical power system. The generator will be a Harrison, 4,800 watt (120/240 VAC | 40/20 amps) Stinger, hydraulic driven unit. The generator will be driven by a transmission power take off unit, through a hydraulic pump and motor.

The hydraulic engagement supply will be operational at any time (no interlocks).

To properly monitor the generator performance, a digital voltage, frequency, hour meter will be provided.

GENERATOR LOCATION

The generator will be mounted in the cargo area at the front of the body in passenger side. The flooring in this area will be either reinforced or constructed, in such a manner, that it will handle the additional weight of the generator.

GENERATOR START

There will be a switch provided on the cab instrument panel to engage the generator.

CIRCUIT BREAKER PANEL

The circuit breaker panel will be located high on the back wall of compartment LS4.

ELECTRIC CORD REEL

Furnished with the 120 volt AC electrical system will be a Hannay, Series 1600, cord reel. The reel will be provided with a 12-volt electric rewind switch, that is guarded to prevent accidental operation and labeled for its intended use. The switch will be protected with a fuse and installed at a height not to exceed 72.00" above the operators standing position.

The exterior finish of the reel(s) will be painted job color matching the lower body.

A Nylatron guide to be provided to aid in the payout and loading of the reel. A ball stop will be provided to prevent the cord from being wound on the reel.

A label will be provided in a readily visible location adjacent to the reel. The label will indicate current rating, current type, phase, voltage and total cable length.

A total of two (2) cord reels will be provided one (1) reel in the driver's side front compartment over the driver's side front stabilizer and one (1) reel in the passenger's side front compartment over the passenger's side front stabilizer.

The cord reel will be configured with three (3) conductors.

CORD

Provided for electric distribution will be two (2) lengths, one (1) for each reel, of 100 feet of yellow 10/3 electrical cord, weather resistant 105 degree Celsius to -50 degree Celsius, 600 volt jacketed SOOW cord. A Hubbell L5-20, 20 amp, 120 volt, twist lock connector body will be installed on the end of the cord.

REEL ENCLOSURE

An aluminum treadplate enclosure will be installed over the reel. The enclosure will be provided with a stainless steel hinge that will allow the cover to be opened.

A captive roller assembly will be provided to assist with the payout of the cord. A ball stop will be provided on the cord to stop the cord at the roller assembly.

A total of one (1) will be installed passenger side forward above pump module.

POWER OUTLET STRIP

There will be one (1) receptacle strip(s) with six (6) 15 amp 120 volt AC straight blade receptacles provided right lower rear wall corner in the EMS cabinet 8.00" from floor.

The strip(s) selected will be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).

There will be a label installed near the strip(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

120 VOLT RECEPTACLE

There will be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed P4 recessed in rear side wall 15.00 inch from floor of shelve. The NEMA configuration for the receptacle(s) will be 5-20R.

The receptacle(s) will be powered from the onboard generator to shoreline power transfer switch.

There will be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

120 VOLT RECEPTACLE

There will be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed D4 recessed in rear side wall. Move the receptacle that is close to the door frame down down as close to the floor as practicle leaving the wire in the hole that is already there for the wire.. The NEMA configuration for the receptacle(s) will be 5-20R.

The receptacle(s) will be powered from the on board generator.

There will be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

FOUR (4)-SECTION 105 FOOT AERIAL LADDER

CONSTRUCTION STANDARDS

The ladder will be constructed to meet all of the requirements as described in the current NFPA 1901 standards.

The aerial device will be a true ladder type device; therefore ladders attached to booms will not be considered.

These capabilities will be established in an unsupported configuration.

All structural load supporting elements of the aerial device that are made of a ductile material will have a design stress of not more than 50 percent of the minimum yield strength of the material based on the combination of the live load and the dead load. This 2:1 structural safety factor meets the current NFPA 1901 standard.

All structural load supporting elements of the aerial device that are made of non-ductile material will have a design stress of not more than 20 percent of the minimum ultimate strength of the material, based on the combination of the rated capacity and the dead load. This 5:1 safety factor meets the current 1901 NFPA standard.

Wire ropes and attaching systems used to extend and retract the fly sections will have a 5:1 safety factor based on the ultimate strength under all operating conditions. The factor of safety for the wire rope will remain above 2:1 during any extension or retraction stall. The minimum ratio of the diameter of wire rope used to the diameter of the sheave used will be 1:12. Wire ropes will be constructed of seven (7)

strands over an inner wire core for increased flexibility. The wire rope will be galvanized to reduce corrosion.

The aerial base pivot bearings will be maintenance free type bearings and require no external lubrication.

The aerial device will be capable of sustaining a static load one and one-half times its rated tip load capacity (live load) in every position in which the aerial device can be placed when the vehicle is on a firm level surface.

The aerial device will be capable of sustaining a static load one and one-third times its rated tip load capacity (live load) in every position the aerial device can be placed when the vehicle is on a slope of 5 degrees downward in the direction most likely to cause overturning.

With the aerial device out of the cradle and in the fully extended position at 0 degrees elevation, a test load will be applied in a horizontal direction normal to the centerline of the ladder. The turntable will not rotate and the ladder will not deflect beyond what the product specification allows.

All welding of aerial components, including the aerial ladder sections, turntable, pedestal, and outriggers, will be in compliance with the American Welding Society standards. All welding personnel will be certified, as qualified under AWS welding codes.

The aerial device will be capable of operating with the maximum rated tip load in either of the two (2) following conditions:

- Conditions of high wind up to 50 mph
- Conditions of icing, up to a coating of 0.25" over the entire aerial structure

All of the design criteria must be supported by the following test data:

- Strain gage testing of the complete aerial device
- Analysis of deflection data taken while the aerial device was under test load

The following standards for materials are to be used in the design of the aerial device:

- Materials are to be certified by the mill that manufactured the material
- Material testing that is performed after the mill test will be for verification only and not with the intent of changing the classification
- All welded structural components for the ladder will be traceable to their mill lots

LADDER CONSTRUCTION

The ladder will be comprised of four (4) sections.

The ladder will have the capability to support a minimum of 750 lb at the tip in the unsupported configuration, based upon 360 degree rotation, up to full extension and from -8 degrees to +75 degrees.

The ladder (handrails, baserails, trusses, K-braces and rungs) will be constructed of high strength low alloy steel, minimum 70,000 lb per square inch yield, with full traceability on all structural members.

Each section will be trussed diagonally, vertically and horizontally using welded steel tubing.

All ladder rungs will be round and welded to each section utilizing "K" bracing for torsional rigidity.

The inside width dimensions of the ladder will be:

- Base Section: 39.00"
- Inner-Mid Section: 32.25"
- Outer-Mid Section: 26.62"
- Fly Section: 21.62"

The height of the handrails above the centerline of the rungs will be:

- Base Section: 26.75"
- Inner-Mid Section: 22.87"
- Outer-Mid Section: 20.25"
- Fly Section: 17.50"

The ladder will be designed to provide continuous egress for firefighters and civilians from an elevated position to the ground. The end of the fly section will be constructed in a manner that aids personnel in climbing off the ladder.

The egress section will be designed to maintain the rated load of the aerial device. It will be bolted on for easy replacement.

VERTICAL HEIGHT

The ladder will extend to a minimum height of 105' above the ground at full extension and elevation. The measurement of height will be consistent with NFPA standards.

HORIZONTAL REACH

The rated horizontal reach will be a minimum of 100'. The measurement of horizontal reach will be consistent with NFPA standards.

TURNTABLE

The upper turntable assembly will connect the aerial ladder to the turntable bearing. The steel structure will have a mounting position for the aerial elevation cylinders, ladder connecting pins, and upper turntable operator's position.

The turntable will be coated with a non-skid, chemical resistant material in the walking areas. The stepping surfaces will meet the skid-resistance requirements of the current NFPA 1901 standard.

The turntable platform will be approximately 95.00" wide x 84.50" long.

The turntable handrails will be a minimum 42.00" high and will not increase the overall travel height of the vehicle. The handrails will be constructed from aluminum and have a slip resistant knurled surface.

A foot switch will be located at the turntable control console to allow hydraulic flow to the aerial device. The foot switch will be protected by a cover to prevent accidental activation. Activation of the foot switch is necessary for aerial operation.

ELEVATION SYSTEM

Two (2) double acting lift cylinders will be utilized to provide smooth precise elevation from 8 degrees below horizontal to 75 degrees above horizontal.

The lift cylinders will have a 6.00" internal diameter (bore), 0.50" wall thickness, 4.50" diameter cylinder rod and a 34.84" stroke.

The lift cylinders will be equipped with integral holding valves located on the cylinder to prevent the unit from falling should the charged lines be severed at any point within the hydraulic system.

The lift cylinders will be mounted utilizing maintenance free spherical bearings on both ends of the cylinders. The bearings will help reduce pin wear.

Ladder tip speed is automatically decelerated when the angle is above 60 degrees, reducing "tip-lash".

The pivot pins will be stainless steel with greaseless bushings and will be 2.25" in diameter. All elevation pins will be stainless steel.

EXTENSION/RETRACTION SYSTEM

A full hydraulic powered extension and retraction system will be provided using two (2) hydraulic cylinders and wire ropes.

Each cylinder is capable of operating the ladder in the event of a failure to the other.

The extension cylinder will have a 3.00" internal diameter (bore), 1.75" diameter rod and a 134.00" stroke.

Extension and retraction will be internally limited within the cylinders, eliminating excess strain on wire ropes, sheaves and the ladder structure.

Each of the cylinders, wire ropes and sheave assemblies will be completely independent of the other, so as to provide a safety factor wherein a failure of one assembly will not affect the function and operation of the other.

The extension cylinders will be equipped with integral holding valves to prevent the unit from retracting should the charged lines be severed at any point within the hydraulic system.

The extension cylinders will be mounted utilizing maintenance free spherical bearings.

The cylinders will also have internal deceleration valves to cushion the movement of the cylinder when approaching full extension or retraction.

The reeling of the wire rope will be such as to provide synchronized, simultaneous movement of all sections to full extension.

The extension/retraction cables will be 7-flex galvanized wire rope with stainless steel threaded ends and will possess the following characteristics:

- Inner Section: 0.50" diameter with 26,200 lb nominal design strength
- Mid Section: 0.38" diameter with 14,880 lb nominal design strength
- Fly Section: 0.31" diameter with 10,380 lb nominal design strength

Wear pads made of polymer material will be used between the telescoping sections for maximum weight distribution, strength and smoothness of operation.

Adjustment screws will be provided on the wear pads to permit proper side alignment.

All sheaves will be plastic and greaseless and all sheave pins and pivot pins will be polished stainless steel.

ROTATION SYSTEM

A 46.00" diameter, external tooth, monorace, slewing ring bearing will be used for the rotation system. The gear teeth will be stub tooth form.

The bearing will provide 360 degree continuous rotation.

The turntable will be bolted to the bearing using 36 SAE Grade 8, 0.875" diameter bolts.

To secure the bearing to the torque box, 36 Grade 8, 0.875" diameter bolts will be used.

The turntable base and the torque box bearing plate will be machined flat, within 0.007" thereby providing even distribution of forces.

Two (2) hydraulically driven planetary gear boxes will be used to provide infinite and minute rotation control throughout the entire rotational travel.

Each planetary gearbox will have a torque rating of 130,000 lb per inch.

Each planetary gearbox will have a spring applied, hydraulically released disc type swing brake will be furnished to provide positive braking of the turntable assembly.

ROTATION INTERLOCK

A permanently installed prevention mechanism will be provided as part of the rotation system to prevent the rotation of the aerial device to the side in which the stabilizers have not been fully deployed or are short-jacked.

The mechanism will allow full and unrestricted use of the aerial in the 180 degree area on the side(s) where the stabilizers have been fully deployed.

The system will also have a manual override to comply with NFPA 1901.

TORQUE BOX

A "torsion box" subframe will be installed between the two (2) sets of stabilizers.

The torque box will be constructed of 0.312" steel plate (50,000 lb per square inch yield) with steel tubing reinforcement on each side of the box in the turntable area.

The torque box subframe assembly is capable of withstanding all torsional and horizontal loads when the unit is on the stabilizers.

The torque box will be bolted to the chassis frame rails using 20 SAE Grade 8, 0.750" bolts with nuts.

LOAD CAPACITIES

The following load capacities will be established, with the stabilizers at full horizontal extension and placed in the down position, to level the truck and to relieve the weight from the tires and axles.

Capacities will be based upon full extension and 360 degree rotation.

A load chart, visible at the operator's station, will be provided. The load chart will show the recommended safe load at any condition of the aerial device's elevation and extension.

50 MPH WIND CONDITIONS/WATERWAY DRY

Degrees of Elevation	-8 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 75
Egress	750	750	750	750	750	750	750	750
Fly	-	-	-	-	-	-	250	750
Upper Mid	-	-	-	-	250	250	500	750
Lower Mid	-	-	-	250	250	500	1000	1000
Base	-	-	250	250	250	750	1000	1000

50 MPH WIND CONDITIONS/WATERWAY CHARGED

Degrees of Elevation	-8 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 75
Egress	500	500	500	500	500	500	500	500
Fly	-	-	-	-	-	250	500	750
Upper Mid	-	-	-	-	250	500	750	1000
Lower Mid	-	-	-	250	500	750	1000	1000
Base	-	-	250	500	750	1000	1000	1000

Reduced loads at the tip can be redistributed in 250 lb increments to the fly, mid, or base sections as needed.

The tip capacity will be reduced to zero when flowing water with the nozzle above the waterway centerline.

BOOM SUPPORT

A heavy duty boom support will be provided for support of the ladder in the travel position. On the base section of the ladder, a stainless steel scuffplate will be provided where the ladder comes into contact with the boom support.

The boom support will be located just to the rear of the chassis cab.

AERIAL BOOM SUPPORT LIGHT

There will be one (1) Amdor®, Model AY-LB-12HW012, 190 lumen, 12" long, white LED strip light mounted on the boom support cradle. This light will be activated when the aerial master switch is activated.

BOOM SUPPORT COMPARTMENT DIRECTLY BEHIND THE CAB

A compartment will be provided on each side of the apparatus directly behind the cab.

The interior dimensions of each compartment will be approximately 7.75" wide x 10.00" deep. The height of the compartment will be as tall as the side sheet height of the body.

The compartment exterior and single pan door will be constructed of smooth aluminum and painted job color.

The clear door opening of each compartment will be 5.75" wide. Two (2) lift and turn latches will be provided on each door. Latches will be spaced as evenly as possible, yet both latches will remain accessible from the ground.

ALUMINUM COVER STABILIZER CONTROLS

A cover will be installed on the back side of the stabilizer controls to protect them from the elements.

AERIAL BOOM PANEL

There will be one boom panel provided on each side of the aerial ladder base section. The boom panel will be painted Red #213 to match job color.

The boom panels will be designed so no mounting bolts are in the face of the panel. This will keep the lettering surface free of holes.

The boom panel that is located on the stokes box side will be mounted such that the rear of the boom panel is flush with the rear of the stokes box. The front of the boom panel will hang past the front of the stokes box and be supported by an additional bracket attached to the aerial base section.

EXTENSION INDICATOR

Extension markings and corresponding numerical indicators will be provided along each inside and outside top rail of the base section of the aerial every 10'. They will indicate various positions of extension up to full. Markings and indicators will be clearly visible to the console operator. To aid in visibility during hours of darkness, the markings and numerical indicators will be red reflective material.

FOLDING STEPS

One (1) set of folding steps will be provided at the tip of the ladder. An additional set of folding steps will be provided at the base of the fly section. The steps will be bright finished with a luminescent tread coating, that is rechargeable from any light source and can hold a charge for up to 24 hours, on the stepping surface. Each step will have an integrated LED to illuminate the stepping surface.

AERIAL DEVICE RUNG COVERS

Each rung will be covered with a secure, heavy-duty, fiberglass pultrusion that incorporates an aggressive, no-slip coating.

The rung covers will be glued to each rung and will be easily replaceable should the rung cover become damaged.

The center portion of each rung cover will be black and the outside 2.00" edge at each side will be photoluminescent to assist in providing a light source for each rung during low light conditions.

Under no circumstances will the rung covers be fastened to the rungs using screws or rivets.

The rung covers will have a 10-year, limited warranty.

LADDER STORAGE MOUNTING BRACKETS

There will be brackets that are painted to match the aerial device provided near the end of the fly section of the aerial for mounting a roof ladder.

The mounting brackets will accommodate a 16' Duo-Safety 875-DR, 16.00" wide roof/wall ladder as determined by the type of aerial device and the available space.

STOKES STORAGE BOX

There will be one (1) aluminum storage box(es) provided at the base section of the aerial ladder on the right side of the aerial device while viewed from the turntable. The box(es) will be painted to match the aerial device. The box(es) will be located adjacent to the aerial boom panel and will have a hinged cover with pair of butterfly latches to secure the stokes basket. The cover will have the same finish as the box. The cover will be tied in to the open door indicator circuitry when in the open position. The box(es) will have no louvers.

The size of the stokes basket will be 86.00" long x 24.00" wide x 8.00" high.

The maximum capacity of each box will be 75 lb.

SPECIAL LENGTH EGRESS

A special egress section will be provided on the aerial ladder. The egress will be shortened by one (1) rung.

LIMITED RETRACTION

The aerial device will have limited retraction.

LIGHTS FOR TURNTABLE WALKWAY

There will be white LED lights provided at the aerial turntable. The lights will be located to illuminate the entire walking surface of the turntable including the area around the turntable console. These lights will be activated by the aerial master switch.

TURNTABLE CONSOLE LIGHTING

There will be one (1) TecNiq, Model T10, white LED light strip mounted in the turntable console cover to illuminate the controls located on both the upper and lower portion of the turntable control station. These lights will be activated by the aerial master switch.

TURNTABLE CONTROL STATION

There will be a turntable control station located on the left hand side of the turntable so the operator will be able to easily observe the ladder tip while operating the controls. The controls will permit the operator to regulate the speed of the aerial functions within safe limits (as determined by the manufacturer and NFPA standards). The controls will be clearly marked and lighted for nighttime operation. A hinged aluminum cover will be provided. The momentary foot switch located at the turntable control station will activate the aerial function controls. They are capable of being operated independently or simultaneously.

The following controls and indicator lights will be clearly identified, illuminated, and conveniently located for ease of operation and viewing:

- Elevation, extension/retraction, and rotation controls

- High idle switch

- Rung alignment indicator light

- Tip/Tracking lights switch

- Hydraulic system pressure gauge

- Indicator/Alarm test switch

- EPU switch

- Operator's load chart

- Stabilizer Not Fully Extended indicator light

- Monitor controls

- Aerial waterway flow meter

STABILIZER CONTROL STATION

There will be two (2) easily accessible control stations, one (1) for driver side stabilizers and one (1) for passenger side stabilizers, located at the rear of the apparatus.

The following controls and indicator lights will be clearly identified, illuminated, and conveniently located for ease of operation and viewing at each of the control stations except where otherwise noted:

- Left Rear Stabilizer Firm On Ground indicator light (driver side panel only)

- Left Rear Stabilizer Fully Extended Indicator light (driver side panel only)

- Left Rear Stabilizer In/Out switch (driver side panel only)

- Left Rear Stabilizer Up/Down switch (driver side panel only)

- Left Front Stabilizer Firm On Ground indicator light (driver side panel only)

- Left Front Stabilizer Fully Extended indicator light (driver side panel only)

- Left Front Stabilizer In/Out switch (driver side panel only)

- Left Front Stabilizer Up/Down switch (driver side panel only)

- Right Rear Stabilizer Firm On Ground indicator light (passenger side panel only)

- Right Rear Stabilizer Fully Extended indicator light (passenger side panel only)

- Right Rear Stabilizer In/Out switch (passenger side panel only)

- Right Rear Stabilizer Up/Down switch (passenger side panel only)

- Right Front Stabilizer Firm On Ground indicator light (passenger side panel only)

- Right Front Stabilizer Fully Extended indicator light (passenger side panel only)

- Right Front Stabilizer In/Out switch (passenger side panel only)

- Right Front Stabilizer Up/Down switch (passenger side panel only)

- Hydraulic emergency power switch

- High idle switch

STABILIZERS

The vehicle will come equipped with a stabilization system consisting of four (4) hydraulically operated out and down style stabilizers. This system will meet or exceed all requirements of the NFPA specifications related to stabilization and setup on sloped surfaces.

The stabilizer/leveling jacks will have a maximum spread of 16' measured from the centerline of the jack footpads when the beams are fully extended. The beams will be 6.88" wide x 9.00" high with 3/4" thick top and bottom plates and 3/4" thick sides of 100,000-PSI minimum yield strength steel. The cylinders will have pilot-operated check valves with thermal relief designed to insure that the beams will not drift out of the stowed position during travel. Wear pads will guide the stabilizers.

The horizontal extension cylinders will be totally enclosed within the beams and will incorporate telescoping hydraulic tubing to supply the jack cylinder hydraulic power. Stabilizer hydraulic hoses will remain stationary during operation of the stabilizers to prevent hose wear and potential failure. The cylinders will be equipped with decelerators to reduce the speed of extension and retraction when the beams are near the fully retracted and extended positions. The stabilizer extension hydraulic cylinders will have the following dimensions: 2.25" bore, 1.38" rod, and 51.25" stroke.

The vertical jack cylinders will be capable of 12.00" ground penetration. The cylinders will be supplied with pilot operated check valves on each jack cylinder to hold the cylinder in the stowed or working position, should a charged line be severed at any point in the hydraulic system. For safety, the integral holding valves will be located in the cylinder base end, NOT in the transfer tube. Vertical jack cylinder rods will be fully enclosed by a telescoping inner box to protect the cylinder rods from damage. The stabilizer jack hydraulic cylinders will have the following dimensions: 4.25" bore, 3.00" rod, and 28.88" stroke.

Each stabilizer jack will have a pan that will be a maximum of 14.00" wide so as to allow the extension of the stabilizer between parked cars or other obstacles. This pan will serve as a protective guard and a mounting surface for warning lights. The top, forward, and rear edges will be flanged back 90 degrees for added strength.

STABILIZER PADS

The stabilizer footpad will be 12.00" in diameter. The footpad will be attached to the jack cylinder rod by means of a machined ball at the end of the jack cylinder rod which mates to a socket machined into the footpad. The footpad will have the ability to pivot 20 degrees from horizontal in any direction to allow setup on uneven terrain.

AUXILIARY STABILIZER PADS

An auxiliary ground pad will be supplied for each stabilizer to provide additional load distribution on soft surfaces. The pads will be 31" x 26" and made from a lightweight composite material. The ground pressure will not exceed 75 pounds per square inch when the ground pads are used and the apparatus is fully loaded and the aerial device is carrying its rated capacity in any position. The pads will be stored in a double stacked configuration, two (2) behind each rear tandem axle in a single bracket.

STABILIZER CONTROLS

An electrically controlled hydraulic valve will power stabilizer movement. The valve can also be manually controlled in the event of electrical malfunction. Hydraulic power override controls will be incorporated into the valve. The manual override mechanism wiall be completely sealed within the valve assembly to prevent any possibility of corrosion.

The stabilizer controls will be located to provide the operator with a full view of each stabilizer being positioned. Each stabilizer control panel will include the following:

-In/out stabilizer beam control toggle switch

-Up/down stabilizer jack control toggle switch

-Emergency hydraulic power unit (EPU) control toggle switch

-High idle control toggle switch

-Stabilizer fully extended LED indicator lights

-Stabilizer planted LED indicator lights

As a safety device, an electrically actuated diverter valve will be provided. The hydraulic power will be diverted to the aerial ladder controls automatically the instant all stabilizer jacks are firmly planted on the ground. Once the aerial ladder is raised from the bedded position, the stabilizer hydraulic power is cut off so the stabilizers will not accidentally be moved while the aerial is being operated.

To aid in leveling the unit, two bubble type angle indicators will be located near the stabilizer controls. One indicator will show the angle of the truck from the front to rear and the other will show the side to side angle of the truck. The indicators will be color coded green to show when the truck has been properly leveled allowing the aerial device to be operated at full capacity.

A stabilizer deployment audible warning alarm will be provided at each side of the body, activated by the stabilizer movement.

A "Stabilizers Not Stowed" indicator light will be provided in the cab within view of the driver. It will illuminate automatically whenever the stabilizers are not fully stowed to prevent damage to the vehicle if it is moved. The stabilizer system will also be wired to the "Do Not Move Truck" indicator light. This light will flash whenever the apparatus parking brake is not engaged and the stabilizers are not fully stowed.

STABILIZER PAN AND TRIM MATERIAL

The aerial stabilizer pans will be polished stainless steel and the aerial stabilizer trim will be polished stainless steel.

STABILIZER PINS

The stabilizer jacks will not have holes for the stabilizer pins.

STABILIZER CONTROL BOX DOORS

Vertically hinged stainless steel painted to match single color body doors will be provided over each stabilizer control box. The doors will be hinged along the inboard edge and be provided with a Southco C2 chrome raised trigger lever latch.

HYDRAULIC SYSTEM

All hose assemblies will be assembled and crimped by the hose manufactures certified technician. An assembly cell will be located on the premises where the technician can perform audits of the final aerial assembly for proper fitting torque and hose routing.

All manufacturing employees responsible for the installation of hydraulic components will be properly trained. Training will include: proper handling, installation, torque requirements, cleanliness and quality control procedures for hydraulic components.

Hoses used in the aerial hydraulic system will be of a premium quality hose with a high abrasion resistant cover. All pressure hoses will have a working pressure of 4000 psi. and a burst pressure rating of 16,000 psi.

The hydraulic oil will be a premium Multi-Vis product that will have a leading edge additive package, provide oxidation stability, be extremely shear stable, and have maximum anti-wear properties. All oil delivered to the manufacturing site will have a minimum ISO cleanliness level of 18/15/13.

Each aerial will be evaluated as to the region and climate where it will be used to determine the optimum viscosity and proper oil grade. Oil viscosity will be based on an optimum range of 80 to 1000 SUS during normal aerial use. Before shipment of the unit, an oil sample will be taken and analyzed to confirm the oil is within the allowable ISO grade tolerance.

The aerial hydraulic system will have a minimum oil cleanliness level of ISO 18/15/13 based on the ISO 4406:1999 cleanliness standard. Each customer will receive a certificate of actual cleanliness test results and an explanation of the rating system.

Each aerial will include an oil sample port, identified with a yellow dust cap and a label, for subsequent customer testing.

Ball valves will be provided in the hydraulic suction and return lines to permit component servicing without draining the oil reservoir.

The system hydraulic pressure will be displayed on a 2.5" liquid filled gauge, located on the control console.

The hydraulic system will be additionally protected from excessive pressure by a secondary pressure relief valve set at 3150 psi. In the event the main hydraulic pump compensator malfunctions, the secondary relief will prevent system damage.

HYDRAULIC CYLINDERS

All cylinders used on the aerial device will be produced by a manufacturer that specializes in the manufacture of hydraulic cylinders.

Each cylinder will include integral safety holding cartridges.

Each cylinder will be designed to a minimum safety factor of 4:1 to failure.

All safety holding cartridges will be installed at the cylinder manufacturer, in a controlled clean environment to avoid possible contamination and or failure.

HYDRAULIC PUMP

The hydraulic system will be supplied by a variable displacement, load and pressure compensating piston pump. The pump will meet the demands of all three (3) simultaneous aerial functions. The pump will provide proper flow for a single aerial function with the engine at idle speed. A switch will be provided on the control console to increase the engine speed for multiple function operation.

EMERGENCY PUMP

The aerial will be equipped with an emergency hydraulic pump, electrically driven from the truck batteries. The pump will be capable of running for 30 minutes for limited aerial functions to stow the unit in case of a main pump or truck system failure. A momentary switch will be located at the stabilizer and aerial control locations to activate the emergency pump.

AERIAL CONTROL VALVE

The aerial hydraulic control valve will be designed with special spool flows, limiting the oil flow for the designed function speed. The valve will be manually controlled and be located in the control console with the handles protruding through the operating surface for operation. The activation handles will be spaced a minimum of 3.5" for ease of operation.

OIL RESERVOIR

The oil reservoir will have a minimum capacity of 38 gallons. The oil fill location will be easily accessible and be labeled "Hydraulic Oil Only" and also indicate the grade of oil that is installed in the reservoir. The fill will have a desiccant breather filter with a water capacity of 4 fluid ounces and a 5 micron rating. A drain hose will be included and will terminate with a quarter turn ball valve. Two (2) suction ports will be provided, one (1) for the main hydraulic pump and one (1) for the emergency pump. The main suction will be slightly elevated off the bottom of the reservoir and include a 100 mesh suction strainer. The emergency suction port will be closer to the bottom of the reservoir to provide some reserve oil for emergency operation. A six (6) disc type magnetic drain will also be provided to collect any ferrous contaminants. A float type sending unit in the reservoir will provide an indication of oil level on an electric gauge mounted adjacent to the fill location.

HIGH PRESSURE FILTER

The pressure filter will be rated for 6,000 psi working pressure and generously sized for efficiency and capacity. A 90 psi bypass spring will be included to protect the element and hydraulic system during lower than normal system operating temperatures.

The 5Q filter element will be constructed of a micro glass medium, which has the highest capture efficiency, dirt holding capacity and life expectancy over other media such as cellulose and synthetic. The nominal rating will be 5 micron and have an efficiency rating of 99.3 % for 5 micron sized particles. The element will have a dirt holding capacity of not less than 35 grams.

RETURN FILTER

The return filter will be rated for 800 psi working pressure and generously sized for efficiency and capacity. A 25 psi bypass spring will be included to protect the element and hydraulic system during lower than normal system operating temperatures. The 5Q filter element will be constructed of a micro glass medium, which has the highest capture efficiency, dirt holding capacity and life expectancy over other media such as cellulose and synthetic. The nominal rating will be 5 microns and have an efficiency rating of 99.6% for 5 micron sized particles. The element will have a dirt holding capacity of not less than 40 grams.

HYDRAULIC SWIVEL

The aerial ladder will be equipped with a high pressure hydraulic swivel which will connect the hydraulic lines from the hydraulic pump and reservoir, through the rotation point, to the aerial control bank. The hydraulic swivel will allow for 360-degree continuous rotation of the aerial.

ELECTRIC SWIVEL

The ladder will be equipped with an electric swivel to allow 360-degree rotation of the aerial while maintaining connections in all electrical circuits through the rotation point. A minimum of 28 collector rings that are capable of supplying 30-amp continuous service will be provided. All collector rings will be enclosed and protected against condensation and corrosion.

ELECTRICAL SYSTEM

The aerial electrical system will be designed and manufactured in such a way that the power and signal protection and control compartments will contain circuit protection devices and power control devices. The power and signal protection and control components will be protected against corrosion, excessive heat, excessive vibration, physical damage, and water spray.

The aerial electrical system will be designed and manufactured to allow the following:

- All of the serviceable components will be readily accessible.

- Circuit protection devices will be utilized to protect each circuit.

- All circuit protection devices will be sized to prevent wire and component damage when subjected to extreme current overload.

- General protection circuit breakers will be Type-I automatic reset (continuously resetting) or Type-II (manual resetting) and conform to SAE requirements. When required, automotive type fuses conforming to SAE requirements will be utilized to protect electronic equipment.

- Power control relays and solenoids, when utilized, will have a direct current (dc) rating of 125% of the maximum current for which the circuit is protected.

The aerial electrical system will be designed and manufactured to allow the following:

- Toggle switches will be utilized that are certified for the outside conditions that fire apparatus experience.

- All wiring will be protected through conduit or loom.

- All wiring harnesses will be properly supported to eliminate harness damage through rubbing.

- An inductive proximity switch and illumination light will be incorporated into the boom support.

- The aerial master and aerial PTO can be engaged after the water pump has been engaged without having to bring the RPM back to idle.

- Standard cabling to the tip of the aerial will consist of one (1) 16/20 cable and one (1) 12/8 cable.

LEFT SIDE TORQUE BOX POWER DISTRIBUTION PANEL

A fuse and relay panel, located behind the left side stabilizer, will include the following:

- NEMA 4x rated weatherproof enclosure

- Relays, fuses, and circuit breakers for aerial and stabilizer interlocks and control switches

TURNTABLE LIGHTING

The turntable will be lighted for nighttime operation with a minimum of two (2) work lights activated by the aerial master switch.

TURNTABLE CONSOLE

The following switches and indicator lights will be standard on the turntable console:

- High idle on/off switch

- Tip/Tracking light switch

- Indicator and alarm test switch

- Emergency hydraulic power switch

- STABILIZERS NOT FULLY EXTENDED amber indicator light

- Rung alignment green indicator light

The turntable console will be lighted for nighttime operation with one (1) work light activated by the aerial master switch. A fuse panel will be located in the turntable console.

TURNTABLE OVERRIDE CONTROLS

The aerial manual override controls will be located in the turntable control console.

MASTER OVERRIDE CONTROLS

An emergency power switch will be located at the rear of the apparatus. The switch will activate the emergency power unit and allow control of the aerial or stabilizers based on the direction the switch is toggled.

A work light will be provided to illuminate the master override controls when the battery switch is active and the master override door is open.

BOOM SUPPORT

A Turck inductive proximity switch will be provided on the boom support to detect if the aerial device is fully stowed within the boom support.

STABILIZER INDICATOR

A "Stabilizers Not Stowed" indicator will be provided in the driver's compartment. It will illuminate automatically whenever the stabilizers are not fully stowed, to prevent damage to the apparatus if moved. The stabilizer system will also be wired to the "Do Not Move" indicator light, which will flash whenever the apparatus parking brake is not fully engaged and the stabilizers are not fully stowed.

CRADLE INTERLOCK SYSTEM

A cradle interlock system will be provided to prevent the lifting of the aerial from the nested position until the operator has positioned all the stabilizers in a load supporting configuration. A switch will be installed at the cradle to prevent operation of the stabilizers once the aerial has been elevated from the nested position.

STABILIZER ALARM

An electronic warning device will be provided at each stabilizer to warn personnel that the stabilizers are being deployed. Each alarm will produce a fast pulsing 90 DBA signal and will cancel only when the stabilizer is put into a load bearing configuration.

STABILIZER SCENE LIGHTS

A 4.00" clear floodlight will be provided on each stabilizer to illuminate the surrounding area. The light will be actuated by the aerial master switch.

TIP LIGHT

There will be two (2) Whelen® Model MP**, 5,695 lumens 12 volt DC LED lights installed at the tip of the aerial device.

One (1) will be located on the left side with left side tip light to include spot optics.

One (1) will be located on the right side with right side tip light to include spot optics.

- The light(s) to be installed on adjustable bail bracket(s).
- The painted parts of this light assembly to be white

The lights will be controlled with the tracking lights.

TRACKING LIGHTS

There will be two (2) Whelen® MP**, 5,695 lumens 12 volt DC LED lights installed on the base section of the aerial device below the hand rails per the following:

- One (1) will be located on the left side with left side tracking light to include spot optics.
- One (1) will be located on the right side with right side tracking light to include spot optics.
- The light(s) to be installed on adjustable bail bracket(s).
- The painted parts of this light assembly to be white.

The tracking lights will be controlled by a switch located at the platform/tip and turntable.

STABILIZER WARNING LIGHTS

There will be four (4) Whelen®, Model M6D#, 4.31" high x 6.75"wide x 1.37" deep flashing LED warning lights with chrome trim installed, one (1) on each stabilizer cover panel per the following.

- The left side front stabilizer pan warning light to include red and amber LEDs.
- The left side rear stabilizer pan warning light to include red and amber LEDs.
- The right side rear stabilizer pan warning light to include red and amber LEDs.
- The right side front stabilizer pan warning light to include red and amber LEDs.
- The lenses will be clear.

The lights will be activated by the same switch as the side zone lower warning lights.

These lights will be controlled utilizing the microprocessor based Whelen® CenCom CORE™ system.

STABILIZER BEAM WARNING LIGHTS

Two (2) 4.00" diameter red LED flashing lights will be mounted on each stabilizer, one (1) facing forward and one (1) facing rearward. The lights will be Grote Supernova 40 series LED lights. The lights will be recessed in the horizontal beam of the stabilizer. These warning lights will be activated with the aerial master switch.

STABILIZER SCENE LIGHTS

There will be one (1) Amdor®, Model AY-LB-12HW012, 190 lumen, 12" long, white LED strip light installed under each stabilizer beam to illuminate the surrounding area. A total of four (4) lights will be installed. The lights will be activated by the aerial master switch.

COMMUNICATION SYSTEM

An Atkinson communication system will be furnished between the aerial tip and the turntable operator's position. The communication system will be a two (2)-way system with the communication speaker at the tip requiring no operator attention to transmit or receive. The transmitting and receiving volume controls will be located at the turntable operator's position.

RAISED AERIAL PEDESTAL

The aerial pedestal will be raised to accommodate the height of the cab.

LIFTING EYE ASSEMBLY - ROPE RESCUE ATTACHMENT

A lifting eye assembly will be provided that is designed to evenly distribute load at the tip of the aerial. The egress will include attachment points for the lifting eye assembly. The lift eye assembly is retained by two (2) locking pins, one (1) at each end outboard side of the egress. Leveling is maintained by the lifting eye assembly rotating within the egress mounting.

AERIAL TURNTABLE MANSAVER™ BARS

Yellow ManSaver™ bars will be installed at the aerial turntable.

WATER SYSTEM

A waterway system will be provided consisting of the following components and features:

A 5.00" pipe connected to the water supply on one end and to a water swivel at the rotation point of the turntable. The water swivel will allow the ladder to rotate 360 degrees continuously while flowing water.

A 4.00" waterway swivel is to be routed through the rotation point swivel up to the heel pin swivel. The heel pin swivel will allow the water to flow to the ladder pipe while elevating the aerial ladder from -5 degrees to 75 degrees. The heel pivot pin is not integral with the waterway swivel at any point. The design of the waterway will allow complete servicing of the waterway swivel without disturbing the heel pivot pin.

The integral telescopic water system will consist of a 4.50" diameter tube in the base section, a 4.00" diameter tube in the inner mid-section, 3.50" diameter tube in the outer mid-section and a 3.00" diameter tube in the fly section. The telescopic water pipes will be anodized aluminum.

The rotational torque will have adequate power to rotate the ladder into a full 1000 gallon per minute water stream directed at 90 degrees to the side while maintaining the 500 pound tip load.

The aerial will be capable of discharging up to 1000 gallons per minute at 100 pounds per square inch parallel to the ladder and 90 degrees to each side of center while maintaining the fully rated tip load.

An adjustable intake relief valve will be furnished to protect the aerial waterway from a pressure surge.

A 1.50" drain valve will be located at the lowest point of the waterway system.

WATERWAY SEALS

The waterway seals will be of type-B PolyPak design, composed of nitroxile seal and a nitrile wiper, which together offer maximum stability and extrusion resistance on the waterway. The seal will be capable of withstanding pressures up to 2000 psi, temperatures in excess of 250 degrees Fahrenheit and have resistance to all foam generating solutions. The seals will be internally lubricated.

The waterway seals will have automatic centering guides constructed of synthetic thermalpolymer. The guides will provide positive centering of the extendible sections within each other and the base section to insure longer service life and smoother operation.

AERIAL MONITOR

An Akron Model 3480 monitor with stow and deploy will be provided at the tip with a Akron 2000 gpm Model 5178. This monitor will allow for an additional 30 degrees of travel above horizontal at the aerial tip.

The monitor's functions will be controlled electrically from two (2) separate locations. One (1) control will be located at the control console and the other at the ladder tip.

There will be a courtesy light at the tip of the aerial to illuminate the controls.

If the aerial has a quick-lock waterway, a limit switch will be provided to disable the extended vertical travel when the monitor is locked to the lower ladder section.

FLOW METER (AERIAL WATERWAY)

A Class I Flow-Minder, with totalizer, will be provided for the aerial waterway. The flowmeter will be located at the turntable control station.

REAR INLET

A 5.00" NST inlet to the aerial waterway will be provided at the rear of the apparatus. It will be furnished with a 5.00" chrome plated adapter and a 5.00" chrome plated, long handle cap.

WATERWAY LOCKING SYSTEM

The aerial ladder waterway monitor will be capable of being positioned at either the fly section or at the next lower section of the ladder.

The monitor location will be changeable by the use of a single handle, located at the side of the ladder.

The handle, attached to a cam bracket, will simply be moved forward to lock the monitor at the fly section and back to lock it to the previous section.

There will be no pins to remove and reinstall.

The monitor will be operational at all times, regardless of its position, without connecting or disconnecting electrical lines.

MONITOR AUTO STOW

The monitor will be set to auto stow facing the left side to the allow the operator to verify the monitor is stowed prior to nesting the device.

ADAPTER, STORZ INLET

There will be one (1) 5.00" FNST x 5.00" Storz 30 degree elbow(s) with blind cap provided aerial inlet.

MANUALS

Two (2) operator maintenance manuals and two (2) wiring diagrams pertaining to the aerial device will be provided with the apparatus at time of pick-up.

INITIAL INSTRUCTION

On initial delivery of the fire apparatus, the contractor will supply a qualified representative to demonstrate the apparatus and provide initial instruction to the fire department regarding the operation, care, and maintenance of the apparatus for a period of three (3) consecutive days.

LOOSE EQUIPMENT

The following equipment will be furnished with the completed unit:

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.

One (1) set of reflective emergency triangles will be provided.

NFPA LOOSE EQUIPMENT

NFPA Required Loose Equipment Provided by Fire Department

The following loose equipment as outlined in NFPA 1900, 2024 edition, table 8.1 and CAN/ULC S515:2024 edition, section 5.2 will be provided by the fire department:

- One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 107, *American National Standard for High-Visibility Safety Apparel and Accessories*, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front.
- Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band.
- Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.
- Four (4) ladder belts meeting the requirements of NFPA 2500.

NFPA Loose Equipment That Shall be Considered:

The following loose equipment as outlined in NFPA 1900, 2024 edition, appendix table A.8.4 (a) and CAN/ULC S515:2024 edition, section 5.2 should be considered:

- 800 ft (240 m) of 2.50" (65 mm) or larger fire hose
- 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose
- One (1) handline nozzle, 200 gpm min
- Two (2) handline nozzles, 95 gpm min
- One (1) playpipe with shutoff and 1", 1.125", and 1.25" tips
- Four (4) SCBA apparatus
- Four (4) SCBA spare cylinders
- One (1) first aid kit.
- Four (4) salvage covers, each a minimum size of 12 ft × 18 ft (3.6 m × 5.5 m).
- Four (4) combination spanner wrenches.
- Two (2) hydrant wrenches.
- One (1) double female 2.50" adapter with national hose (NH) thread.
- One (1) double male 2.50" adapter with national hose (NH) thread.
- One (1) rubber mallet, suitable for use on suction hose connections.
- One (1) 150 ft (45 m) light-use life safety rope meeting the requirements of NFPA 2500.
- One (1) 150 ft (45 m) general-use life safety rope meeting the requirements of NFPA 2500.
- One (1) automatic external defibrillator (AED).

SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT

Hose is not on the apparatus as manufactured. The fire department will provide suction or supply hose.

DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

PAINT PROCESS

The exterior custom cab and body painting procedure will consist of a seven (7) step finishing process as follows:

7. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body will be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces will be removed and sanded to a smooth finish. Exterior seams will be sealed before painting. Exterior

surfaces that will not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.

8. Chemical Cleaning and Pretreatment - All surfaces will be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces will be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces will be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion.
9. Surfacer Primer - The Surfacer Primer will be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.
10. Finish Sanding - The Surfacer Primer will be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.
11. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.
12. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat will be applied. The Basecoat will be applied to a thickness that will achieve the proper color match. The Basecoat will be used in conjunction with a urethane clear coat to provide protection from the environment.
13. Clear Coat - Two (2) coats of Clear Coat will be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors will be Clear Coated to match the body. Paint warranty for the roll-up doors will be provided by the roll-up door manufacturer.

After the cab and body are painted, the color will be verified to make sure that it matches the color standard. Electronic color measuring equipment will be used to compare the color sample to the color standard entered into the computer. Color specifications will be used to determine the color match. A Delta E reading will be used to determine a good color match within each family color.

All removable items such as brackets, compartment doors, door hinges, and trim will be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.

The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. The manufacture's written paint standards will be available upon request.

Environmental Impact

Contractor will meet or exceed all current state regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:

- Topcoats and primers will be chrome and lead free.
- Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations will have a 99.99 percent efficiency factor.
- Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter is used, it will have an efficiency rating of 98 percent. Water wash systems will be 99.97 percent efficient.
- Water from water wash booths will be reused. Solids will be removed on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner.
- Empty metal paint containers will be recycled to recover the metal.
- Solvents used in clean-up operations will be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus will not be manufactured with or contain products that have ozone depleting substances. Contractor will, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.

CAB PAINT

The cab will be painted Red #213.

BODY PAINT

The body will be painted to match the single cab paint color.

PAINT/SEAL CHASSIS FRAME ASSEMBLY

The following components will be treated with epoxy E-coat protection prior to finish paint:

- Two (2) C-channel frame rails
- Two (2) frame liners

The E-coat process will meet the technical properties shown.

Before the frame rails are finish painted, all areas will be sealed with a 3M 2084 metal sealant after the components are torqued to the frame rails:

- The joint between the main frame and the liner

FILM TECHNICAL PROPERTIES

PROPERTY	TEST METHOD	PERFORMANCE
Color	–	Black
Film Thickness	–	0.5 - 1.5 Mils
Gloss - 60 Degree	ASTM D523	65 - 85
Pencil Hardness	ASTM D3363	2H Minimum
Direct Impact	ASTM D2794	100 in. - lbs. Minimum
Reverse Impact	ASTM D2794	60 in. - lbs. Minimum
Crosshatch Adhesion	ASTM D3359	4B - 5B
Humidity	ASTM D1735	1000 Hours Minimum
Water Immersion	ASTM D870	250 Hours Minimum
Gravelometer	GM9508P	6 Minimum
Throwpower	GM9535P	12 - 15 in.

Cold rolled steel lab panels, Zinc Phosphate pretreatment, 0.6 mils average film thickness, cured 20 minutes @ 350°F.

PROPERTY	SUBSTRATE PRETREATMENT	SALT SPRAY* 1000 HOURS
Corrosion Resistance	CRS / Zinc Phos / Non-Chrome	1 - 2 mm

*Salt Spray - ASTM B117, cold rolled steel lab panels cured 20 minutes @ 350°F. (Average Total Scribe Creep)

- The joint between all crossmembers and the frame
- The joint between all spring hangers and the frame.

The chassis frame assembly will be finished with primer and gloss black paint before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that will be finish painted (unless otherwise stated in a secondary option) are:

- Frame rails
- Frame liners
- Cross members
- Axles
- Suspensions
- Steering gear
- Battery boxes
- Bumper extension weldment
- Frame extensions
- Body mounting angles
- Rear Body support substructure (front and rear)
- Pump house substructure
- Steel fuel tank
- Castings
- Individual piece parts used in chassis and body assembly

After the chassis frame assembly is finish painted, the following non-torqued joints will be sealed with a SG-510A rust-proofing compound:

- All bolted on chassis components that could be vulnerable to rust, i.e. body mounting angles, air tanks, etc.

To summarize, all metal to metal contact components that are prone to rust, will be protected.

AXLE HUB PAINT

All axle hubs will be painted to match primary job color.

HOT DIP GALVANIZED STABILIZERS

The vertical and horizontal stabilizer jacks, mating bracketry, and related components will be treated through a hot dip galvanizing process. There will be a total of four (4) stabilizers treated. These components will be immersed in molten zinc to provide a coating that shall help protect against the effects of corrosion.

COMPARTMENT INTERIOR PAINT

The interior of all compartments will be painted with a gray spatter finish for ease of cleaning and to make it easier to touch up scratches and nicks.

AERIAL DEVICE PAINT COLOR

The aerial device paint procedure will consist of a seven (7) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the aerial device structural components above the rotation point will be thoroughly cleaned and mechanically shot-blasted to remove metal impurities and prepare the aerial for painting.

2. Zinc Rich Primer - Zinc rich primer will be applied to the torque box and stabilizers.

3. Primer/Surfacer Coats - A two (2) component epoxy primer/surfacer will be applied to the mechanically shot-blasted metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface. All seams will be caulked with a two (2) component epoxy caulk before painting.

4. Hand Sanding - The primer/surfacer coat of the outer surfaces of the hand rails and base rails will be lightly sanded to a smooth finish.

5. Primer Coat - A two (2) component epoxy primer coat will be applied over the sanded primer.

6. Topcoat Paint - Urethane base coat will be applied to opacity for correct color matching.

7. Clear Coat - Two (2) coats of an automotive grade two (2) component urethane will be applied.

Surfaces that will not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate.

All buy out components, such as monitor, nozzle, gauges, etc. will be supplied as received from the vendor.

Removable items such as brackets will be removed and painted separately to ensure paint coverage behind all mounted items.

The aerial device components will be painted as follows using the aforementioned seven (7) step finishing process:

- Aerial device ladder sections and extension cylinders: bright silver metallic 224
- Aerial turntable: silver/gray metallic 224
- Aerial control console: bright silver metallic 224
- Aerial lift cylinders: bright silver metallic 224
- Aerial rotation motor (where applicable): black
- Aerial torque box, support structure and components below the rotation point:gloss black primer

- Aerial egress (will be contrasting to the aerial ladder section color):#50 red
- Aerial boom support: gloss black primer

REFLECTIVE STRIPES

Three (3) reflective stripes will be provided across the front of the vehicle and along the sides of the body. The reflective band will consist of a 1.00" black stripe at the top with a 1.00" gap then a 6.00" gold stripe with a 1.00" gap and a 1.00" black stripe on the bottom.

The reflective band provided on the cab face will be below the headlights on the fiberglass.

REAR CHEVRON STRIPING

There will be alternating chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces will include the rear wall and aluminum doors. Rear compartment doors, stainless steel access doors, and the rear bumper will not be covered.

The colors will be red and fluorescent yellow green diamond grade.

Each stripe will be 6.00" in width.

This will meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface will be covered with chevron striping.

REFLECTIVE STRIPE ON STABILIZERS

There will be a 4.00" wide fluorescent yellow diamond grade reflective stripe provided on the forward and rear facing side of all aerial stabilizers.

CHEVRON STRIPING ON THE FRONT BUMPER

There will be alternating chevron striping located on the front bumper.

The colors will be Fluorescent Yellow-Green 983-23 and Red 983-72 diamond grade.

The size of the striping will be 6.00".

INVERTED "V" CHEVRON STRIPING ON CAB AND CREW CAB DOORS

There will be alternating chevron striping located on the inside of each cab and crew cab door.

The striping will consist of the following colors:

- The first color will be red diamond grade.
- The second color will be fluorescent yellow green diamond grade.

The size of the striping will be 4.00".

BOOM SIGN STRIPING

There will be reflective stripes along all edges of the aerial boom sign. The stripes will have an outline and a scroll at each corner.

LETTERING

There will be reflective lettering, 3.00" high, with no outline or shade provided. There will be 50 letters provided.

WEB SITE ADDRESS LETTERING, REFLECTIVE

There will be a one (1) web site addresses, in 1.00" to 2.00" reflective lettering, installed Located on the R1..

LETTERING

There will be reflective lettering, 1.00" high, with outline and shade provided. There will be six (6) letters provided.

LETTERING

Forty-one (41) to sixty (60) reflective lettering, 2.00" high, with no outline or shade will be provided.

LETTERING

There will be reflective lettering, 5.00" high, with outline and shade provided. There will be 22 letters provided.

LETTERING

One (1) to twenty (20) reflective lettering, 9.00" high, with outline and shade will be provided.

LETTERING

Forty-one (41) to sixty (60) reflective lettering, 4.00" high, with no outline or shade will be provided.

EMBLEM

A pair of emblems showing a "Star of Life" will be installed on the vehicle. The emblem will be made with reflective material. The size will be approximately 10.00" high x 10.00" wide.

MALTESE CROSS INSTALLATION

There will be one (1) maltese cross, comprised of reflective material, provided and installed cab doors.

MALTESE CROSS INSTALLATION

There will be one (1) each of maltese crosses, comprised of reflective material, provided and installed R1 Door.

OVAL STRAPPING HERON RIB

two (2) roll (s) shall be provided and shipped loose with the truck for the department to install. The color will be red.

MANUAL, FIRE APPARATUS PARTS

Two (2) custom parts manuals for the complete fire apparatus will be provided in hard copy with the completed unit.

One (1) compact disc (CD) will also be provided that will include all of the information from the above manual.

The manual will contain the following:

- Job number

- Part numbers with full descriptions

- Table of contents

- Parts section sorted in functional groups reflecting a major system, component, or assembly

- Parts section sorted in Alphabetical order

- Instructions on how to locate parts

The manual will be specifically written for the chassis and body model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

SERVICE PARTS INTERNET SITE

The service parts information included in this manual is also available on the Pierce website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

MANUALS, CHASSIS SERVICE

Two (2) chassis service manuals containing parts and service information on major components will be provided with the completed unit.

One (1) compact disk (CD) will also be provided that will include all of the information from the above manual.

The manuals will contain the following sections:

- Job number

- Table of contents

- Troubleshooting

- Front Axle/Suspension

- Brakes

- Engine

- Tires

- Wheels

- Cab

- Electrical, DC

- Air Systems

- Plumbing

- Appendix

The manual will be specifically written for the chassis model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

MANUALS, CHASSIS OPERATION

Two (2) chassis operation manuals will be provided.

One (1) compact disk (CD) will also be provided that will include all of the information from the above manual.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

A Pierce basic apparatus limited warranty certificate, WA0008, is included with this proposal.

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The Pierce custom chassis limited warranty certificate, WA0284, is included with this proposal.

ENGINE WARRANTY

A Cummins **five (5) year** limited engine warranty will be provided. A limited warranty certificate, WA0181, is included with this proposal.

STEERING GEAR WARRANTY

A Sheppard **three (3) year** limited steering gear warranty will be provided. A copy of the warranty certificate will be submitted with this proposal.

FIFTY (50) YEAR STRUCTURAL INTEGRITY

The Pierce custom chassis frame and crossmembers limited warranty certificate, WA0038, is included with this proposal.

FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

The Pierce TAK-4 suspension limited warranty certificate, WA0050, is included with this proposal.

TDM REAR AXLE FIVE (5) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor™ Axle 5 year limited warranty will be provided.

ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor Wabco™ ABS brake system limited warranty certificate, WA0232, is included with this proposal.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce custom cab limited warranty certificate, WA0012, is included with this proposal.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce cab limited pro-rated paint warranty certificate, WA0055, is included with this proposal.

FIVE (5) YEAR MATERIAL AND WORKMANSHIP

The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this proposal.

CAMERA SYSTEM WARRANTY

A Pierce fifty four (54) month warranty will be provided for the camera system**.**

COMPARTMENT LIGHT WARRANTY

The Pierce 12 volt DC LED strip lights limited warranty certificate, WA0203, is included with this proposal.

TRANSMISSION WARRANTY

The transmission will have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission.

Note: The transmission cooler is not covered under any extended warranty you may be getting on your Allison Transmission. Please review your Allison Transmission warranty for coverage limitations.

TRANSMISSION COOLER WARRANTY

The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed $10,000 per occurrence. A copy of the warranty certificate will be included with this proposal.

WATER TANK WARRANTY

A UPF poly water tank limited warranty certificate, WA0195, is included with this proposal.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce apparatus body limited warranty certificate, WA0009, is included with this proposal.

ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY

An AMDOR roll-up door limited warranty will be provided. The roll-up door will be warranted against manufacturing defects for a period of **ten (10) years**. A **five (5) year** limited warranty will be provided on painted roll up doors.

The limited warranty certificate, WA0185, is included with this proposal.

SEVEN (7) YEAR PARTS, ONE (1) YEAR LABOR

The pump and its components will be provided with a seven (7) year parts and one (1) year labor limited warranty. The manufacturer's warranty will provide that the pump and its components will be free from failures caused by defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate will be submitted with the bid package.

TEN (10) YEAR PUMP PLUMBING WARRANTY

The Pierce apparatus plumbing limited warranty certificate, WA0035, is included with this proposal.

FOAM SYSTEM WARRANTY

The Husky 3 foam system limited warranty certificate, WA0231, is included with this proposal.

TWENTY (20) YEAR AERIAL DEVICE STRUCTURAL INTEGRITY WARRANTY

The Pierce device limited warranty certificate, WA0052, is included with this proposal.

AERIAL SWIVEL WARRANTY

An Amity five (5) year limited swivel warranty will be provided. A copy of the warranty certificate will be included with this proposal.

HYDRAULIC SYSTEM COMPONENTS WARRANTY

Aerial hydraulic system components will be provided with a five (5) year material and workmanship limited warranty.

HYDRAULIC SEAL WARRANTY

Aerial hydraulic seals will be provided with a three (3) year material and workmanship limited warranty.

A copy of the warranty certificates is included with this proposal.

AERIAL WATERWAY WARRANTY

An Amity ten (10) year limited waterway warranty will be provided. A copy of the warranty certificate is included with this proposal.

FOUR (4) YEAR PRO-RATED PAINT AND CORROSION

A Pierce aerial device limited pro-rated paint warranty certificate, WA0047, is included with this proposal.

TWO (2) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY

A Harrison Hydra-Gen generator two (2) year limited warranty will be provided.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce body limited pro-rated paint warranty certificate, WA0057, is included with this proposal.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

The Pierce graphics fading and deterioration limited warranty limited warranty certificate, WA0168, is included with this proposal.

VEHICLE STABILITY CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the apparatus complies with NFPA 1900, current edition, section 7.14, Vehicle Stability. The certification is included with this proposal.

ENGINE INSTALLATION CERTIFICATION

The fire apparatus manufacturer will provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification will be provided at the time of delivery.

POWER STEERING CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification is included with this proposal.

CAB INTEGRITY CERTIFICATION

The fire apparatus manufacturer will provide a cab crash test certification with this proposal. The certification will state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events will be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer will provide a state licensed professional engineer to witness and certify all testing events. Testing will meet or exceed the requirements below:

- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.
- European Occupant Protection Standard ECE Regulation No.29.
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.

Side Impact

The cab will be subjected to dynamic preload where a 14,320-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab will see in a rollover incident.

Roof Crush

The same cab will be subjected to a roof crush force of 22,050 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.

Additional Roof Crush

The same cab will be subjected to a roof crush force of 100,000 lb. (Four and a half times the load criteria of ECE 29)

Frontal Impact

The same cab will withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.

Additional Frontal Impact

The same cab will withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)

The same cab will withstand all tests without any measurable intrusion into the survival space of the occupant area.

There will be no exception to any portion of the cab integrity certification. Nonconformance will lead to immediate rejection of bid.

CAB DOOR DURABILITY CERTIFICATION

Robust cab doors help protect occupants. Cab doors will survive a 200,000-cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder will certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.

WINDSHIELD WIPER DURABILITY CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers will survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles.* The bidder will certify that the wiper system design has been tested and that the wiper system has met these criteria.

ELECTRIC WINDOW DURABILITY CERTIFICATION

Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design will complete 30,000 complete up-down cycles and still function normally when finished. The bidder will certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.

SEAT BELT ANCHOR STRENGTH

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design will withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder will certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design will be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder will certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

PERFORMANCE CERTIFICATIONS

Cab Air Conditioning

Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system will cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder will certify that a substantially similar cab has been tested and has met these criteria.

Cab Defroster

Visibility during inclement weather is essential to safe apparatus performance. The defroster system will clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder will certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

Cab Auxiliary Heater

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater will warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder will certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT

The bidder will provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus will provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which will include the following:
    - The nameplate rating of the alternator.
    - The alternator rating under the conditions specified per:
        - Current edition of applicable NFPA standards.
    - The minimum continuous load of each component that is specified per:
        - Current edition of applicable NFPA standards.
    - Additional loads that, when added to the minimum continuous load, determine the total connected load.
    - Each individual intermittent load.

All of the above listed items will be provided by the bidder per the current edition of applicable NFPA standards.