



Option List

5/4/2022

Customer: Ann Arbor Fire Department
Representative Hamilton, Bruce
Organization: Halt Fire, Inc
Requirements Manager:
Description: Ann Arbor- Short body pumper-updated 2-21-22
Body: Pumper, Medium, Aluminum, 2nd Gen
Chassis: Enforcer Chassis

Bid Number: 1221
Job Number:
Number of Units: 1
Bid Date: 12/29/2021
Stock Number:
Price Level: 42 (Current: 42)
Lane:

Line	Option	Type	Option Description	Qty
1	0766611		Boiler Plates, Pumper Fire Department/Customer - Ann Arbor Fire Department Operating/In conjunction W-Service Center - Operating Miles - 150 Miles Number of Fire Dept/Municipalities - 10 Bidder/Sales Organization - Halt Fire, Inc. Delivery - Delivery representative Dealership/Sales Organization, Service - Halt Fire, Inc.	1
2	0661794		Single Source Compliance	1
3	0584456		Manufacture Location, Appleton, Wisconsin	1
4	0584452		RFP Location: Appleton, Wisconsin	1
5	0588609		Vehicle Destination, US	1
6	0610784		Comply NFPA 1901 Changes Effective Jan 1, 2016, With Exceptions	1
7	0533347		Pumper/Pumper with Aerial Device Fire Apparatus	1
8	0588611		Vehicle Certification, Pumper	1
9	0661778		Agency, Apparatus Certification, Pumper/Tanker, U.L.	1
10	0000000	STF	Dealership Longevity - M	1
10	0000000	STF	DEALER LICENSE REQUIREMENT-M	1
10	0000000	STF	Construction Review Reports - M	1
10	0000000	STF	New vehicle orientation (Halt Fire) - 2020 M Qty, - 03 Fill in Blank - Ann Arbor Fire Department	3
11	0000114		Inspection Trip(s) Qty, - 02 Fill in Blank - three (3)	2
12	0620362		Consortium, HGAC	1
13	0537375		Unit of Measure, US Gallons	1
14	0529326		Bid Bond, 10%, Pierce Built Chassis	1
15	0540326		Performance Bond, Not Requested	1
16	0000007		Approval Drawing	1
17	0765582		Drawing, Bumper Extension, Top View, Reference Only	1
18	0002928		Electrical Diagrams	1
19	0649754		Enforcer Chassis	1
20	0000110		Wheelbase Wheelbase - 174.50"	1
21	0000070		GVW Rating GVW rating - 44,000 lbs	1
22	0649713		Frame Rails, 10.25" x 3.50" x .375", Saber FR/Enf	1
23	0020018		Frame Liner Not Req'd	1
24	0637911		Axle, Front, Dana, D-2000F, 20,000 lb Saber FR/Enforcer	1
25	0637913		Suspension, Front, Standens, Taper Leaf, 20,000 lb, Saber FR/Enforcer	1
26	0000321		Shock Absorbers on Front Axle, Monroe Magnum 65, Saber/Enforcer	1
27	0000322		Oil Seals, Front Axle	1
28	0582936		Tires, Front, Goodyear, G289 WHA, 315/80R22.50, 20 ply	1
29	0894433		Wheels, Front, 22.50" x 9.00", Steel, Hub Pilot, 315/80R Tire	1
30	0728303		Axle, Rear, Dana S23-172, 24,000 lb, Saber/Enforcer	1
31	0544253		Top Speed of Vehicle, 68 MPH	1
32	0565379		Suspen, Rear, Single Slipper Spring, 24,000 lb, Saber/Enforcer	1
33	0000485		Oil Seals, Rear Axle	1
34	0587216		Tires, Rear, Goodyear, G622 RSD, 12R22.50, 16 ply, Single	1
35	0654806		Wheels, Rear, Accuride, 22.50" x 8.25", Steel, Hub Pilot, Single	1

Line	Option	Type	Option Description	Qty
36	0568081		Tire Balancing, Counteract Beads	1
37	0620570		Tire Pressure Monitoring, RealWheels, AirSecure, Valve Cap, Single Axle Qty, Tire Pressure Ind - 6	1
38	0003245		Axle Hub Covers w/center hole, S/S, Front Axle	1
39	0057936		Covers, Lug Nut, Chrome	1
40	0002045		Mud Flap, Front and Rear, Pierce Logo	1
41	0602478		Chocks, Wheel, Pumper, NFPA, Provided by Fire Department, NFPA 2016	1
42	0544690		Mounting Brackets, Chocks, Provided by Fire Department	1
43	0010670		ABS Wabco Brake System, Single rear axle	1
44	0690932		Brakes, Bendix, ADB22X, 17" Disc, Front	1
45	0581433		Brakes, Bendix, Cam, Rear, 16.50 x 7.00"	1
46	0020784		Air Compressor, Brake, Cummins/Wabco 18.7 CFM	1
47	0644232		Brake Reservoirs, 4,272 Cubic Inch Minimum Capacity, Saber FR/Enforcer	1
48	0568012		Air Dryer, Wabco System Saver 1200, Heater, 2010	1
49	0000790		Brake Lines, Nylon	1
50	0000854		Air Inlet, w/Disconnect Coupling Location, Air Coupling(s) - ddd) DS Above Front Wheel Qty, Air Coupling (s) - 1	1
51	0736437		Engine, Cummins L9, 450 hp, 1250 lb-ft, W/OBD, EPA 2021, Saber FR/Enforcer	1
52	0001244		High Idle w/Electronic Engine, Custom	1
53	0729212		Idle Reduction, Battery Management System, BMS, Lithium, IRT	1
54	0729210		Idle Reduction, Lithium, Engine Auto Shut Down 5 min. and Auto Start	1
55	0732613		Not Required, Location IRT Power Converter	1
56	0732621	SP	Approved, Idle Reduction System	1
57	0687994		Engine Brake, Jacobs Compression Brake, Cummins Engine Switch, Engine Brake - e) ISC/ISM/ISL9/ISX Hi Med Lo	1
58	0644227		Clutch, Fan, Air Actuated, Saber FR/Enforcer	1
59	0644573		Air Intake, Water & Ember Screen, Saber FR/Enforcer	1
60	0794761		Exhaust System, 4", 2017 L9 Engine, Horizontal, Right Side	1
61	0788765		Radiator, Saber FR/Enforcer	1
62	0001090		Cooling Hoses, Rubber	1
63	0001125		Fuel Tank, 65 Gallon, Left Side Fill	1
64	0001129		Lines, Fuel	1
65	0595087		DEF Tank, 4.5 Gallon, DS Fill, Forward of Rear Axle Door, Material & Finish, DEF Tank - Polished Stainless	1
66	0723716		Fuel Priming Pump, Electronic, Automatic, Cummins, No Swt Req'd	1
67	0552712		Not Required, Shutoff Valve, Fuel Line	1
68	0699437		Cooler, Chassis Fuel, Not Req'd.	1
69	0690880		No Selection Required From This Category	1
70	0642572		Trans, Allison 5th Gen, 3000 EVS P, w/Prognostics, Imp/Vel/DCF/SFR/Enf	1
71	0625329		Transmission, Shifter, 5-Spd, Push Button, 3000 EVS	1
72	0684459		Transmission Oil Cooler, Modine, External	1
73	0001370		Driveline, Spicer 1710	1
74	0637248		Steering, Dual Gear, TRW TAS-65, w/tilt, Pump w/ Cooler, Saber FR/Enforcer	1
75	0509229		Steering Wheel, 2 Spoke	1
76	0559647		Pierce Logo on Horn Button	1
77	0606441		Bumper, 19" Extended, Steel Painted, Saber FR/Enforcer	1
78	0640196		Tray, Hose, Center, 19" Bumper, Inside Air Horns Grating, Bumper extension - Grating, Rubber Capacity, Bumper Tray - 19) 100' of 1.75"	1
79	0633479		Hose Restraint, Bumper Tray, Velcro Straps, Pair Qty, Pair - 01	1
80	0614646		No Lift & Tow Package, Imp/Vel, AXT, SFR/Enf	1
81	0002270		Tow Hooks, Chrome	1
82	0558109		Notch, Front For Recessing Of Q2B, Painted Bumper Location - driver side	1
83	0695304		Notch, Front For Recessing Of Inlet, Steel Fabricated Bumper	1
84	0516238		Partition, Adjustable, Aluminum in Hose Tray, Qty, Location Location - to be determined by the fire department Qty, - 01	1
85	0649716		Cab, Enforcer, 6010	1

Line	Option	Type	Option Description	Qty
86	0647919		Engine Tunnel, ISL, Saber FR/Enforcer	1
87	0633594		Rear Wall, Interior, Adjustable Seating	1
88	0632103		Rear Wall, Exterior, Cab, Saber FR/Enforcer Material, Exterior Rear Wall - Aluminum Treadplate	1
89	0639726		Cab Lift, Elec/Hyd, Manual Override, Unlocked Ind Light, Saber FR/Enforcer	1
90	0695930		Grille, Bright Finished, Front of Cab, Enforcer	1
91	0002224		Scuffplates, S/S At Cab Door Jambs, 4-Door Cab Material Trim/Scuffplate - c) S/S, Polished	1
92	0647932		Not Required, Trim, S/S Band, Across Cab Face, AXT/Dash CF/Saber/Enforcer	1
93	0087357		Molding, Chrome on Side of Cab	1
94	0521669		Mirrors, Retrac, West Coast Style, Htd/Rmt, w/Htd/Rmt Convex	1
95	0072189		Mirror, 8.00" Convex, Cab Front, Front Cross View	1
96	0648170		Door, Half-Height, Saber FR/Enforcer 4-Door Cab, Raised Roof Key Model, Cab Doors - 751 Cab, Exterior Door Handle, Finish - 4-Door, Chrome/Black	1
97	0655543		Door Panel, Brushed Stainless Steel, Saber/Enforcer 4-Door Cab	1
98	0630636		Controls, Electric Roll-Up Windows, 4dr, 4 Driver Controls, Saber FR/Enforcer	1
99	0638310		Steps, 4-Door Cab, Saber FR/Enforcer Step Well Material - Aluminum Treadplate	1
100	0770194		Handrail, Exterior, Knurled, Alum, 4-Door Cab	1
101	0892638		Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 6lts Color, Trim - Chrome Housing	1
102	0040475		Crowns, Front Fender, Rubber	1
103	0637984		Window, Side of C/C, Fixed, Saber FR/Enforcer	1
104	0012090		Not Required, Windows, Front/Side of raised roof	1
105	0779033		Not Required, Windows Rear of Crew Cab, Saber FR/Enforcer	1
106	0894089		Dash, Heavy Duty Metal, Enforcer Material Finish, Metal Dash - Gray	1
107	0664351		Pac Trac, Installed in Cab/Crew Cab Location - On the back wall of the cab interior, two (2) each side, running the full height from the floor up. each section to be approx 62" long Qty, - 04	4
108	0767910	SP	Bracket, Air Bottle, Zico, UH-5-30-3-SFPHS, Mounted in Cabinet Location - in the forward facing EMS cabinet, on the drivers side of the partition Qty, - 01	1
109	0607217		Mounting Provisions, 3/16" Alum, Full Engine Tunnel, Saber FR/Enforcer Mounting Provision Spacing - 1.00"	1
110	0750824		Cab Interior, Vinyl Headliner, Saber FR/Enforcer, CARE Material Finish, Cab Interior - Brushed Color, Cab Interior Vinyl/Fabric - Endure Vinyl - Silver/Gray Engine Tunnel Cover - Painted Cab Interior Rear Wall Material - Painted Aluminum	1
111	0753903		Cab Interior, Paint Color, Saber FR/Enforcer Color, Cab Interior Paint - i) fire smoke gray	1
112	0052100		Floor, Rubber Padded, Cab & Crew Cab, Saber/Enforcer	1
113	0722696		HVAC, Enforcer, CARE HVAC System, Filter Access - Tool Free Panel Auxiliary Cab Heater - Both HVAC System, Control Loc. - Panel Position #12 Plenum Cover Material - Formed Plastic	1
114	0639675		Sun Visor, Smoked Lexan, AXT, Imp/Vel, Saber FR/Enforcer Sun Visor Retention - No Retention	1
115	0634328		Grab Handles, Driver and Officer Door Posts, Saber FR/Enforcer	1
116	0583938		Lights, Engine Compt, Custom, Auto Sw, Wln 3SC0CDCR, 3" LED, Trim Qty, - 01	1
117	0631830		Fluid Check Access, Saber FR/Enforcer, Arrow XT Latch, Door, Storage - Lift and Turn Latch, Flush	1
118	0583039		Not Required, Side Roll and Frontal Impact Protection	1
119	0622619		Seating Capacity, 4 Seats	1
120	0636957		Seat, Driver, Pierce PSV, Air Ride, High Back, Saber FR/Enforcer	1
121	0636946		Seat, Officer, Pierce PSV, Fixed, SCBA, Saber FR/Enforcer	1

Line	Option	Type	Option Description	Qty
122	0620420		Radio Compartment, Below Non-Air Ride Seat, Saber FR/Enforcer Latch, Door, Storage - Lift and Turn Latch, Flush	1
123	0631752		Seat, Rear Facing C/C, DS Outboard, Pierce PSV, SCBA, 17" Btm, Saber FR/Enf	1
124	0102783		Not Required, Seat, Rr Facing C/C, Center	1
125	0631750		Seat, Rear Facing C/C, PS Outboard, Pierce PSV, SCBA, 17" Bottom, Saber FR/Enf	1
126	0108189		Not Required, Seat, Forward Facing C/C, DS Outboard	1
127	0894030	SP	Cabinet, Forward Facing, Center, 38.50 W x 60 H x 20 D, 2" Web, Strap, SFR/Enf Type of fastener - seat belt buckle Restraint Location - Bottom (towards the ground) Material Finish, Shelf - Brushed Shelf/Tray, Cabinet - (2) Shelves, Adjustable, 1.25" Up-Turned Lip Light, Tall Cabinet - Pierce, Interior, Left Side and Pierce, Interior, Right Side Louvers, Cabinet - 0-No Louvers Color, Strap, Interior - Orange	1
128	0108190		Not Required, Seat, Forward Facing C/C, PS Outboard	1
129	0096418		Partition, Vertical, EMS Compartment Location - spit ems compartment Qty, - 1	1
130	0566653		Upholstery, Seats In Cab, Turnout Tuff Color, Cab Interior Vinyl/Fabric - c) Black	1
131	0543991		Bracket, Air Bottle, Hands-Free II, Cab Seats Qty, - 03	3
132	0603866		Seat Belt, Dual Retractor, ReadyReach, Saber FR/Enforcer Seat Belt Color - Red	1
133	0602464		Helmet Storage, Provided by Fire Department, NFPA 2016	1
134	0647647		Lights, Dome, FRP Dual LED 4 Lts 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	1
135	0602637		Portable Hand Light, Provided by Fire Dept, Pumper NFPA 2016 Classification	1
136	0622803		Cab Instruments, Black Gauges, Black Bezels, Enforcer MUX Emergency Switching - Individual Switches	1
137	0509511		Air Restriction Indicator, Imp/Vel, AXT, Dash CF, Enf MUX	1
138	0543751		Light, Do Not Move Apparatus Alarm, Do Not Move Truck - Pulsing Alarm	1
139	0509042		Messages, Open Dr/DNMT, Color Dsply,	1
140	0622798		Switching, Cab Instrument Lower Console & Overhead, Rocker MUX, Enforcer	1
141	0644179		Wiper Control, 2-Speed with Intermittent, Saber FR/Enforcer	1
142	0548004		Wiring, Spare, 15 A 12V DC 1st Qty, - 02 12vdc power from - Battery direct Wire termination - Butt Splice Location, Spare Wiring - Officer Dash	2
143	0615386		Vehicle Information Center, 7" Color Display, Touchscreen, MUX System Of Measurement - US Customary	1
144	0734857		Collision Mitigation, HAAS Alert (R2V), HA5 Subscription, HAAS R2V - R2V - 5 Year Data Plan Subscription	1
145	0606249		Vehicle Data Recorder w/CZ and Overhead Display Seat Belt Monitor	1
146	0663247		Intercom, Firecom 5100D Single Radio, 4-Pos, D,O,2C Location - best location by installer Location, Intercom, C Cab - 2) 2 forward facing seats	1
147	0006240		Cable, Radio to Intercom Interface, Firecom, 1 Radio Radio, First Two-Way Make - Motorola High Power Radio, First, Two-Way Model - Motorola XTL-5000	1
148	0681413		Headset, Firecom, FH-51 Over Head, Radio Transmit Qty, - 02 Location, Headset - Driver Seat and Officer Seat	2
149	0681396		Headset, Firecom, FH-52 Over Head, Intercom Only Qty, - 02 Location, Headset - DS Outbrd, Fwrd Fcng Seat and PS Outbrd, Fwrd Fcng Seat	2

Line	Option	Type	Option Description	Qty
150	0681408		Hangers For Headsets, NFPA, Each Qty, - 04 Location, Headset Hangers - Driver Seat, Officer Seat, DS Inbrd, Fwrd Fcng Seat and PS Inbrd, Fwrd Fcng Seat	4
151	0696439		Antenna Mount, Custom Chassis, Cable Routed to Instrument Panel Area Qty, - 01 Location, Antenna Mount - Right Side	1
152	0540118		Camera, Safety Vision, Driver Mux, Rear Camera Only Camera System Audio - Speaker Behind Driver	1
153	0615112		Pierce Command Zone, Advanced Electronics & Control System, Enforcer, WiFi	1
154	0624253		Electrical System, Enforcer MUX	1
155	0735191		Batteries, (3) Exide Grp 31, 950 CCA ea, Threaded Stud, LS Bat Box	1
156	0008621		Battery System, Single Start, All Custom Chassis	1
157	0002698		Battery Compartment, Saber/Enforcer	1
158	0724049		Battery Charger/Converter, (2) PD2180, IRT	1
159	0505960		Location, Charger, Left Side Front Body Compartment Location - as high as possible	1
160	0530960		Not Required, Remote Battery Charger Indicator	1
161	0724036		Shoreline, IRT, 30A 120V, Kussmaul Auto Eject, 091-159-30-120, Super Color, Kussmaul Cover - b) red	1
162	0724033		Shoreline Location IRT Location, Shoreline, IRT - Body - LS Front Compt - LS Wall	1
163	0723255		Sub Feed Breaker Box, Cutler Hammer, For IRT Shoreline Location, CB Panel - in the LS3 compartment upper back wall	1
164	0647729		Alternator, 320 amp, Delco Remy 40SI	1
165	0092582		Load Manager/Sequencer, MUX Enable/Disable Hi-Idle - e)High Idle enable	1
166	0720839		Switch, CZ Display Only, Load Manager	1
167	0783153		Headlights, Rect LED, JW Spkr Evo 2, AXT/DCF/Enf/Imp/Sab/Vel Color, Headlight Bez - Chrome Bezel	1
168	0625953		Light, Directional, WIn 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts, Enf, Sab FR Color, Lens, LED's - m)match LED's	1
169	0620054		Light, Directional/Marker, Intermediate, Weldon 9186-8580-29 LED 2lts	1
170	0735474		Lights, Clearance/Marker/ID, Front, P25 LED 7 Lts, Saber FR/Enforcer Light Guard - No Guards	1
171	0625210		Lights, Directional, Cab Front Side, Truck-Lite 19036Y LED, AXT/Enf	1
172	0627282		Lights, Clearance/Marker/ID, Rear, FRP LED Bar & P25 LED 4Lts	1
173	0564683		Lights, Tail, WIn M6BTT* Red LED Stop/Tail & M6T* Amber LED Dir Arw For Hsg Color, Lens - Colored	1
174	0561471		Lights, Backup, WIn M6BUW, LED, For Tail Lt Housing	1
175	0664481		Bracket, License Plate & Light, P25 LED	1
176	0556853		Bezels, WIn, (2) M6 Chrome Pierce, For Mtg (3) WIn M6 Lts	1
177	0589905		Alarm, Back-up Warning, PRECO 1040	1
178	0769420		Lights, Perimeter Cab, Amdor AY-LB-12HW020 LED 4Dr	1
179	0769572		Lights, Perimeter Pump House, Amdor AY-LB-12HW020 LED 2lts	1
180	0770056		Lights, Perimeter Body, Amdor AY-LB-12HW020 LED 2lts, Rear Step Control, Perimeter Lts - Parking Brake Applied	1
181	0556360		Lights, Step, P25 LED 4lts, Pump Pnl Sw	1
182	0735836		Light, Roof Mt, HiViz, FT-B-46-*-* , Cnt Feature Control, Scene Lts - Cab Sw Panel DS, Pump Panel Sw LS and Cab Sw Panel PS Color, Lt Housing HiViz - Black Scene Light Optics - Flood	1
183	0736731		Lights, HiViz FT-GESM LED 1st Location - Driver side of the cab Qty, - 01 Control, Scene Lts - Cab Sw Panel DS, Pump Panel Sw LS and Cab Sw Panel PS Color, Lt Housing HiViz - Blk Opt Hold, Blk Bez, Blk Fix	1
184	0736729		Lights, HiViz FT-GESM LED 2nd Location - officer side of cab Qty, - 01	1

Line	Option	Type	Option Description	Qty
184			Control, Scene Lts - Cab Sw Panel DS, Pump Panel Sw LS and Cab Sw Panel PS	
185	0756029		Color, Lt Housing HiViz - Blk Opt Hold, Blk Bez, Blk Fix Lights, HiViz FT-MB-18-TR-*-* 25.20", 2nd	1
			Location - officer side of the hosebed Qty, - 01	
186	0774296		Control, Scene Lts - Side Scene Controls Color, Lt Housing HiViz - Black Scene Light Optics - combination Housing, Recessed Light, Horizontal Mt	1
			Location - one (1) on each side of the hosebed Qty, - 01	
187	0756031		Material, Bracket - Painted Aluminum Lights, HiViz FT-MB-18-TR-*-* 25.20", 1st	1
			Location - driver side of the hose bed Qty, - 01	
188	0689891		Control, Scene Lts - Side Scene Controls Color, Lt Housing HiViz - Black Scene Light Optics - combination Lights, Deck, Wln (2) PFBP12C LED Rear Flood Lights	1
189	0645877		Switch, Scene Lt Cntrl - h)switch at rear Lights, Hose Bed, Sides, Dual LED Light Strips	1
190	0645681		Control, Hose Bed Lts - Cup Switch At Rear Lights, Not Required, Rear Work, Deck Lights At Rear	1
191	0787447		Lights, Walk Surf, Dual LED Light Strips, Cargo Area, Bdy Stp Lt	1
192	0060115		Pumper, Medium, Aluminum, 2nd Gen	1
193	0554271		Body Skirt Height, 20"	1
194	0013303		Tank, Water, 500 Gallon, Poly, Med, New York Style	1
195	0003405		Overflow, 4.00" Water Tank, Poly	1
196	0028107		Not Required, Foam Cell Modification	1
197	0633066		Sleeve, Through Tank	1
			Qty, Sleeve - 1	
198	0553725		Water Tank Sleeve - Plumbing/Hydraulic Diameter - 3" Plumbing Restraint, Water Tank, Heavy Duty, Special Type Tank, 4x4, or Export	1
199	0003429		Not Required, Direct Tank Fill	1
200	0003424		Not Required, Dump Valve	1
201	0048710		Not Required, Jet Assist	1
202	0030007		Not Required, Dump Valve Chute	1
203	0514778		Not Required, Switch, Tank Dump Master	1
204	0618241		Hose Bed, Aluminum, Pumper, New York Style	1
			Material Trim/Scuffplate - b) S/S, Brushed	
205	0723549		Painted Hose Bed	1
			Paint Color, Hose Bed Interior - Match Lower Body	
206	0627877		Hose Bed Capacity, 1000' of 5.00", 1000' of 3.00"	1
207	0003488		Divider, Hose Bed, Unpainted	4
			Qty, Hosebed Dividers - 4	
208	0651407		Reinforcement, Hose Bed Divider Tied To Handrail	4
			Qty, - 04	
209	0777988	SP	Notch in Hosebed Divider, Center	4
			Location - two (2) in each of the driver side hosebed dividers that define the space for the rear crosslays Qty, - 04	
			Size - as wide and deep as possible per engineering	
210	0530804		Cover, Hose Bed, Alum Treadplate	1
211	0589778		Flap, Rear of Alum Hose Bed Cover, Vinyl, Paddle Seat Belt Buckles, 6" Straps	1
			Color, Vinyl Cover - c) black	
212	0013512		Running Boards, 12.75" Deep	1
213	0689496		Tailboard, 12" Deep, Full Width, Extended Substructure, Angled Corners	1
214	0690027		Wall, Rear, Smooth Aluminum/Body Material, Flush Rear Wall	1
215	0889214		Tow Eyes, Tow Bar, 2G Pumper	1
216	0895820		Construction, Compt, Alum, 2G Pumper	1
217	0023650		LS 152" Rollup, Full Height Front & Rear, FDLER	1
218	0063658		RS 152" Rollup, Full Height Front & Rear, FDLER	1

Line	Option	Type	Option Description	Qty
219	0692733		Doors, Rollup, Gortite, Side Compartments Qty, Door Accessory - 06 Color, Roll-up Door, Gortite - Satin finish Latch, Roll-up Door, Gortite - Non-Locking Liftbar	6
220	0080647		Compt, Flush Rear, Rollup, 30.75" FF, 41.88" D	1
221	0692746		Door, Gortite, Rollup, Rear Compartment Color, Roll-up Door, Gortite - Satin finish Latch, Roll-up Door, Gortite - Non-Locking Liftbar	1
222	0554995		No Body Modification Required	1
223	0625184		Guard, Drip Pan, S/S, Rollup Door, Pumper Qty, Door Accessory - 05 Location, Door Guard/Drip Pan - LS1, LS3, RS1, RS3 and B1	5
224	0592591		Guard, Drip Pan, Roll-up Door, Mounted Special Height, PUC Std Dpth or 2nd Gen Qty, Door Accessory - 02 Location, Door Accessory - LS2 and RS2	2
225	0616670		Lights, Compt, Pierce LED, Dual Light Strips, Each Side of Door, Pumper/Tanker Qty, - 07 Location, Compartment Lights - All Body Compts	7
226	0687146		Shelf Tracks, Painted Qty, Shelf Track - 05 Location, Shelf Track - LS1, LS3, RS1, RS3 and B1	5
227	0600350		Shelves, Adj, 500 lb Capacity, Full Width/Depth, Predefined Locations Qty, Shelf - 05 Material Finish, Shelf - Painted - Spatter Gray Location, Shelves/Trays, Predefined - .Location To Be Determined	5
228	0647091		Tray, Floor Mounted, Slide-Out, 500lb, 2.00" Sides Qty, - 01 Location, Tray Slide-Out, Floor Mounted - B1 Material Finish, Tray - Painted - Spatter Gray	1
229	0797957		Pac Trac, Installed on Compt Wall, Back Wall Only Location - Vertically mounted to compartment back walls. LS 2, 3 Qty, Comp. Accessory - 02	2
230	0696950		High Rise Pack Storage, Curved Mount, Inside Compt, Each Location - In the LS1 compartment Qty, Comp. Accessory - 02 Location, Bracket/comp. - exact location to be determined Size - Approx 12" Dimensions - 6.0"	2
231	0004016		Rub Rail, Aluminum Extruded, Side of Body	1
232	0784809		Fender Crowns, Rear, Rubber, w/Removable Liner Material Finish, Fender Liner - Brushed Stainless	1
233	0519849		Not Required, Hose, Hard Suction	1
234	0626229		Handrails, Side Pump Panels, Per Print	1
235	0004126		Handrails, Beavertail, Standard	1
236	0011212		Handrail, Not Required, Rear Hose Bed, Pumper	1
237	0657651		Compt, Air Bottle, Double, Fender Panel Qty, Air Bottle Comp - 4 Door Finish, Fender Compt - Polished Location, Fender Compt - Double - LS Fwd, Double - LS Rear, Double - RS Fwd and Double - RS Rear Latch, Air Bottle Compt - Southco C2 Chrome Raised Insert, Air Bottle Compt - Rubber Matting	4
238	0004225		Ladder, 24' Duo-Safety 900A 2-Section	1
239	0635956		Ladder, 14' Duo-Safety 775-DR Roof Qty, - 01	1
240	0598395		Ladders/Backboard Btwn Tank & S.Sht, RS, Ext'd Rr, Encl'd Complete, RPH Size, Backboard - 72" x 18" x 2" Door, Material & Finish, Ladder Storage - smooth aluminum Latch, Door Ladder Storage - D-Handle latch	1
241	0733387		Ladder, 10' Duo-Safety Folding 585A	1
242	0733796		Trough, Folding Ladder, Ladder Storage Btwn Tank & S.Sht Location, Left Side, Right Side - Right Side	1
243	0602877		Pike Pole, Pumper, Provided by Fire Department, NFPA 2016 Pike Pole Make/Model - Duo-Safety 10' Pike Pole	1

Line	Option	Type	Option Description	Qty
244	0760175		Tube, Pike Pole 8' or Longer, Btwn Tank & S.Sht Ladder Storage Qty, Pike Poles - 1 Location, Left Side, Right Side - Right Side Width, Notch, Pike Pole Tube - .75", Standard Notch	1
245	0602875		Pike Pole, 6', Pumper, Provided by Fire Department, NFPA 2016 Pike Pole Make/Model - Duo-Safety 6' Pike Pole	1
246	0760247		Tube, Pike Pole 6', Btwn Tank & S.Sht Ladder Storage Qty, Pike Poles - 1 Location, Left Side, Right Side - Right Side Width, Notch, Pike Pole Tube - .75", Standard Notch	1
247	0024388		No Steps Required, Front Of Body	1
248	0591883		Steps, Folding, Rear of Body, Trident Coating, Step - black	1
249	0007545		Pump House, Side Control, 45", Control Zone	1
250	0037731		Pump House Structure, Raised, Included with Ladder Storage	1
251	0049444		Notch Cargo Compt Side Sheet w/ Rollers, Right Side	1
252	0014441		Pump, Hale, QMAX-150, 1500 GPM, Single Stage	1
253	0014481		Seal, Graphite Packing Glands, Hale	1
254	0014477		Trans, Pump, Hale, Gear	1
255	0635600		Pumping Mode, Stationary Only	1
256	0604308		Pump Shift, Air w/o Manual Override, Split Shaft, Interlocked, Hale	1
257	0003148		Transmission Lock-up, EVS	1
258	0004547		Auxiliary Cooling System	1
259	0014486		Not Required, Transfer Valve, Single Stage Pump	1
260	0746501		Valve, Relief Intake, Elkhart Qty - 1 Pressure Setting - 125 psig Intake Relief Valve Control - Behind Right Side Pump Panel	1
261	0794959		Controller, Pressure, Pierce, Pump Boss, PBA300	1
262	0072153		Primer, Trident, Air Prime, Air Operated	1
263	0780364		Manuals, Pump, (2) Total, Electronic Copies	1
264	0602512		Plumbing, Stainless Steel and Hose, Single Stage Pump, Control Zone	1
265	0089437		Plumbing Without Foam System	1
266	0004645		Inlets, 6.00" - 1250 GPM or Larger Pump	1
267	0014650		Pump Suction Tube(s), Short, All	1
268	0730368		Valve, Ball Intake, TFT, AX Series Location - one (1) on each side pump intake Qty - 2 Connection, Inlet, Side B - 1ST (5.0" Rigid Storz) with a cap Connection, Outlet, Side A - NX (6.0" Threaded Swivel) Ball Intake Valve Actuation - PS (Parallel) Relief Valve, Ball Intake - Standard	2
269	0004646		Cap, Main Pump Inlet, Long Handle, NST, VLH	1
270	0084610		Valves, Akron 8000 series- All	1
271	0016158		Valve, Inlet(s) Recessed, Side Cntrl, "Control Zone" Qty, Inlets - 1	1
272	0004700		Control, Inlet, at Valve	1
273	0004660		Inlet (1), Left Side, 2.50"	1
274	0004680		Inlet, Right Side, 2.50"	1
275	0897261		Inlet, 4" to 6" Front, 5" Plumbing, w/Bleeder Valve, Thru Bumper Inlet, Size - Six Drain, Suction - T Swing Handle Inlet, Front, Valve - Jamesbury 5.00" Inlet, Front, Plumbing - Black Iron Pipe	1
276	0014823		Control, Front Inlet, Electric, w/Indicator Lights	1
277	0755136		Valve, Relief Intake, Front Inlet, Elkhart Pressure Setting - 125 psig	1
278	0749108		Piping for Front Suction Thru Bumper, As Short As Possible	1
279	0004788		Cap, Front Inlet, Long Handle, VLH	1
280	0092569		No Rear Inlet (Large Dia) Requested	1
281	0064116		No Rear Inlet Actuation Required	1
282	0092696		Not Required, Cap, Rear Inlet	1

Line	Option	Type	Option Description	Qty
283	0009648		No Rear Intake Relief Valve Required on Rear Inlet	1
284	0092568		No Rear Auxiliary Inlet Requested	1
285	0723049		Valve, .75" Bleeder, Aux. Side Inlet, "T" Swing Handle	1
286	0029043		Tank to Pump, (1) 3.00" Valve, 3.00" Plumbing	1
287	0004905		Outlet, Tank Fill, 1.50"	1
288	0771257		Control, Outlets, Swing Handle, Vertical, Side Control, 45.00" Pump House Location - front bumper, (2) DS 2-1/2", (1) PS 2-1/2", Rear 2-1/2", Qty, Discharges - 09	9
289	0004940		Outlet, Left Side, 2.50" Qty, Discharges - 02	2
290	0005091		Elbow, Left Side Outlets, 45 Degree, 2.50" FNST x 2.50" MNST, VLH	1
291	0092570		Not Required, Outlets, Left Side Additional	1
292	0035094		Not Required, Elbow, Left Side Outlets, Additional	1
293	0004945		Outlet, Right Side, 2.50" Qty, Discharges - 01	1
294	0025091		Elbow, Right Side Outlets, 45 Degree, 2.50" FNST x 2.50" MNST, VLH	1
295	0092571		Not Required, Outlets, Right Side Additional	1
296	0089584		Not Required, Elbow, Right Side Outlets, Additional	1
297	0005047		Outlet, 4" w/4" Right, Handwheel Valve, Brand - Akron	1
298	0005097		Elbow, Large Dia Outlet, 30 Deg, 4.00" FNST x 5.00" Storz Qty, - 01	1
299	0649939		Outlet, Front, 1.50" w/2" Plumbing Fitting, Outlet - 1.50" NST with 90 degree swivel Drain, Front Outlet - Automatic Location, Front, Single - in center bumper tray	1
300	0004995		Outlet, Rear, 2.50" Qty, Discharges - 01 Location, Outlet - b) left side	1
301	0045091		Elbow, Rear Outlets, 45 Degree, 2.50" FNST x 2.50" MNST, VLH	1
302	0092574		Not Required, Outlet, Rear, Additional	1
303	0085695		Not Required, Elbow, Rear Outlets, Large, Additional	1
304	0004925		Outlet, Front HB, 1.50" w/2.00" Plumbing Qty, Discharges - 02 Location, Outlet - b) left side	2
305	0752097		Caps/Plugs for 1.00" to 3.00" Discharges/Inlets, Chain	1
306	0723042		Valve, 0.75" Bleeder, Discharges, "T" Swing Handle	1
307	0005065		Outlet, 3.00" Deluge Riser	1
308	0543608		Monitor, Akron 3433 Hi-Riser and (2) 2.5" Inlet Grd Base Monitor Finish - Painted by OEM	1
309	0046968		Nozzle, Akron 2499, Quad Stacked Tips and 3488 Shaper	1
310	0005070		Deluge Mount, NPT	1
311	0723726		Speedlay Module Not Required	1
312	0722432		Hose Restraint Not Required, No Speedlay Module	1
313	0723395		Speedlays, Not Required	1
314	0723394		Speedlays, Not Required	1
315	0025140		Not Required, 1.50" Crosslays	1
316	0029196		Not Required, 2.50" Crosslay	1
317	0500535		Not Required, Hose Restraint, Crosslay	1
318	0029260		Not Required, Speedlays	1
319	0750536		Hose Restr, Spdly, Not Required, No Spdly	1
320	0015216		Reel, Booster, Aluminum - Over Pump, Right Side	1
321	0011060		Switch, Reel Rewind - One at Pump Panel	1
322	0005300		Hose, Booster - 150' of 1.00"/800 PSI	1
323	0005244		Capacity, Hose Reel 200' of 1"	1
324	0007074		Nozzle, Elkhart S-200 1.00"	1
325	0005326		Blowout, Hose Reel - Valve at Panel Qty, - 1	1
326	0745878	SP	Modify Hose Reel Payout Direction and Wiring Location - .	1
327	0622237		Roller Assembly, Additional Location - driver side of the cargo area inline with the booster reel	1

Line	Option	Type	Option Description	Qty
327			Qty, - 1	
328	0044333		Not Required, Foam System	1
329	0012126		Not Required, CAF Compressor	1
330	0552517		Not Required, Refill, Foam Tank	1
331	0042573		Not Required, Foam System Demonstration	1
332	0045465		Not Required, Foam Tanks	1
333	0091110		Not Required, Foam Tank Drain	1
334	0091079		Not Required, Foam Tank #2	1
335	0091112		Not Required, Foam Tank #2 Drain	1
336	0738072		Approval Dwg, Pump Panel(s), Not Required	1
337	0032479		Pump Panel Configuration, Control Zone	1
338	0629252		Material, Pump Panels, Side Control Black Vinyl	1
			Material Finish, Pump Panel, Side Control - Black Vinyl	
			Material, Pump Panel, Side Control - Aluminum	
339	0721765		Panel, Pump Access - Right Side Only, Side Control	1
			Latch, Pump Panel Access, Side Mount - Swell Latch, Black	
340	0583824		Light, Pump Compt, WIn 3SC0CDCR LED White	1
			Qty, - 01	
341	0586382		Gauges, Engine, Included With Pressure Controller	1
342	0005601		Throttle, Engine, Incl'd w/Press Controller	1
343	0739224		Indicator Light @ Pump Panel, Throttle Ready, Incl w/Pressure Gov/Throttle, Green	1
344	0549333		Indicators, Engine, Included with Pressure Controller	1
345	0745568		Indicator Light, Pump Panel, OK To Pump, Green	1
346	0008940		Gauges, 4.50" Master, Class 1, Special	1
			Gauge Pressure Range - 30"-0-300 psi	
			Color Dial Face - white	
347	0511102		Gauge, 2.00" Pressure, Class 1, Special	1
			Gauge Pressure Range - 0-300 psi	
			Color Dial Face - white	
348	0062586		Gauge, Water Level, Class 1, Pierce Std	1
349	0006774		Not Required, Foam Level Gauge	1
350	0593161		Light Shield, S/S LED	1
351	0606694		Air Horns, (2) Hadley, 6" Round, In Bumper	1
352	0606833		Location, Air Horns, Bumper, Each Side, Inside Frame (Pos #3 & #5)	1
353	0757092		Control, Air Horn, Multi Select	1
354	0757076		Control, Air Horn, Lanyard, RS	1
			Lanyard - Link Chain, Vinyl Tubing	
355	0757081		Control, Air Horn, Ft Sw, LS	1
356	0525667		Siren, WIn 295SLSA1, 100 or 200 Watt	1
357	0557179		Location, Siren, Heavy Swivel Mount Center Console, Not Overhead	1
			Location - within reach of the driver, exact location to be determined	
358	0076156		Control, Elec Siren, Head Only	1
359	0601306		Speaker, (1) WIn, SA315P, w/Pierce Polished Stainless Steel Grille, 100 watt	1
			Connection, Speaker - siren head	
360	0601565		Location, Speaker, Frt Bumper, Recessed, Center (Pos 4)	1
361	0895310		Siren, Federal Q2B	1
			Finish, Q2B Siren - Chrome	
362	0006097		Location of Siren, Recessed in Bumper	1
			Location, Siren, Mech - a) Left	
363	0748305		Control, Mech Siren, Multi Select	1
364	0748282		Control Mech Siren, Ft Sw LS	1
365	0740391		Sw, Siren Brake, Momentary Chrome Push Button, RS	1
366	0735899		Sw, Siren Brake, Mom Rocker, Red Outline, LS Overhead Sw Pnl, Mux	1
367	0746353		Not Required, Warning Lights Intensity	1
368	0654372		Lightbar, Code 3, 21TRPL69 LED, 6R-TR4, 6R-TR3, 2W-TR4, 4RC-TR6	1
369	0016380		No Additional Lights Req'd, Side Zone Upper	1
370	0764233	SP	Lights, Front Zone, Code 3 65** In Common Bezel, 4lts	1
			Color, Lens, LED's - c)clear	
			Color, Lt DS Frnt Outside - DS Front Outside Red	
			Color, Lt PS Frnt Outside - PS Front Outside Red	
			Color, Lt DS Frnt Inside - r) DS Front Inside Red	
			Color, Lt PS Frnt Inside - r) PS Front Inside Red	

Line	Option	Type	Option Description	Qty
371	0537714		Lights, Side Zone Lower, Code 3 468CXBZ-75 PRIZM LED, Clear Lens, 3pr, Ovr 25 Location, Lights Mid - behind the crew cab door Location, Lights Rear - over the rear wheel opening Location, Lights Front Side - b)each side bumper Color, Lt Side Front - Red Color, Lt Side Middle - Red Color, Lt Side Rear - Red	1
372	0537862		Lights, Side, Code 3, 468CXBZ-75 PRIZM LED, Clear Lens Location, Lights - on the forward hosebed side sheet, one (1) each side Qty, - 02 Color, Lights, Warning - gla) red Control, Light - a) rear upper warning	2
373	0537817		Lights, Rear Zn Lwr, Code-3 468CXBZ-75 PRIZM LED, Clear Lens Color, Lt DS Rear - r) DS Rear Lt Red Color, Lt PS Rear - r) PS Rear Lt Red	1
374	0729798		Lights, Rear, W/in WIONSM* LED, Recessed In Tailboard, 1st Location - Inserted in rear step/bumper. Qty, - 02 Color, Lights, Warning - Red Flashing Control, Light - c) rear lower warning Color, Trim - Chrome Housing	2
375	0653285		Light, Rear Zone Up, Code 3 A36-XX LED, Arch Beacon Color, Lens, LED's - c)clear Color, Lt, Rear Upper DS - r) DS Rear Upper Red Color, Lt, Rear Upper PS - r) PS Upper Rear Red	1
376	0006551		Not Required, Lights, Rear Upper Zone Blocking	1
377	0006615		Mtg, Rear Warn Lts, On Top of Compt	1
378	0781507		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 2nd, Interior Cab Qty, - 01 Location 1 - Passenger side behind officers seat on post. AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall Plate(s)	1
379	0781579		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st, Interior Cab Qty, - 01 Location 1 - Drivers side rear of seat on post. AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall Plate(s)	1
380	0779722		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st, Interior Body Qty, - 01 Location 1 - DS3 front high on forward wall. AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall plate	1
381	0779716		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 4th, Interior Body Qty, - 01 Location 1 - RS1 High of forward wall. AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall plate	1
382	0779717		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 3rd, Interior Body Qty, - 01 Location 1 - RS3 High on forward wall. AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall plate	1
383	0779718		Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 2nd, Interior Body Qty, - 01 Location 1 - DS1 high on forward wall AC Power Source - Shoreline Cover, Receptacle - Interior SS Wall plate	1
384	0519934		Not Required, Brand, Hydraulic Tool System	1
385	0649753		Not Required, PTO Driven Hydraulic Tool System	1
386	0007150		Bag of Nuts and Bolts Qty, Bag Nuts and Bolts - 1	1
387	0602516		NFPA Required Loose Equipment, Pumper, NFPA 2016, Provided by Fire Department	1
388	0602407		Soft Suction Hose, Provided by Fire Department, Pumper NFPA 2016 Classification	1

Line	Option	Type	Option Description	Qty
389	0027023		No Strainer Required	1
390	0602538		Extinguisher, Dry Chemical, Pumper NFPA 2016 Class, Provided by Fire Department	1
391	0602360		Extinguisher, 2.5 Gal. Pressurized Water, Pumper NFPA 2016, Provided by Fire Dept	1
392	0602679		Axe, Flathead, Pumper NFPA 2016 Classification, Provided by Fire Department	1
393	0602667		Axe, Pickhead, Pumper NFPA 2016 Classification, Provided by Fire Department	1
394	0741569		Paint Process / Environmental Requirements, Appleton	1
395	0709566		Paint, Two-Tone Color, Enforcer Paint Color, Upper Area, Predefined - #101 Black Shield, Cab - Standard Shield Paint Color, Lower Area, Predefined - #90 Red Paint Break, Cab - Standard Two-Tone Cab Break	1
396	0709845		Paint, Single Color, Body Paint, Body - Match Lower Cab	1
397	0636525		Coating, Chassis Frame Assy, Hot Dip Galvanized Paint Color, Frame Assembly, Predefined - Lower Job Color	1
398	0693798		Paint, Front Wheels Paint, Wheels - Black #101	1
399	0693793		Paint, Rear Wheels, Single Axle Paint, Wheels - Black #101	1
400	0733739		Paint, Axle Hubs Paint, Axle Hub - Black #101	1
401	0007230		Compartment, Painted, Spatter Gray	1
402	0602458		Reflective Band, Provided by Fire Department, NFPA 2016	1
403	0007356		Reflective across Cab Face	1
404	0536954		Stripe, Chevron, Rear, Diamond Grade, Pumper Color, Rear Chevron DG - fluorescent yellow green	1
405	0065687		Stripe, Reflective, Cab Doors Interior Color, Reflective - a) white	1
406	0027286		Not Required, Lettering Specs	1
407	0007472		[Lettering not Requested]	1
408	0772003		Manual, Fire Apparatus Parts, USB Flash Drive, Custom Qty, - 01	1
409	0772037		Manual, Chassis Service, USB Flash Drive, Custom Qty, - 01	1
410	0773381		Manual, Chassis Operation, (1) USB Flash Drive, Custom	1
411	0030008		Warranty, Basic, 1 Year, Apparatus, WA0008	1
412	0696698		Warranty, Engine, Cummins, 5 Year, WA0181	1
413	0684952		Warranty, Steering Gear, TRW Ross TAS, 1 Year WA0202	1
414	0596017		Warranty, Frame, 50 Year, Custom Chassis, WA0013	1
415	0610471		Warranty, Axle, Eaton/Dana, 5 Year/100,000 Mile, Parts and Labor	1
416	0610485		Warranty, Axle, Eaton/Dana, 5 Year/100,000 Mile, Parts and Labor	1
417	0652758		Warranty, ABS Brake System, 3 Year, Meritor Wabco, WA0232	1
418	0019914		Warranty, Structure, 10 Year, Custom Cab, WA0012	1
419	0744240		Warranty, Paint, 10 Year, Cab, Pro-Rate, WA0055	1
420	0524627		Warranty, Electronics, 5 Year, MUX, WA0014	1
421	0647720		Warranty, Pierce LED Strip Lights, WA0203	1
422	0046369		Warranty, 5-year EVS Transmission, Standard Custom, WA0187	1
423	0685945		Warranty, Transmission Cooler, WA0216	1
424	0688798		Warranty, Water Tank, Lifetime, UPF, Poly Tank, WA0195	1
425	0596025		Warranty, Structure, 10 Year, Body, WA0009	1
426	0693127		Warranty, Gortite, Roll-up Door, 6 Year, WA0190	1
427	0892410		Warranty, Pump, Hale, 5 Year Parts, 2 Year Labor, WA0388	1
428	0648675		Warranty, 10 Year S/S Pumping, WA0035	1
429	0641372		Warranty, Foam System, Not Available	1
430	0595820		Warranty, Paint, 10 Year, Body, Pro-Rate, WA0057	1
431	0593921		Not Required, Warranty, No Lettering	1
432	0683627		Certification, Vehicle Stability, CD0156	1
433	0736238		Certification, Engine Installation, Saber FR/Enf, Cummins L9, 2021	1
434	0686786		Certification, Power Steering, CD0098	1
435	0631980		Certification, Cab Integrity, Saber FR/Enforcer, CD0130	1

Line	Option	Type	Option Description	Qty
436	0631973		Certification, Cab Door Durability, Saber FR/Enforcer, CD0137	1
437	0631978		Certification, Windshield Wiper Durability, Saber FR/Enforcer, CD0132	1
438	0631974		Certification, Electric Window Durability, Saber FR/Enforcer, CD0133	1
439	0631977		Certification, Seat Belt Anchors and Mounting, Saber FR/Enforcer, CD0134	1
440	0735949		Certification, Cab HVAC System Performance, SFR/Enf, CD0165/CD0167/CD0174/CD0175	1
441	0545073		Amp Draw Report, NFPA Current Edition	1
442	0002758		Amp Draw, NFPA/ULC Radio Allowance	1
443	0799248		Appleton/Florida BTO	1
444	0000018		PUMPER, 2ND GEN	1
445	0000012		PIERCE CHASSIS	1
446	0004713		ENGINE, OTHER	1
447	0046395		EVS 3000 Series TRANSMISSION	1
448	0020012		HALE PUMP	1
449	0020009		POLY TANK	1
450	0028047		NO FOAM SYSTEM	1
451	0020006		SIDE CONTROL	1
452	0020007		AKRON VALVES	1
453	0020014		FRONT SUCTION	1
454	0020015		ABS SYSTEM	1
455	0658751		PUMPER BASE	1

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<u>TABLE OF CONTENTS</u>		
SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER.....	16	
INTENT OF SPECIFICATIONS	16	
INSTRUCTIONS TO BIDDERS	16	
EXCEPTIONS.....	17	
GENERAL DESIGN AND CONSTRUCTION	17	
QUALITY AND WORKMANSHIP.....	18	
DELIVERY.....	18	
MANUALS AND SERVICE INFORMATION.....	18	
SAFETY VIDEO.....	18	
PERFORMANCE TESTS AND REQUIREMENTS.....	18	
FAILURE TO MEET TEST.....	19	
SERVICE AND WARRANTY SUPPORT (DEALERSHIP).....	19	
SERVICE AND WARRANTY SUPPORT (MANUFACTURER)	19	
LIABILITY	20	
INSURANCE PROVIDED BY BIDDER	20	
COMMERCIAL GENERAL LIABILITY INSURANCE.....	20	
COMMERCIAL AUTOMOBILE LIABILITY INSURANCE.....	21	
UMBRELLA/EXCESS LIABILITY INSURANCE	21	
INSURANCE PROVIDED BY MANUFACTURER.....	21	
PRODUCT LIABILITY INSURANCE	21	
UMBRELLA/EXCESS LIABILITY INSURANCE	22	
SINGLE SOURCE MANUFACTURER.....	22	
NFPA 2016 STANDARDS	22	
NFPA COMPLIANCY.....	23	
VEHICLE INSPECTION PROGRAM CERTIFICATION.....	23	
PUMP TEST	23	
GENERATOR TEST	23	
BREATHING AIR TEST	23	
NEW VEHICLE ORIENTATION.....	23	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
LICENSED DEALER.....	24	
THIRD-PARTY WEEKLY PROGRESS REPORTS	24	
DEALERSHIP LONGEVITY	24	
INSPECTION TRIP(S)	24	
BID BOND	25	
PERFORMANCE BOND NOT REQUESTED	25	
APPROVAL DRAWING	26	
DRAWING, BUMPER EXTENSION TOP VIEW.....	26	
ELECTRICAL WIRING DIAGRAMS.....	26	
CHASSIS.....	26	
WHEELBASE	26	
GVW RATING.....	26	
FRAME	26	
FRONT AXLE	26	
FRONT SUSPENSION.....	26	
SHOCK ABSORBERS.....	27	
FRONT OIL SEALS	27	
FRONT TIRES.....	27	
REAR AXLE.....	27	
TOP SPEED OF VEHICLE	27	
REAR SUSPENSION	27	
REAR OIL SEALS.....	27	
REAR TIRES	27	
TIRE BALANCE.....	27	
TIRE PRESSURE MANAGEMENT.....	28	
FRONT HUB COVERS.....	28	
CHROME LUG NUT COVERS	28	
MUD FLAPS	28	
WHEEL CHOCKS PROVIDED BY FIRE DEPARTMENT	28	
WHEEL CHOCK BRACKETS PROVIDED BY FIRE DEPARTMENT	28	
ANTI-LOCK BRAKE SYSTEM.....	28	
BRAKES.....	28	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
BRAKE SYSTEM AIR COMPRESSOR.....	29	
BRAKE SYSTEM.....	29	
BRAKE SYSTEM AIR DRYER.....	29	
BRAKE LINES	29	
AIR INLET.....	29	
ENGINE.....	29	
HIGH IDLE.....	30	
IDLE REDUCTION, BATTERY MANAGEMENT SYSTEM, LITHIUM ION	30	
BMS FEATURES	30	
LITHIUM-ION BATTERY PACK	31	
LOCATION.....	31	
LEAD ACID BATTERY AMPERAGE MONITORING	31	
LOCATION.....	31	
CAB TEMPERATURE SENSOR.....	31	
ENGINE INTERLOCK.....	31	
IDLE REDUCTION, LITHIUM-ION, SYSTEM.....	32	
SYSTEM REQUIREMENTS.....	32	
OPERATIONAL SCENARIO	32	
SYSTEM OPERATION	32	
SYSTEM INTERLOCKS.....	33	
CURRENT SETTING	33	
AUTO SHUTDOWN.....	33	
AUTO SHUTDOWN SEQUENCE	34	
AUTO START	34	
AUTO START SEQUENCE	34	
ENGINE AUTO STARTING	35	
QUICK START.....	35	
CAB TEMPERATURE CONTROL	35	
CAB TEMPERATURE - HVAC COOLING.....	35	
CAB TEMPERATURE - HVAC HEATING	36	
TOUCH SCREEN OPERATION.....	36	
DEBUGGING COMMAND ZONE.....	36	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
COMMAND ZONE™ INFORMATION SCREEN OPERATION.....	36	
ENGINE BRAKE	37	
CLUTCH FAN	38	
ENGINE AIR INTAKE	38	
EXHAUST SYSTEM	38	
RADIATOR	38	
COOLANT LINES	39	
FUEL TANK.....	39	
DIESEL EXHAUST FLUID TANK.....	39	
FUEL PRIMING PUMP	39	
TRANSMISSION.....	39	
TRANSMISSION SHIFTER	40	
TRANSMISSION COOLER.....	40	
DRIVELINE	40	
STEERING	40	
STEERING WHEEL.....	40	
BUMPER	40	
Gravel Pan.....	41	
CENTER HOSE TRAY.....	41	
Center Hose Tray Restraint.....	41	
TOW HOOKS	41	
FRONT BUMPER NOTCH.....	41	
FRONT BUMPER NOTCH.....	41	
ADJUSTABLE HOSE TRAY PARTITION.....	41	
CAB	41	
CAB ROOF DRIP RAIL.....	43	
INTERIOR CAB INSULATION	43	
FENDER LINERS	43	
PANORAMIC WINDSHIELD	43	
WINDSHIELD WIPERS	43	
ENGINE TUNNEL.....	43	
INTERIOR CREW CAB REAR WALL ADJUSTABLE SEATING (PATENT PENDING).....	43	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
CAB REAR WALL EXTERIOR COVERING	43	
CAB LIFT	43	
Cab Lift Interlock	44	
GRILLE	44	
DOOR JAMB SCUFFPLATES	44	
SIDE OF CAB MOLDING	44	
MIRRORS	44	
FRONT CROSS VIEW MIRROR	44	
DOORS	45	
Door Panels	45	
ELECTRIC OPERATED CAB DOOR WINDOWS	45	
CAB STEPS	45	
CAB EXTERIOR HANDRAILS	46	
STEP LIGHTS	46	
FENDER CROWNS	46	
CREW CAB WINDOWS	46	
CAB DASH	46	
AIR BOTTLE HOLDERS	46	
MOUNTING SYSTEM	47	
MOUNTING PLATE ON ENGINE TUNNEL	47	
CAB INTERIOR	47	
CAB INTERIOR UPHOLSTERY	47	
CAB INTERIOR PAINT	47	
CAB FLOOR	47	
DEFROST/AIR CONDITIONING SYSTEM	48	
Cab Defroster	48	
Cab/Crew Auxiliary Heater	48	
Air Conditioning	48	
Climate Control	49	
Gravity Drain Tubes	49	
SUN VISORS	49	
GRAB HANDLES	49	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
ENGINE COMPARTMENT LIGHTS.....	49	
ACCESS TO ENGINE DIPSTICKS.....	49	
SEATING CAPACITY	50	
DRIVER SEAT.....	50	
OFFICER SEAT.....	50	
RADIO COMPARTMENT.....	50	
REAR FACING DRIVER SIDE OUTBOARD SEAT.....	50	
REAR FACING PASSENGER SIDE OUTBOARD SEAT	51	
FORWARD FACING CENTER CABINET	51	
Cabinet Light.....	51	
PARTITION.....	51	
SEAT UPHOLSTERY	51	
AIR BOTTLE HOLDERS.....	51	
SEAT BELTS.....	52	
HELMET STORAGE PROVIDED BY FIRE DEPARTMENT.....	52	
CAB DOME LIGHTS.....	52	
PORTABLE HAND LIGHTS, PROVIDED BY FIRE DEPARTMENT.....	52	
CAB INSTRUMENTATION	53	
Gauges	53	
Indicator Lamps	54	
Alarms.....	55	
Indicator Lamp and Alarm Prove-Out.....	55	
Control Switches	55	
Custom Switch Panels	56	
Diagnostic Panel.....	56	
Cab LCD Display.....	57	
AIR RESTRICTION INDICATOR	57	
"DO NOT MOVE APPARATUS" INDICATOR	57	
DO NOT MOVE TRUCK MESSAGES	57	
SWITCH PANELS.....	58	
WIPER CONTROL.....	58	
SPARE CIRCUIT	58	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
INFORMATION CENTER 59		
General Screen Design 59		
Home/Transit Screen 59		
On Scene Screen..... 60		
Virtual Buttons..... 60		
Page Screen 60		
COLLISION MITIGATION 62		
VEHICLE DATA RECORDER..... 62		
Seat Belt Monitoring System 63		
INTERCOM SYSTEM 63		
RADIO / INTERCOM INTERFACE CABLE 63		
OVER THE HEAD, RADIO TRANSMIT HEADSET 64		
OVER THE HEAD, INTERCOM ONLY HEADSET 64		
HEADSET HANGERS 64		
RADIO ANTENNA MOUNT 64		
VEHICLE CAMERA SYSTEM..... 64		
ELECTRICAL POWER CONTROL SYSTEM..... 65		
Solid-State Control System 65		
Circuit Protection and Control Diagram 66		
On-Board Electrical System Diagnostics 66		
Prognostics 66		
Advanced Diagnostics..... 67		
Tech Module with WiFi..... 67		
Indicator Light and Alarm Prove-Out System..... 67		
Voltage Monitor System 67		
Power and Ground Studs..... 67		
Enhanced Software..... 68		
EMI/RFI Protection..... 68		
ELECTRICAL..... 68		
BATTERY SYSTEM..... 69		
BATTERY SYSTEM..... 69		
MASTER BATTERY SWITCH..... 69		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
BATTERY COMPARTMENTS	69	
JUMPER STUDS	70	
POWER CONVERTER / BATTERY CHARGERS.....	70	
KUSSMAUL AUTO EJECT FOR IRT SHORELINE.....	70	
SUB FEED CIRCUIT BREAKER BOX - IRT SHORELINE	71	
ALTERNATOR.....	71	
ELECTRONIC LOAD MANAGER	71	
SEQUENCER.....	72	
SWITCH, COMMAND ZONE DISPLAY	72	
HEADLIGHTS.....	72	
DIRECTIONAL LIGHTS.....	73	
INTERMEDIATE LIGHT.....	73	
CAB CLEARANCE/MARKER/ID LIGHTS	73	
FRONT CAB SIDE DIRECTIONAL LIGHTS	73	
REAR CLEARANCE/MARKER/ID LIGHTING.....	73	
REAR FMVSS LIGHTING.....	74	
LICENSE PLATE BRACKET.....	74	
LIGHTING BEZEL.....	74	
BACK-UP ALARM.....	74	
CAB PERIMETER SCENE LIGHTS.....	74	
PUMP HOUSE PERIMETER LIGHTS	75	
BODY PERIMETER SCENE LIGHTS.....	75	
STEP LIGHTS	75	
12 VOLT LIGHTING.....	75	
12 VOLT LIGHTING.....	75	
12 VOLT LIGHTING.....	76	
12 VOLT LIGHTING.....	76	
12 VOLT LIGHTING.....	76	
HOUSING TO MOUNT RECESSED LIGHT ONTO A HORIZONTAL SURFACE	76	
DECK LIGHTS.....	76	
HOSE BED LIGHTS	76	
WALKING SURFACE LIGHTS.....	77	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
SPECIAL WATER TANK 77		
SLEEVE, PLUMBING, THROUGH TANK 78		
WATER TANK RESTRAINT 78		
HOSE BED 78		
HOSE BED DIVIDER 79		
REINFORCEMENT, HOSEBED DIVIDERS 79		
NOTCH 79		
HOSE BED COVER 79		
RUNNING BOARDS 79		
TAILBOARD 80		
REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL 80		
REAR TOW EYES 80		
REAR TOW BAR 80		
COMPARTMENTATION 80		
UNDERBODY SUPPORT SYSTEM 81		
AGGRESSIVE WALKING SURFACE 81		
LOUVERS 82		
TESTING OF BODY DESIGN 82		
LEFT SIDE COMPARTMENTATION 82		
RIGHT SIDE COMPARTMENTATION 83		
SIDE COMPARTMENT ROLLUP DOOR(S) 83		
REAR COMPARTMENTATION 84		
ROLLUP REAR COMPARTMENT DOOR 84		
DOOR GUARD 85		
ROLLUP DOOR GUARD 85		
COMPARTMENT LIGHTING 85		
MOUNTING TRACKS 85		
ADJUSTABLE SHELVES 85		
SLIDE-OUT FLOOR MOUNTED TRAY 85		
EQUIPMENT MOUNTING SYSTEM 86		
HIGH RISE PACK CURVED MOUNT(S) 86		
RUB RAIL 86		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
BODY FENDER CROWNS.....	86	
BODY FENDER LINER.....	86	
HARD SUCTION HOSE.....	86	
HANDRAILS.....	86	
HANDRAILS.....	87	
AIR BOTTLE STORAGE (Double).....	87	
EXTENSION LADDER.....	87	
ROOF LADDER.....	87	
LADDER STORAGE.....	87	
FOLDING LADDER.....	87	
FOLDING LADDER STORAGE.....	88	
PIKE POLE PROVIDED BY FIRE DEPARTMENT.....	88	
PIKE POLE STORAGE.....	88	
6' PIKE POLE PROVIDED BY FIRE DEPARTMENT.....	88	
PIKE POLE STORAGE.....	88	
REAR FOLDING STEPS.....	88	
PUMP COMPARTMENT.....	88	
PUMP MOUNTING.....	89	
LEFT SIDE PUMP CONTROL PANELS.....	89	
IDENTIFICATION TAGS.....	89	
NOTCH CARGO COMPARTMENT SIDESHEET.....	89	
MIDSHIP FIRE PUMP.....	90	
PUMP PACKING.....	91	
PUMP TRANSMISSION.....	91	
PUMPING MODE.....	91	
AIR PUMP SHIFT.....	91	
TRANSMISSION LOCK-UP.....	92	
AUXILIARY COOLING SYSTEM.....	92	
INTAKE RELIEF VALVE - PUMP.....	92	
PRESSURE CONTROLLER.....	92	
PRIMING PUMP.....	92	
PUMP MANUALS.....	92	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
PLUMBING, STAINLESS STEEL AND HOSE 93		
MAIN PUMP INLETS 93		
SHORT SUCTION TUBE(S) 93		
INLET VALVES WITH INTAKE RELIEF VALVE 93		
MAIN PUMP INLET CAP 94		
VALVES..... 94		
INLET CONTROL 94		
LEFT SIDE INLET..... 94		
RIGHT SIDE INLET 94		
FRONT INLET 94		
FRONT INLET CONTROL 95		
FRONT INLET INTAKE RELIEF VALVE 95		
FRONT INLET PIPING 95		
FRONT INLET CAP 95		
INLET BLEEDER VALVE..... 95		
TANK TO PUMP..... 95		
TANK REFILL 96		
DISCHARGE OUTLET CONTROLS 96		
SWING CONTROLS..... 96		
LEFT SIDE DISCHARGE OUTLETS 96		
LEFT SIDE OUTLET ELBOWS..... 96		
RIGHT SIDE DISCHARGE OUTLETS 96		
RIGHT SIDE OUTLET ELBOWS 96		
LARGE DIAMETER DISCHARGE OUTLET 96		
LARGE DIAMETER OUTLET ELBOWS 97		
FRONT DISCHARGE OUTLET 97		
REAR DISCHARGE OUTLET..... 97		
REAR OUTLET ELBOWS..... 97		
FRONT OF HOSE BED DISCHARGE OUTLET 97		
DISCHARGE CAPS/ INLET PLUGS 97		
OUTLET BLEEDER VALVE..... 97		
DELUGE RISER 98		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

		Bidder Complies	
		Yes	No
MONITOR.....	98		
NOZZLE, DELUGE	98		
BOOSTER HOSE REEL	98		
HOSE REEL BLOWOUT	99		
MODIFY REEL PAYOUT.....	99		
FOAM SYSTEM.....	99		
PUMP PANEL CONFIGURATION	99		
PUMP AND GAUGE PANEL.....	99		
PUMP ACCESS.....	99		
Right Side Panel	99		
Panel Fastener.....	99		
PUMP COMPARTMENT LIGHT	99		
THROTTLE READY GREEN INDICATOR LIGHT	100		
OK TO PUMP INDICATOR LIGHT.....	100		
VACUUM AND PRESSURE GAUGES	100		
PRESSURE GAUGES.....	100		
WATER LEVEL GAUGE	100		
LIGHT SHIELD	101		
AIR HORN SYSTEM.....	101		
Air Horn Location	101		
AIR HORN CONTROL.....	101		
ELECTRONIC SIREN.....	101		
SPEAKER.....	102		
AUXILIARY MECHANICAL SIREN	102		
MECHANICAL SIREN CONTROL	102		
CAB ROOF LIGHTBAR	102		
FRONT ZONE LOWER LIGHTS.....	103		
SIDE ZONE LOWER LIGHTING.....	103		
SIDE WARNING LIGHTS	104		
REAR ZONE LOWER LIGHTING	104		
REAR WARNING LIGHTS.....	104		
REAR OF HOSEBED WARNING LIGHTS.....	104		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

		Bidder Complies	
		Yes	No
120 VOLT RECEPTACLE	105		
120 VOLT RECEPTACLE	105		
120 VOLT RECEPTACLE	105		
120 VOLT RECEPTACLE	105		
120 VOLT RECEPTACLE	106		
120 VOLT RECEPTACLE	106		
LOOSE EQUIPMENT	106		
NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT	106		
SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT	107		
DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT	108		
WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT	108		
FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT	108		
PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT	108		
PAINT	108		
PAINT - ENVIRONMENTAL IMPACT	109		
CAB TWO-TONE PAINT.....	110		
BODY PAINT	110		
GALVANIZED CHASSIS FRAME ASSEMBLY	110		
PAINT, FRONT WHEELS	110		
PAINT, REAR WHEELS	110		
AXLE HUB PAINT.....	110		
COMPARTMENT INTERIOR PAINT.....	110		
REFLECTIVE BAND PROVIDED BY FIRE DEPARTMENT.....	110		
REAR CHEVRON STRIPING	111		
CAB DOOR REFLECTIVE STRIPE	111		
FIRE APPARATUS PARTS MANUAL.....	111		
Service Parts Internet Site.....	111		
CHASSIS SERVICE MANUALS	111		
CHASSIS OPERATION MANUAL	112		
ONE (1) YEAR MATERIAL AND WORKMANSHIP.....	112		
ENGINE WARRANTY.....	112		
STEERING GEAR WARRANTY	112		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
FIFTY (50) YEAR STRUCTURAL INTEGRITY	112	
FRONT AXLE WARRANTY	112	
REAR AXLE WARRANTY	112	
ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY	112	
TEN (10) YEAR STRUCTURAL INTEGRITY	113	
TEN (10) YEAR PRO-RATED PAINT AND CORROSION	113	
FIVE (5) YEAR MATERIAL AND WORKMANSHIP	113	
COMPARTMENT LIGHT WARRANTY	113	
TRANSMISSION WARRANTY	113	
TRANSMISSION COOLER WARRANTY.....	113	
WATER TANK WARRANTY	113	
TEN (10) YEAR STRUCTURAL INTEGRITY	113	
ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY.....	114	
PUMP WARRANTY	114	
TEN (10) YEAR PUMP PLUMBING WARRANTY.....	114	
TEN (10) YEAR PRO-RATED PAINT AND CORROSION	114	
VEHICLE STABILITY CERTIFICATION.....	114	
ENGINE INSTALLATION CERTIFICATION.....	114	
POWER STEERING CERTIFICATION	114	
CAB INTEGRITY CERTIFICATION	114	
Roof Crush.....	115	
Side Impact.....	115	
Frontal Impact.....	115	
Additional Frontal Impact.....	115	
CAB DOOR DURABILITY CERTIFICATION.....	115	
WINDSHIELD WIPER DURABILITY CERTIFICATION.....	115	
ELECTRIC WINDOW DURABILITY CERTIFICATION.....	115	
SEAT BELT ANCHOR STRENGTH.....	116	
SEAT MOUNTING STRENGTH.....	116	
PERFORMANCE CERTIFICATIONS.....	116	
Cab Air Conditioning	116	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

		Bidder Complies	
		Yes	No
	Cab Defroster.....	116	
	Cab Auxiliary Heater	116	
	AMP DRAW REPORT	116	

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<u>SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER</u>		
Sealed bids will be received by Ann Arbor Fire Department for the furnishing of all necessary labor, equipment and material for the Fire Apparatus and other equipment as outlined in the following specifications.		
<u>INTENT OF SPECIFICATIONS</u>		
It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.		
Images and illustrative material in this specification 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.		
<u>INSTRUCTIONS TO BIDDERS</u>		
The purchaser's standards for bidding automotive fire apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. Omissions and variations shall result in immediate rejection of the bid.		
Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Furthermore, in order to insure fair, ethical, and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).		
If a bidder represents more than one fire apparatus company or brands of apparatus, they must only bid the top of the line that meets specification.		
Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified.		
Any apparatus manufacturer or their parent company who has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufactures shall be immediately rejected (no exception).		
Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods, and equipment proposed to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be sufficient. An exception to this requirement shall not be acceptable.		
In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.		
The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of bid proposal specifications, or who photo copies and		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>submits these specifications as their own construction details will be considered non responsive. This shall render such proposal ineligible for award.</p> <p>The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected.</p> <p>THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.</p> <p><u>EXCEPTIONS</u></p> <p>These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore exceptions to the specifications may not be accepted.</p> <p>Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.</p> <p>If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected.</p> <p>Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary, and entitled "EXCEPTIONS TO SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.</p> <p>Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).</p> <p>Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).</p> <p><u>GENERAL DESIGN AND CONSTRUCTION</u></p> <p>The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.</p> <p>All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions.</p> <p><u>QUALITY AND WORKMANSHIP</u></p> <p>All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for Standardization (ISO) specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.</p> <p>To demonstrate the quality of the product and service, each bidder shall provide a list of at least ten (10) fire departments/municipalities in the region that have bought a second time from the representing dealer. An exception to this requirement shall not be acceptable.</p> <p><u>DELIVERY</u></p> <p>Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under its own power - rail or truck freight shall not be acceptable. 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.</p> <p><u>MANUALS AND SERVICE INFORMATION</u></p> <p>The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the drivers compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><u>SAFETY VIDEO</u></p> <p>Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.</p> <p><u>PERFORMANCE TESTS AND REQUIREMENTS</u></p> <p>A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axle shall run quietly and be free</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:</p> <p>A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.</p> <p>B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.</p> <p>C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor vehicle Safety Standards (FMVSS) 121.</p> <p>D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u></p> <p>In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.</p> <p><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u></p> <p>TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.</p> <p>The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within one hundred fifty (150) miles of the Fire Department.</p> <p><u>SERVICE AND WARRANTY SUPPORT (MANUFACTURER)</u></p> <p>To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.</p> <p>The manufacturer shall stock 1 million parts equating to \$5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>shall house the inventory in a dedicated facility, with a dedicated shipping area that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.</p> <p>Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.</p> <p>The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.</p> <p>The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.</p> <p>The manufacturer must be capable of providing both in-house and on-site service for the apparatus.</p> <p>The manufacturer shall offer regional factory hands-on repair and maintenance training classes.</p> <p>The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale.</p> <p><u>LIABILITY</u></p> <p>The successful bidder shall 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.</p> <p><u>INSURANCE PROVIDED BY BIDDER</u></p> <p><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></p> <p>The successful bidder shall, 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:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Personal and Advertising Injury\$1,000,000</p> <p>General Aggregate\$2,000,000</p> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>COMMERCIAL AUTOMOBILE LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage shall be written on a Commercial Automobile liability form:</p> <p>Each Accident Combined Single Limit:\$1,000,000</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The successful bidder shall, 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:</p> <p>Aggregate:\$3,000,000</p> <p>Each Occurrence:\$3,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.</p> <p>All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as certificate holder.</p> <p><u>INSURANCE PROVIDED BY MANUFACTURER</u></p> <p><u>PRODUCT LIABILITY INSURANCE</u></p> <p>The manufacturer shall, 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:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form. The manufacturer's policy shall include the owner as additional insured when required by written contract between the Owner and a Pierce authorized dealer.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The manufacturer shall, 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:</p> <p>Each Occurrence:\$25,000,000</p> <p>Aggregate:\$25,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.</p> <p>All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as the certificate holder.</p> <p><u>SINGLE SOURCE MANUFACTURER</u></p> <p>Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.</p> <p>The bidder shall state the location of the factory where the apparatus is to be built.</p> <p><u>NFPA 2016 STANDARDS</u></p> <p>This unit shall comply with the NFPA standards effective January 1, 2016, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.</p> <p>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 shall be identified on the customer approval print and are</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>shown as approximate. Actual location(s) shall 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.</p> <p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company shall designate, in writing, who is qualified to witness and certify test results.</p> <p><u>NFPA COMPLIANCY</u> Apparatus proposed by the bidder shall 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 shall be indicated in the proposal as "non-NFPA".</p> <p><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u> To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. 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).</p> <p>A placard shall 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.</p> <p><u>PUMP TEST</u> The pump shall 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 shall be forwarded to the Fire Department.</p> <p><u>GENERATOR TEST</u> If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.</p> <p><u>BREATHING AIR TEST</u> If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, <i>Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection</i>.</p> <p><u>NEW VEHICLE ORIENTATION</u> A qualified person from the manufacturer or sales agency shall be available at the discretion of the purchaser for orientation of the apparatus maintenance, chassis, pump and any other orientation required for equipment delivered. Trainer must have a minimum of 10 years in the repair, service and orientation of</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Fire Apparatus. Trainer shall be certified by the fire apparatus manufacture they represent. Proof of certification shall be made available upon request.</p> <p>Orientation for the new fire apparatus shall be provided by the bidder. The orientation shall consist of three (3) session(s) for the Ann Arbor Fire Department. Each session shall be up to a maximum of eight (8) hours (Depending on class size). Session content shall include classroom and/or hands on orientation with the new vehicle. A session is considered to be each time the training material is presented by the instructor regardless of the total length of the individual session. The Fire Chief and the instructor shall agree on the class session(s) duration and required content. The orientation shall take place at the Fire Department. If more orientation sessions (classes) are required than specified in the specifications, the additional expense shall be billed to and paid for by the Fire Department.</p> <p><u>LICENSED DEALER</u> The dealer representing a fire apparatus manufacturer in the State of Michigan, shall be licensed to do business in the State of Michigan. The license must be issued to the bidder representing manufacturer as listed on the proposal submitted. Licenses submitted that are issued to a third party will not be accepted.</p> <hr/> <p>Dealer Name as provided on License</p> <p><u>THIRD-PARTY WEEKLY PROGRESS REPORTS</u> The successful bidder shall also provide weekly photographic progress reports and inspection services, provided by an independent third party. These progress reports and inspection services shall begin once the apparatus starts the manufacturing and assembly process. The inspection service will NOT warranty any aspect of the apparatus operability or design, but shall confirm that the options on the apparatus at final inspection reasonably comport to those in the specification. In addition, after the final inspection has been completed by the customer, the third party inspector shall also review all items noted in the inspection for completion prior to the apparatus leaving the manufacturing facility for delivery local service area for pre-delivery service. ANY BIDDER WHO DOES NOT COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED NON-CONFORMING AND NOT CONSIDERED.</p> <p><u>DEALERSHIP LONGEVITY</u> Bids shall only be accepted from vendors that are represented by a dealership located in this state. The dealership must maintain a service facility and mobile service vehicles within the state of Michigan. Bids from manufacturers without dealer representation and service facilities in the state shall not be acceptable and shall result in immediate rejection of bid. The dealer shall have <u>continually represented</u> the manufacturer for a minimum of ten (10) years. This is required to show years of operation of both the manufacturer and the dealer and the continuous relationship between the two parties. This requirement also shows that the dealer understands the entire product line of the manufacturer for both sales and service. No Exceptions will be accepted for this requirement.</p> <p><u>INSPECTION TRIP(S)</u> The bidder shall provide two (2) factory inspection trip(s) for three (3) customer representative(s). The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals shall be the responsibility of the bidder.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>BID BOND</u></p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond to accompany their bid. This bid bond shall 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 shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall 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.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall 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 shall prevail.</p> <p><u>PERFORMANCE BOND NOT REQUESTED</u></p> <p>A performance bond shall not be included. If requested at a later date, one shall be provided to you for an additional cost and the following shall apply:</p> <p>The successful bidder shall 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 shall 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.</p> <p>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 Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond shall 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 shall not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>APPROVAL DRAWING</u> A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.</p> <p>A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.</p> <p><u>DRAWING, BUMPER EXTENSION TOP VIEW</u> On the sales drawing a top view of the bumper extension shall be provided. The top view shall be a reference only of the options in the order.</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u> Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><u>CHASSIS</u> Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall 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.</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 174.50".</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 44,000 lbs.</p> <p><u>FRAME</u> The chassis frame shall 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 shall be heat-treated steel measuring 10.25" x 3.50" x 0.375".</p> <p>Each rail shall have a section modulus of 16.00 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,921,069 inch-pounds.</p> <p><u>FRONT AXLE</u> The front axle shall be a reverse "I" beam type with inclined king pins. It shall be a Dana axle, Model D-2000F, with a rated capacity of 20,000 lb.</p> <p><u>FRONT SUSPENSION</u> The front springs shall be a Standens, three (3)-leaf, taper leaf design, 54.00" long x 4.00" wide, with a ground rating of 20,000 lb.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin. The top leaf shall also wrap the rear spring hanger pin. Both the front and rear eyes shall be Berlin style wraps that shall place the eyes in the horizontal plane within the main leaf. This shall reduce bending stress from acceleration and braking.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><u>SHOCK ABSORBERS</u> Heavy-duty telescoping shock absorbers shall be provided on the front axle.</p> <p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear® 315/80R22.50 radials, 20 ply G289 WHA tread, rated for 20,400 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 22.50" x 9.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>REAR AXLE</u> The rear axle shall be a Dana, Model S23-172, with a capacity of 24,000 lb.</p> <p><u>TOP SPEED OF VEHICLE</u> A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 68 mph.</p> <p><u>REAR SUSPENSION</u> The rear suspension shall be Standens, semi-elliptical, 3.00" wide x 53.00" long, 12-leaf pack with a ground rating of 24,000 lb. The spring hangers shall be castings.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin, and the rear of the spring shall be a slipper style end that shall ride in a rear slipper hanger. To reduce bending stress due to acceleration and braking, the front eye shall be a berlin eye that shall place the front spring pin in the horizontal plane within the main leaf.</p> <p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle(s).</p> <p><u>REAR TIRES</u> Rear tires shall be four (4) Goodyear® 12R22.50 radials, 16 ply all season G622 RSD tread, rated for 27,120 lb maximum axle load and 75 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 8.25" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u> All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>TIRE PRESSURE MANAGEMENT</u></p> <p>There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.</p> <p>The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.</p> <p>Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.</p> <p><u>FRONT HUB COVERS</u></p> <p>Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><u>CHROME LUG NUT COVERS</u></p> <p>Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><u>MUD FLAPS</u></p> <p>Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>WHEEL CHOCKS PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires two (2) or more wheel chocks mounted in readily accessible locations, that together shall hold the apparatus, when loaded to its GVWR or GCWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released.</p> <p>The wheel chocks are not on the apparatus as manufactured. The fire department shall provide and install these wheel chocks.</p> <p><u>WHEEL CHOCK BRACKETS PROVIDED BY FIRE DEPARTMENT</u></p> <p>The wheel chock brackets are not on the apparatus as manufactured. The fire department shall provide and install the wheel chock brackets.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u></p> <p>The vehicle shall be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS shall provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><u>BRAKES</u></p> <p>The service brake system shall be full air type by Bendix®.</p> <p>Front brakes shall be Model ADB22X™, disc type with automatic pad wear adjustment and 17.00" rotors for improved stopping distance.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

Bidder Complies	
Yes	No

The rear brakes shall be Bendix®, Model ES1657D, 16.50" x 7.00" cam operated with automatic slack adjusters.

BRAKE SYSTEM AIR COMPRESSOR

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

BRAKE SYSTEM

The brake system shall include:

- Brake treadle valve
- Heated automatic moisture ejector on air dryer
- Total air system minimum capacity of 4,272 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, with an automatic spring brake application at 40 psi
- A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)
- 1/4 turn drain valves on each air tank

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

To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).

BRAKE SYSTEM AIR DRYER

The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.

BRAKE LINES

Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.

AIR INLET

One (1) air inlet with 3D series male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located on the driver side exterior of cab, above the front wheel, behind the cab door, recessed into the cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female fitting shall also be provided with the loose equipment.

ENGINE

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

Make:	Cummins
Model:	L9

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

Bidder Complies	
Yes	No

Power:	450 hp at 2100 rpm
Torque:	1250 lb-ft at 1400 rpm
Governed Speed:	2200 rpm
Emissions Level:	EPA 2021
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	543 cubic inches (8.9L)
Starter:	Delco 39MT™
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.

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

HIGH IDLE

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

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

IDLE REDUCTION, BATTERY MANAGEMENT SYSTEM, LITHIUM ION

Command Zone™ electronics system is CAN interfaced with the Battery Management System (BMS) controller for a fully integrated Idle Reduction Technology (IRT) system.

The BMS is designed for use with matching lithium-ion battery pack.

The BMS provides numerous system integration options facilitating temperature, voltage, current and State of Charge monitoring for the batteries.

The BMS manages battery module configurations including isolation measurement.

The IRT system will use a lithium-ion battery pack connected in parallel to lead acid batteries for full truck integration with standard wiring configurations.

BMS FEATURES

- Monitors lithium-ion battery pack cell voltage, temperature, stack voltage, current, State of Charge, errors, contactor status
- BMS manages the lithium-ion battery pack
- Charger control via multiple CAN bus communications. J1939 for Command Zone™ and an isolated battery high speed CAN (250 kpbs) bus connected directly to lithium-ion battery pack.
- Multiple and configurable digital and analog I/O for shore power charge enable, ignition, switched battery, engine start.

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Automatic lithium-ion battery pack balance control • Controls up to 4 contactors with configurable actions • System ground isolation verification • Outputs State of Charge and warning messages to the Command Zone™ system. • BMS controller shall control contactors to meet requirements when the lithium-ion battery pack charges and discharges. <p><u>LITHIUM-ION BATTERY PACK</u> The vehicle shall be equipped with lithium-ion battery pack with the following features.</p> <ul style="list-style-type: none"> • Automatic cell operation and balancing • Temperature monitoring of cells • Thread bolts • Maintenance free • No hydrogen generation or gassing • Voltage, nominal 12.8 V • Capacity @ 25C greater than 100 Ah • Discharge Cont. greater than 100 A • Low voltage discharge cutoff protection • Delivers stable voltage during discharge and increases equipment performance • Provides longer life cycle than lead acid batteries • Multiple levels of protection operation outside of current, voltage, and temperature limits with no thermal runaway, no corrosive acid leaks and no explosive gassing • Environmentally safe because it does not contain toxic metals such as cobalt, lead, cadmium or any corrosive acids or alkalis • Fuse protection for each lithium-ion battery pack <p><u>LOCATION</u> The BMS, contactors and lithium-ion battery pack shall be mounted into the standard right-side battery box eliminating the need to take up valuable pump or body compartment space and provide easy access for maintenance.</p> <p><u>LEAD ACID BATTERY AMPERAGE MONITORING</u> The vehicle shall require one J1939 CAN based amperage monitoring system to broadcast the current flow of the lead acid batteries to the BMS and Command Zone™ III system or greater system.</p> <p><u>LOCATION</u> The Lead Acid Battery Amperage Monitoring system shall be mounted near the lead acid batteries.</p> <p><u>CAB TEMPERATURE SENSOR</u> A J1939 CAN based temperature sensor shall be mounted in the cab behind the officer seat to be integrated into the Command Zone™ system for IRT cab HVAC control.</p> <p><u>ENGINE INTERLOCK</u> Additional Command Zone™ system I/O and relays are required for BMS control and engine start/stop function.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>IDLE REDUCTION, LITHIUM-ION, SYSTEM</u></p> <p>The Command Zone™ electronics system auto shut down / auto start system shall reduce engine idle time by allowing a parked, non-running apparatus to operate NFPA 1901 warning, DOT and user defined Mission Critical options by utilizing a fully-charged lithium-ion battery pack to run at 150 amps for a minimum of one hour. This time shall be based on the vehicle's factory configuration.</p> <p>The system shall not inhibit additional loads outside or those used to calculate its operational performance.</p> <p>The system shall estimate its remaining capacity based on the load it is experiencing. This estimation shall be presented on the vehicle display and through the vehicle's broadcasted web page.</p> <p>The system shall monitor multiple conditions and react accordingly. The conditions monitored include battery voltage, cab temperature, engine temperature. These component conditions shall initiate certain actions depending on the threshold changes and settings of the system. The primary focus of the system shall be to ensure the vehicle has enough battery capacity to start at any time.</p> <p>The information center is intended for use on mobile severe duty emergency vehicles. The display shall be usable by individuals wearing protective clothing including heavy gloves and in a wet and dirty environment.</p> <p><u>SYSTEM REQUIREMENTS</u></p> <p>The vehicle shall require the Command Zone™ information center and other options.</p> <p><u>OPERATIONAL SCENARIO</u></p> <p>The following is the expected nominal operation of the system:</p> <ul style="list-style-type: none"> • System is enabled or disabled by system maintainer by signing into the administrator screen of the information center which becomes the default setting • Apparatus arrives on scene • Parameters are met for engine shutdown • Engine is shutdown • System begins monitoring lithium-ion battery pack State of Charge (SOC) • System activates heating or cooling system (if applicable) • lithium-ion battery pack SOC falls below threshold • Engine auto starts <p><u>SYSTEM OPERATION</u></p> <p>Vehicle engine shall shut off after 5 minutes of idle. This shall allow for driveline components, such as the engine turbo, to return to an idle condition prior to shut down.</p> <p>IRT can be activated manually prior to 5 minute shut off using the information center controls.</p> <p>Vehicle electronics shall remain operational:</p> <ul style="list-style-type: none"> • NFPA and DOT Lighting • User defined Mission Critical 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> Heater system and air conditioning requires vehicle engine operation. (Dependent on HVAC system installed). The vehicle engine shall start automatically when reserve power has been depleted. <p><u>SYSTEM INTERLOCKS</u> The following conditions must be met to arm the auto shutdown / start system:</p> <ul style="list-style-type: none"> Battery switch on Ignition on (Ignition must be on to turn on the Battery Management System (BMS) system) Parking brake is applied Chassis transmission is in neutral Cab fully engaged into lockdown latches Engine at idle No PTO activity No pump activity Service brake not applied Shore power is not energized <p><u>CURRENT SETTING</u> The operator shall have the capability to change the current setting of the IRT system. This shall override the default setting for that ignition cycle only if the IRT system is enabled from the administration screen. The operator shall not be able to enable the IRT system, if high idle is enabled.</p> <p><i>Note: In order for High Idle switch in cab to be enabled, the IRT system shall be required to be disabled by the operator. All other high idle functions work as designed with exception that the cab high idle switch and OK to Engage High Indicator are disabled when IRT is enabled.</i></p> <p><u>AUTO SHUTDOWN</u> The chassis diesel engine shutdown shall be activated when all the following conditions have been met for five (5) consecutive minutes:</p> <ul style="list-style-type: none"> Parking brake engaged Transmission is in neutral lithium-ion battery pack SOC is sufficient Service brake is not pressed Water pump is inactive (If equipped) Engine is at idle Aerial Master/PTO is inactive (If equipped) PTO/Generator is inactive (If equipped) <p>When the engine is shut down due to the operational mode interlocks being met, the display shall bring forward the IRT screen.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>AUTO SHUTDOWN SEQUENCE</u></p> <p>60-Second Mark 60 seconds before the engine is auto shutdown, there shall be a service notification on the information center. The information center shall auto-navigate to the IRT screen when this occurs.</p> <p>30-Second Mark 30 seconds before the engine is auto shutdown, there shall be a service notification on the information center.</p> <p>10-Second Mark 10 seconds before the engine is auto shutdown, there shall be a service notification on the information center.</p> <p>0-Second Mark At the 0-second mark, engine shall be commanded to shut down. The information center shall auto-navigate to the IRT screen when this occurs.</p> <p><u>AUTO START</u> The following interlock conditions shall initiate the auto-start sequence:</p> <ul style="list-style-type: none"> • lithium-ion battery pack State of Charge is depleted • Battery System Voltage is below 12.0 V • Lead acid batteries are supporting more than 20A of the load 1 minute 30 seconds after engine is off • Cab cooling is required • Cab heating is required • Water pump is active (If equipped) • Aerial Master/PTO is active (If equipped) • PTO/Generator is active(If equipped) • There is a reported issue with the lithium-ion Battery Management System (BMS) <p><u>AUTO START SEQUENCE</u></p> <p>60-Second Mark 60 seconds before the engine is auto start, there shall be a service notification on the information center.</p> <p>30-Second Mark 30 seconds before the engine is auto start, there shall be a service notification on the information center.</p> <p>10-Second Mark 10 seconds before the engine is auto start, there shall be a service notification on the information center.</p> <p>0-Second Mark</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>At the 0-second mark, engine shall be commanded to start.</p> <p><u>ENGINE AUTO STARTING</u></p> <p>Vehicle Monitoring</p> <ul style="list-style-type: none"> The vehicle shall monitor engine RPM to ensure the engine has successfully started. If engine RPM is greater than 600, the engine shall be considered to have been started. <p>Cranking Cycles</p> <ul style="list-style-type: none"> Each engine crank shall be a maximum of 5 seconds. There shall be a delay of 10 seconds before another attempt can be made. The engine shall attempt to crank a maximum of 3 cycles. <p>Failed Start</p> <ul style="list-style-type: none"> If the truck fails to start, the IRT system shall enter a faulted state, and a service notification shall occur. In the faulted state all loads shall be shut off, to allow the user to make a final attempt at starting. <p>The controller shall exit the IRT operation without starting the engine, if any of the following are true:</p> <ul style="list-style-type: none"> Ignition is off Shore power is energized Cab lock down latches become disengaged Park brake is released Transmission is not in neutral Comm Loss with engine Comm Loss with transmission Comm Loss with CZ Related modules Comm Loss with Lead Acid current sensor Comm Loss with lithium-ion battery pack BMS IRT mode is disabled <p>"Interlocks not met" shall be displayed on the IRT mode screen in this condition.</p> <p><u>QUICK START</u></p> <p>The system shall immediately start the engine if any of the following conditions are true when in IRT mode:</p> <ul style="list-style-type: none"> Service brake is pressed for 3 seconds Engine start switch is activated <p><u>CAB TEMPERATURE CONTROL</u></p> <p>The IRT system shall allow the operator to enable and disable control for HVAC while in the IRT state. The operator shall be able to select a temperature range for the system to maintain. While the IRT system is maintaining the cabin temperature range, it shall override user HVAC inputs.</p> <p><u>CAB TEMPERATURE - HVAC COOLING</u></p> <p>Cooling setpoints shall be 80 deg F, 75 deg F, and 70 deg F</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>If the cabin temperature rises 5 degrees above the setpoint, the IRT system shall initiate the 60 second startup sequence to start the engine. While the engine is running, the IRT system shall turn blowers on at 100% and command maximum cooling.</p> <p>When cabin temperature falls 5 degrees below the setpoint, the IRT system shall initiate the 60 second shutdown sequence.</p> <p><u>CAB TEMPERATURE - HVAC HEATING</u> Heating setpoints shall be 55 deg F, 60 deg F, and 65 deg F</p> <p>If the cabin temperature falls 5 degrees below the setpoint, the IRT system shall initiate the 60 second startup sequence to start the engine. While the engine is running, the IRT system shall turn blowers on at 100% and command maximum heating.</p> <p>When cabin temperature rises 5 degrees above the setpoint, the IRT system shall initiate the 60 second shutdown sequence.</p> <p><u>TOUCH SCREEN OPERATION</u> Virtual Switch</p> <p>No virtual switch panel operations shall be allowed while in IRT mode. Overhead switch panels shall still functional while the auto start system is active. This shall allow the NFPA warning, DOT, and scene lights to be turned off or on.</p> <p><u>DEBUGGING COMMAND ZONE</u> Debugging shall not be allowed while the IRT is "Operational".</p> <p><u>COMMAND ZONE™ INFORMATION SCREEN OPERATION</u> Once the IRT system is enabled and interlock requirements are met the IRT system mode screen shall be displayed.</p> <p>Two control switches shall appear on the display. Indicators and colors are built into the firmware of the system and cannot be changed.</p> <p>Virtual IRT enable switch shall be located on the left-hand side of the screen.</p> <p>The inner green ring shall default to ON when the system is enabled.</p> <p>The IRT can be activated and deactivated depressing the center of the switch.</p> <p>The IRT can only be disabled for the current ignition switch cycle and shall reactivate to the ON state during the next cycle.</p> <p>The outer segments of the IRT switch show the State of Charge (SOC). All segments green indicates the lithium-ion battery pack is at a full state of charge. Segment colors shall turn off clockwise as the SOC of the battery pack is decreased. When one remaining segment is shown it shall turn amber showing the SOC is low. If the truck is in IRT mode with engine off, it shall auto start the engine and shall not re-enter IRT mode until SOC is 80% or higher.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Virtual IRT shutdown switch is located below the IRT switch and can be utilized to enter IRT immediately when IRT interlock requirements are met prior to the timed interval to shut the engine off.</p> <p>Virtual bar graph below the IRT switch shall indicate the amperage draw from the lithium-ion battery pack in the IRT mode for all lights and or loads activated with the engine off.</p> <p>Virtual bar graph displays a bar in the center of the graph that shall indicate the truck specific amperage requirements from the report for NFPA, DOT and user defined mission critical options selected to operate in the IRT mode. Activations of additional loads shall show the green bar go above the center point. The bar used only as a gauge to view that amperage usage is higher than reported and shall decrease time with engine in IRT mode. Operator may activate loads as needed through the fully integrated system.</p> <p>Virtual cab temperature control switch shall be located on the right-hand side of the screen.</p> <p>The virtual cab temperature control switch inner green ring shall retain the previous setting when the system is enabled.</p> <p>The cab temperature switch can be activated and deactivated by depressing the switch center.</p> <p>Arrow buttons below the switch shall move the cab temperature switch left or right. There are three selections each for cooling or heating the cab. These ranges are set in firmware and cannot be modified.</p> <p>The bar graph below the cab temperature switch shall have a green indicator showing where the operator setpoint is selected.</p> <p>The operator shall have 3 cooling setpoints (80 deg F, 75 deg F, 70 deg F).</p> <p>The operator shall have 3 heating setpoints (55 deg F, 60 deg F, 65 deg F).</p> <p>Deactivation of the cab temperature switch shall increase the amount of IRT engine off time to maximum efficiency because the engine shall not have to start and stop as needed to keep the requested temperature range in the cab to meet operational requirements for each department.</p> <p><u>ENGINE BRAKE</u></p> <p>A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p> <p>The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.</p> <p>The engine brake shall activate when the system is on and the throttle is released.</p> <p>The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>CLUTCH FAN</u> A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.</p> <p><u>ENGINE AIR INTAKE</u> The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.</p> <p>The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible by tilting the cab.</p> <p><u>EXHAUST SYSTEM</u> The exhaust system shall be stainless steel from the turbo to the engine's aftertreatment device, and shall be 4.00" in diameter. The exhaust system shall include a single module aftertreatment device to meet current EPA standards. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><u>RADIATOR</u> The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.</p> <p>The radiator core shall have a minimum front area of 1060 square inches.</p> <p>Supply tank shall be made of heavy duty glass-reinforced nylon and the return tank shall be made of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.</p> <p>The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.</p> <p>The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall 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.</p> <p>Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>COOLANT LINES</u> Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p> <p>Hose clamps shall be stainless steel constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.</p> <p><u>FUEL TANK</u> A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps (no exception).</p> <p>A 0.75" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."</p> <p>A 0.50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u> A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, polished stainless steel door that is marked "Diesel Exhaust Fluid Only".</p> <p>The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.</p> <p>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p> <p><u>FUEL PRIMING PUMP</u> A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.</p> <p><u>TRANSMISSION</u> An Allison 5th generation, Model EVS 3000P, electronic torque converting automatic transmission shall be provided.</p> <p>The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

Bidder Complies	
Yes	No

Two (2) PTO openings shall be located on both sides of converter housing (positions 4 o'clock and 8 o'clock) as viewed from the rear.

A transmission temperature gauge with red light and audible alarm shall be installed on the cab dash.

TRANSMISSION SHIFTER

A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The transmission ratio shall be:

1st	3.49 to 1.00
2nd	1.86 to 1.00
3rd	1.41 to 1.00
4th	1.00 to 1.00
5th	0.75 to 1.00
R	5.03 to 1.00

TRANSMISSION COOLER

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

DRIVELINE

Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1710 universal joints.

The shafts shall be dynamically balanced before installation.

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

STEERING

Dual steering gear, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and Vickers® V20NF hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.

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

STEERING WHEEL

The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.

BUMPER

A one (1)-piece bumper manufactured from 0.25" formed steel with a 0.38" bend radius shall be provided. The bumper shall be a minimum of 10.00" high with a 1.50" top and bottom flange, and shall extend 19.00" from the face of the cab. The bumper shall be 95.28" wide with 45 degree corners and side plates. The bumper shall be metal finished and painted job color.

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>To provide adequate support strength, the bumper shall be mounted directly to the front of the C channel frame. The frame shall be a bolted modular extension frame constructed of 50,000 psi tensile steel.</p> <p><u>Gravel Pan</u> A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and the cab face. The pan shall be properly supported from the underside to prevent flexing and vibration.</p> <p><u>CENTER HOSE TRAY</u> A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension.</p> <p>The tray shall have a capacity of 100' of 1.75" double jacket cotton-polyester hose.</p> <p>Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><u>Center Hose Tray Restraint</u> There shall be one (1) pair of hose tray restraint straps located over the center mounted tray.</p> <p>The restraints shall be a pair of 2.00" wide black nylon straps with Velcro® fasteners provided. The strap(s) shall be used to secure the hose in the tray.</p> <p><u>TOW HOOKS</u> Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall 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 hooks shall not be used for lifting of the apparatus.</p> <p><u>FRONT BUMPER NOTCH</u> The front bumper shall be notched for recessing of the Q2B siren. The notch shall be designed so that the bumper is one continuous piece. The notch shall be welded in place for strength with a continuous top and bottom flange. All welds shall be metal finished for appearance. The siren shall be located driver side of the bumper.</p> <p><u>FRONT BUMPER NOTCH</u> The front bumper shall be notched for recessing of the front inlet. The notch shall be designed so that the bumper is one continuous piece. The notch shall be welded in place for strength with a continuous top and bottom flange. All welds shall be metal finished for appearance.</p> <p><u>ADJUSTABLE HOSE TRAY PARTITION</u> There shall be one (1) adjustable aluminum partition(s) provided in the bumper hose tray located to be determined by the fire department.</p> <p><u>CAB</u> The cab shall be designed specifically for the fire service and manufactured by the chassis builder.</p> <p>The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy duty design, constructed to the following minimal standards.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The cab shall 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 shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of two (2) 2.00" x 2.00" outer aluminum extrusions and two (2) 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.</p> <p>The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with two (2) triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 99.00". The crew cab section shall have a 10.00" raised roof, with an overall cab height of approximately 109.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.</p> <p>The floor to ceiling height inside the crew cab shall be 64.50" in the center and outboard positions.</p> <p>The crew cab floor shall measure 36.00" from the rear wall to the back side of the rear facing seat risers.</p> <p>The medium block engine tunnel, at the rearward highest point (knee level), shall measure 51.50" to the rear wall. The big block engine tunnel shall measure 41.50" to the rear wall.</p> <p>The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.</p> <p>The cab shall be a full tilt cab style.</p> <p>A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>CAB ROOF DRIP RAIL</u> For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof, and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.</p> <p><u>INTERIOR CAB INSULATION</u> The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><u>FENDER LINERS</u> Full circular inner fender liners in the wheel wells shall be provided.</p> <p><u>PANORAMIC WINDSHIELD</u> A one (1)-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of three (3) layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.</p> <p><u>WINDSHIELD WIPERS</u> Three (3) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements. The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>ENGINE TUNNEL</u> Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room. The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards. The engine tunnel shall be no higher than 17.00" off the crew cab floor (no exception).</p> <p><u>INTERIOR CREW CAB REAR WALL ADJUSTABLE SEATING (PATENT PENDING)</u> The interior rear wall of the crew cab shall have mounting holes every 2.75" to allow for adjustability of the forward facing crew cab seating along the rear wall. Seats shall be adjustable with use of simple hand tools allowing departments flexibility of their seating arrangement should their department needs change.</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u> The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u> A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Hydraulic pump shall have a manual override for backup in the event of electrical failure.</p> <p>Lift controls shall be located on the right side pump panel or front area of the body in a convenient location. A "cab unlocked" indicator light shall be located at the controls that shall indicate when the cab is not in the locked position for safe road travel.</p> <p>The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.</p> <p>The cab shall be locked down by a 2-point normally closed spring loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring loaded latch mechanisms shall return to the normally closed and locked position.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall 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 shall be disabled.</p> <p><u>GRILLE</u></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p> <p><u>DOOR JAMB SCUFFPLATES</u></p> <p>All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><u>SIDE OF CAB MOLDING</u></p> <p>Chrome molding shall be provided on both sides of cab.</p> <p><u>MIRRORS</u></p> <p>A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be heated and adjustable with remote control within reach of the driver.</p> <p><u>FRONT CROSS VIEW MIRROR</u></p> <p>An 8.00" diameter convex mirror shall be provided over the officer's side front corner of the cab. The mirror shall provide the driver with a view of the front bumper and the area several feet in front of the truck.</p> <p>The mirror housing, tubing, clamps, and hardware shall be constructed of corrosion resistant stainless steel.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>DOORS</u></p> <p>To enhance entry and egress to the cab, the forward cab door openings shall be a minimum of 37.50" wide x 63.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 73.25" high.</p> <p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.</p> <p>A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The finish of the door handle shall be chrome/black. The exterior handle shall be designed specifically for the fire service to prevent accidental activation, and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.</p> <p>Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome grab handle shall be provided on the inside of each cab door for ease of entry.</p> <p>A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.</p> <p>The bottom cab step at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.</p> <p><u>Door Panels</u></p> <p>The inner cab door panels shall be constructed out of brushed stainless steel.</p> <p><u>ELECTRIC OPERATED CAB DOOR WINDOWS</u></p> <p>All four (4) cab doors shall be equipped with electric operated windows with one (1) flush mounted automotive style switch on each door. The driver's door shall have four (4) switches, one (1) to control each door window.</p> <p>Each switch shall allow intermittent or auto down operation for ease of use. Auto down operation shall be actuated by holding the window down switch for approximately 1 second.</p> <p><u>CAB STEPS</u></p> <p>The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 25.00" wide, and the crew cab steps shall be 21.65" wide with a 10.00" minimum depth. The inside cab steps shall not exceed 16.50" in height.</p> <p>The vertical surfaces of the step well shall be aluminum treadplate.</p> <p><u>CAB EXTERIOR HANDRAILS</u> A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.</p> <p><u>STEP LIGHTS</u> There shall be six (6) white LED step lights with chrome housing installed for cab and crew cab access steps.</p> <ul style="list-style-type: none"> • One (1) light for the left access steps. • Two (2) lights for the left side crew cab access steps. • Two (2) lights for the right side crew cab access steps. • One (1) light for the right side access step. <p>In order to ensure exceptional illumination, each light shall 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.</p> <p>The lights shall be activated when the battery switch is on and the adjacent door is opened.</p> <p><u>FENDER CROWNS</u> Rubber fender crowns shall be provided around the cab wheel openings.</p> <p>Crowns shall be black.</p> <p><u>CREW CAB WINDOWS</u> One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 18.70" wide x 23.75" high.</p> <p><u>CAB DASH</u> The driver side dash, switch panel located to the right of the driver, and center console shall be constructed of aluminum and painted gray.</p> <p>The officer side dash shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of aluminum and painted to match the cab interior.</p> <p>The instrument gauge cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument gauge cluster.</p> <p><u>AIR BOTTLE HOLDERS</u> There shall be one (1) Zico, Model UH-5-30-3-SFPHS holder(s) provided. The bracket(s) shall be located in the forward facing EMS cabinet, on the drivers side of the partition.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>MOUNTING SYSTEM</u> There shall be four (4) section(s) of Pac Trac equipment mounting systems located On the back wall of the cab interior, two (2) each side, running the full height from the floor up. each section to be approx 62" long.</p> <p>Pac Trac mounts shall be certified by Pac Trac to meet the latest NFPA requirements for mounting of equipment inside the cab.</p> <p><u>MOUNTING PLATE ON ENGINE TUNNEL</u> Equipment installation provisions shall be installed on the engine tunnel.</p> <p>A 0.188" smooth aluminum plate shall be bolted to the top surface of the engine tunnel. The plate shall follow the contour of the engine tunnel and shall run the entire length of the engine tunnel. The plate shall be spaced off the engine tunnel 1.00" to allow for wire routing below the plate.</p> <p>The mounting surface shall be brushed aluminum.</p> <p><u>CAB INTERIOR</u> The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.</p> <p>The engine tunnel shall be painted aluminum to match the cab interior.</p> <p>For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.</p> <p>Headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.</p> <p>All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.</p> <p><u>CAB INTERIOR UPHOLSTERY</u> The cab interior upholstery shall be 36 oz dark silver gray vinyl.</p> <p><u>CAB INTERIOR PAINT</u> The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.</p> <p>The rear heater panels shall be painted black, vinyl textured paint.</p> <p><u>CAB FLOOR</u> The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>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.</p> <p><u>DEFROST/AIR CONDITIONING SYSTEM</u></p> <p>A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.</p> <p><u>Cab Defroster</u></p> <p>A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:</p> <ul style="list-style-type: none"> • One (1) adjustable shall be directed towards the left side cab window • One (1) adjustable shall be directed towards the right side cab window • Six (6) fixed outlets shall be directed at the windshield <p>The defroster shall 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 shall meet or exceed SAE J382 requirements.</p> <p><u>Cab/Crew Auxiliary Heater</u></p> <p>There shall be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat risers with a dual scroll blower. An aluminum plenum incorporated into the cab structure used to transfer heat to the forward positions.</p> <p><u>Air Conditioning</u></p> <p>A condenser shall be a 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.</p> <p>The air conditioning system shall 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 shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.</p> <p>The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall 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 rear plenum shall be covered with a formed plastic cover.</p> <p>The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.</p> <p>Adjustable air outlets shall be strategically located on the forward plenum cover per the following:</p> <ul style="list-style-type: none"> • Four (4) shall be directed towards the seating position on the left side of the cab • Four (4) shall be directed towards the seating position on the right side of the cab 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Adjustable air outlets shall be strategically located on the rear plenum cover per the following:</p> <ul style="list-style-type: none"> • Minimum of five (5) shall be directed towards crew cab area <p>A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be hinged with two (2) thumb latches.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p><u>Climate Control</u></p> <p>An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.</p> <p>The system shall 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.</p> <p>The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.</p> <p>The system controller shall be located within panel position #12.</p> <p><u>Gravity Drain Tubes</u></p> <p>Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.</p> <p><u>SUN VISORS</u></p> <p>Two (2) smoked Lexan™ sun visors shall be provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p>There shall be no retention bracket provided to help secure each sun visor in the stowed position.</p> <p><u>GRAB HANDLES</u></p> <p>A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.</p> <p><u>ENGINE COMPARTMENT LIGHTS</u></p> <p>There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.</p> <p>These light(s) shall be activated automatically when the cab is raised.</p> <p><u>ACCESS TO ENGINE DIPSTICKS</u></p> <p>For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.</p> <p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush lift and turn latch shall be provided on the access door.</p> <p><u>SEATING CAPACITY</u> The seating capacity in the cab shall be four (4).</p> <p><u>DRIVER SEAT</u> A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>OFFICER SEAT</u> A seat shall be provided in the cab for the passenger. The seat shall be a fixed type with no suspension. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>RADIO COMPARTMENT</u> A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 16.00" wide x 7.50" high x 15.00" deep, with the back of the compartment angled up to match the cab structure.</p> <p>A drop-down door with one (1) flush lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u> There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>FORWARD FACING CENTER CABINET</u></p> <p>A forward facing cabinet shall be provided in the crew cab at the center position.</p> <p>The cabinet shall be 38.50" wide x 60.00" high x 20.00" deep. The interior door shall be web netting. The netting shall be made with 2.00" wide nylon material with 2.00" openings. The nylon webbing shall be permanently fastened at the bottom side of the cabinet and have seat belt buckle fasteners on the opposite side to secure it. A bar shall connect the buckles and an orange pull strap shall be provided in the center. The clear door opening shall be 36.00" wide x 57.00" high.</p> <p>The cabinet shall include two (2) infinitely adjustable shelves with a 1.25" up-turned lip with a brushed finish.</p> <p>The cabinet shall include no louvers.</p> <p>The cabinet shall be constructed of smooth aluminum, and painted to match the cab interior.</p> <p><u>Cabinet Light</u></p> <p>There shall be one (1) white LED strip light installed on the left side of the interior cabinet door opening and one (1) white LED strip light installed on the right side of the interior cabinet door opening. The lighting shall be controlled by a rocker switch on the front of the cabinet.</p> <p><u>PARTITION</u></p> <p>There shall be one (1) partition(s) located split compartment. Each partition shall be the full vertical height of the compartment.</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be black Turnout Tuff material.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall 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 shall constrain the SCBA bottle</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.</p> <p>There shall be a quantity of three (3) SCBA brackets.</p> <p><u>SEAT BELTS</u> All cab and tiller cab (if applicable) seating positions shall have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.</p> <p>The 3-point shoulder type seat belts shall include height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter. The 3-point shoulder type seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p>The 3-point shoulder type belts shall 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.</p> <p>Any flip up seats shall include a 3-point shoulder type belts only.</p> <p>To ensure safe operation, the seats shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.</p> <p>There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><u>CAB DOME LIGHTS</u> There shall be four (4) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p>In order to ensure exceptional illumination, each white LED dome light shall 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.</p> <p><u>PORTABLE HAND LIGHTS, PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires two portable hand lights mounted in brackets fastened to the apparatus.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The hand lights are not on the apparatus as manufactured. The fire department shall provide and mount these hand lights.</p> <p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel include gauges, an LCD display, telltale indicator lamps, control switches, alarms, and a diagnostic panel. The function of the instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section, forward of the driver. The gauge assembly and switch panels are designed to be removable for ease of service and low cost of ownership.</p> <p><u>Gauges</u></p> <p>The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> • Voltmeter gauge (volts): <ul style="list-style-type: none"> ○ Low volts (11.8 VDC) <ul style="list-style-type: none"> ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly ○ High volts (15.5 VDC) <ul style="list-style-type: none"> ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly ○ Very low volts (11.3 VDC) <ul style="list-style-type: none"> ▪ Red warning indicator on the information center with a steady alarm ▪ Amber caution light on gauge assembly ○ Very high volts (16.0 VDC) <ul style="list-style-type: none"> ▪ Red warning indicator on the information center with a steady alarm ▪ Amber caution light on gauge assembly • Engine Tachometer (RPM) • Speedometer MPH (Major Scale), KM/H (Minor Scale) • Fuel level gauge (Empty - Full in fractions): <ul style="list-style-type: none"> ○ Low fuel (1/8 full) <ul style="list-style-type: none"> ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly ○ Very low fuel (1/32 full) <ul style="list-style-type: none"> ▪ Red caution indicator on the information center with steady alarm ▪ Amber caution light on gauge assembly • Engine Oil pressure Gauge (PSI): <ul style="list-style-type: none"> ○ Low oil pressure to activate engine warning lights and alarms <ul style="list-style-type: none"> ▪ Red caution indicator on the information center with steady alarm ▪ Amber caution light on gauge assembly • Front Air Pressure Gauges (PSI): <ul style="list-style-type: none"> ○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> ▪ Red warning indicator on the information center with a steady alarm ▪ Amber caution light on gauge assembly • Rear Air Pressure Gauges (PSI): 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

Bidder Complies	
Yes	No

- Low air pressure to activate warning lights and alarm
 - Red warning indicator on the information center with a steady alarm
 - Amber caution light on gauge assembly
- Transmission Oil Temperature Gauge (Fahrenheit):
 - High transmission oil temperature activates warning lights and alarm
 - Amber caution indicator on the information center with intermittent alarm
 - Amber caution light on gauge assembly
- Engine Coolant Temperature Gauge (Fahrenheit):
 - High engine temperature activates an engine warning light and alarms
 - Amber caution indicator on the information center with intermittent alarm
 - Amber caution light on gauge assembly
- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):
 - Low fluid (1/8 full)
 - Amber indicator light in gauge dial

All gauges shall perform prove out at initial power-up to ensure proper performance.

Indicator Lamps

To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.

The following amber telltale lamps shall 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)
- Side roll fault (where applicable)
- Front air bag fault (where applicable)

The following red telltale lamps shall be present:

- Warning (stop sign symbol)
- Seat belt
- Parking brake
- Stop engine

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Rack down <p>The following green telltale lamps shall be provided:</p> <ul style="list-style-type: none"> • Left turn • Right turn • Battery on <p>The following blue telltale lamp shall be provided:</p> <ul style="list-style-type: none"> • High beam <p><u>Alarms</u> Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.</p> <p>Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) shall be provided whenever a caution message is present without a warning message being present.</p> <p>Alarm silence: Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms shall intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp shall act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition shall enable the steady or pulsing tones respectively.</p> <p><u>Indicator Lamp and Alarm Prove-Out</u> A system shall be provided which automatically tests telltale indicator lights and alarms located on the cab instrument panel. Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.</p> <p><u>Control Switches</u> For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver. All switches shall have backlit labels for low light applications.</p> <p>Headlight/Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking and headlights. The second switch position shall activate the parking lights. The third switch shall activate the headlights.</p> <p>Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.</p> <p>Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.</p> <p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>Hazard switch shall be provided on the instrument panel or on the steering column.</p> <p>Heater, defroster, and air conditioning control panel.</p> <p>Turn signal arm: A self-canceling turn signal with high beam headlight controls shall be provided.</p> <p>Windshield wiper control shall include high, low, and intermittent modes.</p> <p>Parking brake control: An air actuated push/pull park brake control valve shall be provided.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p>High idle engagement switch: A momentary rocker switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function. 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 shall indicate when the high idle function is engaged.</p> <p>"OK To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.</p> <p>An additional "Emergency Master" button shall be provided on the lower left hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.</p> <p><u>Custom Switch Panels</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to four (4) switch panels in the lower instrument console and up to six (6) switch panels in the overhead visor console. All switches have backlit labels for low light conditions.</p> <p><u>Diagnostic Panel</u></p> <p>A diagnostic panel shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow ABS systems to provide blink codes should a problem exist.</p> <p>The diagnostic panel shall include the following:</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Engine diagnostic port • Transmission diagnostic port • ABS diagnostic port • Roll sensor diagnostic port • 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) <p><u>Cab LCD Display</u></p> <p>A digital four (4)-row by 20-character dot matrix display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text. The display shall be split into three (3) sections. Each section shall have a dedicated function. The upper left section shall display the outside ambient temperature.</p> <p>The upper right section shall display the following, along with other configuration specific information:</p> <ul style="list-style-type: none"> • Odometer • Trip mileage • PTO hours • Fuel consumption • Engine hours <p>The bottom section shall display INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The LCD shall be capable of displaying multiple text messages should more than one caution or warning condition exist.</p> <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u></p> <p>A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."</p> <p>The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.</p> <p><u>DO NOT MOVE TRUCK MESSAGES</u></p> <p>Messages shall 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 shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).</p> <p>The following messages shall be displayed (where applicable):</p> <ul style="list-style-type: none"> • Do Not Move Truck • DS Cab Door Open (Driver Side Cab Door Open) • PS Cab Door Open (Passenger's Side Cab Door Open) 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> 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 <p>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 shall be displayed as a caution message after the parking brake is disengaged.</p> <p><u>SWITCH PANELS</u> The built-in switch panels shall be located in the lower console or overhead console of the cab.</p> <p>The switches shall be rocker-type and include an integral indicator light. For quick, visual indication the switch shall be illuminated whenever the switch is active. A 2-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed below the switches. The label shall allow light to pass through the letters for improved visibility in low light conditions. Switches and light source are integral to the switch panel assembly.</p> <p><u>WIPER CONTROL</u> Wiper control shall consist of a two (2)-speed windshield wiper control with intermittent feature and windshield washer controls.</p> <p><u>SPARE CIRCUIT</u> There shall be two (2) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> The positive wire shall be connected directly to the battery power The negative wire shall be connected to ground Wires shall be protected to 15 amps at 12 volts DC Power and ground shall terminate officer side dash area Termination shall be with heat shrinkable butt splicing Wires shall be sized to 125 percent of the protection <p>The circuit(s) may be load managed when the parking brake is set.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>INFORMATION CENTER</u> An information center employing a 7.00" diagonal touch screen color LCD display shall be encased in an ABS plastic housing.</p> <p>The information center shall have the following specifications:</p> <ul style="list-style-type: none"> • Operate in temperatures from -40 to 185 degrees Fahrenheit • An Optical Gel shall be placed between the LCD and protective 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 shall be included as outlined in the cab instrumentation area. • Programmed to read US Customary <p><u>General Screen Design</u> Where possible, background colors shall be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background shall be used.</p> <p>If a caution or warning situation arises the following shall occur:</p> <ul style="list-style-type: none"> • An amber background/text color shall indicate a caution condition • A red background/text color shall indicate a warning condition • The information center shall utilize an "Alert Center" to display text messages for audible alarm tones. The text messages shall be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages shall cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" shall change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color shall be shown for all alert center messages. • A label for each button shall exist. The label shall indicate the function for each active button for each screen. Buttons that are not utilized on specific screens shall have a button label with no text or symbol. <p><u>Home/Transit Screen</u> This screen shall display the following:</p> <ul style="list-style-type: none"> • 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 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Active Alarms <p><u>On Scene Screen</u> This screen shall display the following and shall be auto activated with pump engaged (if equipped):</p> <ul style="list-style-type: none"> • 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 <p><u>Virtual Buttons</u> There shall be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.</p> <p><u>Page Screen</u> The page screen shall display the following and allow the user to progress into other screens for further functionality:</p> <ul style="list-style-type: none"> • Diagnostics <ul style="list-style-type: none"> ○ Faults <ul style="list-style-type: none"> ▪ Listed by order of occurrence ▪ Allows to sort by system ○ Interlock <ul style="list-style-type: none"> ▪ Throttle Interlocks ▪ Pump Interlocks (if equipped) ▪ Aerial Interlocks (if equipped) ▪ PTO Interlocks (if equipped) ○ Load Manager <ul style="list-style-type: none"> ▪ A list of items to be load managed shall be provided. The list shall provide a description of the load. ▪ The lower the priority numbers the earlier the device shall be shed should a low voltage condition occur. ▪ The screen shall indicate if a load has been shed (disabled) or not shed. ▪ "At a glance" color features are utilized on this screen. ○ Systems <ul style="list-style-type: none"> ▪ Command Zone <ul style="list-style-type: none"> • Module type and ID number • Module Version • Input or output number • Circuit number connected to that input or output 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <ul style="list-style-type: none"> • Status of the input or output • Power and Constant Current module diagnostic information <ul style="list-style-type: none"> ▪ Foam (if equipped) ▪ Pressure Controller (if equipped) ▪ Generator Frequency (if equipped) ○ Live Data <ul style="list-style-type: none"> ▪ General Truck Data • Maintenance <ul style="list-style-type: none"> ○ Engine oil and filter ○ Transmission oil and filter ○ Pump oil (if equipped) ○ Foam (if equipped) ○ Aerial (if equipped) • Setup <ul style="list-style-type: none"> ○ Clock Setup ○ Date & Time <ul style="list-style-type: none"> ▪ 12 or 24 hour format ▪ Set time and date ○ Backlight <ul style="list-style-type: none"> ▪ Daytime ▪ Night time ▪ Sensitivity ○ Unit Selection ○ Home Screen ○ Virtual Button Setup ○ On Scene Screen Setup ○ Configure Video Mode <ul style="list-style-type: none"> ▪ Set Video Contrast ▪ Set Video Color ▪ Set Video Tint • Do Not Move <ul style="list-style-type: none"> ○ The screen shall indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices shall be indicated <ul style="list-style-type: none"> ▪ 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) 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Notifications <ul style="list-style-type: none"> ○ View Active Alarms <ul style="list-style-type: none"> ▪ 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) <p>Button functions and button labels may change with each screen.</p> <p><u>COLLISION MITIGATION</u></p> <p>There shall be a HAAS Alert®, Model HA5 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA5 cellular transponder module shall 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 degree C to 85 degree C.</p> <p>The transponder shall be connected to the vehicle's emergency master circuit and battery direct power and ground.</p> <p>While responding with emergency lights on, the HA5 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.</p> <p>While on scene with emergency lights on, the HA5 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.</p> <p>The HA5 Responder-to-Vehicle (R2V) collision avoidance system shall include the transponder and a 5 year cellular plan subscription.</p> <p>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.</p> <p><u>VEHICLE DATA RECORDER</u></p> <p>There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>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.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> • Vehicle Speed - MPH • Acceleration - MPH/sec • Deceleration - MPH/sec • Engine Speed - RPM 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> 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 Time - 24 Hour Time Date - Year/Month/Day <p><u>Seat Belt Monitoring System</u></p> <p>A seat belt monitoring system (SBMS) shall be provided on the color display and in the center overhead of the cab instrument panel. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> 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 <p>The seat belt monitoring screen shall become active on the color display when:</p> <ul style="list-style-type: none"> The home screen is active: <ul style="list-style-type: none"> 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 shall be activated. <p>The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p> <p><u>INTERCOM SYSTEM</u></p> <p>There shall be digital, single radio interface, intercom located best location by installer in the cab. The front panel shall have master volume, and squelch controls with illuminated indicators, allowing for independent level setting of radio and auxiliary audio devices.</p> <p>There shall be one (1) radio listen only / transmit control with select, monitor, receive, and transmit indicators. There shall be one (1) auxiliary audio input with select, and receive indicators.</p> <p>Headset jacks shall be provided for the driver, officer, and two (2) crew positions located at both forward facing seats .</p> <p>The following Firecom components shall be provided:</p> <ul style="list-style-type: none"> One (1) 5100D Intercom Four (4) HM-10 Interior headset jacks All necessary power and station cabling <p><u>RADIO / INTERCOM INTERFACE CABLE</u></p> <p>The apparatus manufacturer shall supply and install one (1) radio interface cable before delivery of the vehicle.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The radio equipment to be used by the customer shall be:</p> <ul style="list-style-type: none"> • Motorola High Power , Model number Motorola, Model XTL-5000,. <p><u>OVER THE HEAD, RADIO TRANSMIT HEADSET</u></p> <p>There shall be two (2) over the head, radio transmit headset(s) provided driver's seat and officer seat.</p> <p>Each Firecom, Model FH-51 headset shall feature:</p> <ul style="list-style-type: none"> • Coiled cord with rugged angled plug • Noise cancelling electric microphone • Flex boom rotates for left or right dress • Adjustable volume control • ComLeather ear seals with 24dB noise reduction • Radio Push To Transmit button. Mic is always live for intercom communication <p><u>OVER THE HEAD, INTERCOM ONLY HEADSET</u></p> <p>There shall be two (2) over head, intercom only headset(s) provided driver's side outboard forward facing seat and passenger's side outboard forward facing seat.</p> <p>Each Firecom, Model FH-52 headset shall feature:</p> <ul style="list-style-type: none"> • Coiled cord with rugged angled plug • Noise cancelling electric microphone • Flex boom rotates for left or right dress • Adjustable volume control • ComLeather ear seals with 24 dB noise reduction • Intercom Push To Talk button <p><u>HEADSET HANGERS</u></p> <p>There shall be four (4) headset hanger(s) installed driver's seat, officer's seat, driver's side inboard forward facing seat and passenger's side inboard forward facing seat. The hanger(s) shall meet NFPA 1901, Section 14.1.11, requirement for equipment mounting.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be one (1) standard 1.125", 18 thread antenna-mounting base(s) installed on the right side on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap shall be installed on the mount.</p> <p><u>VEHICLE CAMERA SYSTEM</u></p> <p>There shall be a color vehicle camera system provided with the following:</p> <ul style="list-style-type: none"> • One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse <p>The camera images shall be displayed on the driver's vehicle information center display. Audio from the microphone on the active camera shall be via an amplified speaker with volume control located behind the driver seat.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The following components shall be included:</p> <ul style="list-style-type: none"> • One (1) Safety Vision, Model 620 camera • One (1) Amplified speaker (if applicable) • All necessary cables <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>The primary power distribution shall 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 shall be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers shall be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers shall be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays shall be easily accessible.</p> <p>Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.</p> <p>Circuit protection devices, which conform to SAE standards, shall be utilized to protect electrical circuits. All circuit protection devices shall be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting). When required, automotive type fuses shall be utilized to protect electronic equipment. Control relays and solenoid shall have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.</p> <p><u>Solid-State Control System</u></p> <p>A solid-state electronics based control system shall be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network shall consist of electronic modules located near their point of use to reduce harness lengths and improve reliability. The control system shall comply with SAE J1939-11 recommended practices.</p> <p>The control system shall operate as a master-slave system whereas the main control module instructs all other system components. The system shall contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.</p> <p>For increased reliability and simplified use the control system modules shall include the following attributes:</p> <ul style="list-style-type: none"> • 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 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Factory and field re programmable to accommodate changes to the vehicle's operating parameters • Complete operating and troubleshooting manuals • USB connection to the main control module for advanced troubleshooting <p>To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules shall meet the following specifications:</p> <ul style="list-style-type: none"> • Module circuit board shall 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 16 volts DC <p>The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.</p> <p><u>Circuit Protection and Control Diagram</u> Copies of all job-specific, computer network input and output (I/O) connections shall be provided with each chassis. The sheets shall indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.</p> <p><u>On-Board Electrical System Diagnostics</u> Advanced on-board diagnostic messages shall be provided to support rapid troubleshooting of the electrical power and control system. The diagnostic messages shall be displayed on the information center located at the driver's position.</p> <p>The on-board information center shall include the following diagnostic information:</p> <ul style="list-style-type: none"> • Text description of active warning or caution alarms • Simplified warning indicators • Amber caution indication with intermittent alarm • Red warning indication with steady tone alarm <p><u>Prognostics</u> A software based vehicle tool shall be provided to predict remaining life of the vehicles critical fluid and events (no exception).</p> <p>The system shall send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals.</p> <p>Prognostics shall include:</p> <ul style="list-style-type: none"> • Engine oil and filter • Transmission oil and filter • Pump oil (if equipped) 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Foam oil (if equipped) • Aerial oil and filter (if equipped) <p><u>Advanced Diagnostics</u> An advanced, Windows-based, diagnostic software program shall be provided for this control system. The software shall provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device.</p> <p>The service and maintenance software shall be easy to understand and use and have the ability to view system input/output (I/O) information.</p> <p><u>Tech Module with WiFi</u> An in cab module shall provide WiFi wireless interface and data logging capability. The WiFi interface shall comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module shall provide an external antenna connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna.</p> <p>The module shall 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 shall allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level shall allow diagnostic access to inputs and outputs installed on the Command Zone, control and information system.</p> <p>The data logging capability shall record faults from the engine, transmission, ABS and Command Zone, control and information systems as they occur. No other data shall be recorded at the time the fault occurs. The data logger shall provide up to 2 Gigabytes of data storage.</p> <p>A USB connection shall be provided on the Tech Module. It shall provide a means to download data logger information and update software in the device.</p> <p><u>Indicator Light and Alarm Prove-Out System</u> A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.</p> <p><u>Voltage Monitor System</u> A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.</p> <p>The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.</p> <p><u>Power and Ground Studs</u> Spare circuits shall be provided in the primary distribution center for two-way radio equipment.</p> <p>The spare circuits shall consist of the following:</p> <ul style="list-style-type: none"> • One (1) 12-volt DC, 30 amp battery direct spare • One (1) 12-volt DC ground and un-fused switched battery stud located in or adjacent to the power distribution center 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>Enhanced Software</u> The solid-state control system shall include the following software enhancements:</p> <p>All perimeter lights and scene lights (where applicable) shall be deactivated when the parking brake is released.</p> <p>Cab and crew cab dome lights shall remain on for 10 seconds for improved visibility after the doors close. The dome lights shall dim after 10 seconds or immediately if the vehicle is put into gear.</p> <p>Cab and crew cab perimeter lights shall remain on for 10 seconds for improved visibility after the doors close. The dome lights shall dim after 10 seconds or immediately if the vehicle is put into gear.</p> <p><u>EMI/RFI Protection</u> To prevent erroneous signals from crosstalk contamination and interference, the electrical system shall meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system shall be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.</p> <p>The apparatus shall have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system shall 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, shall provide EMC testing reports from testing conducted on an entire apparatus and shall 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.</p> <p>EMI/RFI susceptibility shall be controlled by applying appropriate circuit designs and shielding. The electrical system shall be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.</p> <p><u>ELECTRICAL</u> All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> 1. All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>2. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.</p> <p>3. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.</p> <p>4. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).</p> <p>5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal.</p> <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><u>BATTERY SYSTEM</u> There shall be three (3) Exide, Model 31S950X3W, 12 volt DC group 31 batteries provided and mounted in the left side battery box.</p> <p>These batteries will be rated at 950 CCA cold cranking amps with a reserve capacity of 190 amps and have threaded stainless steel studs.</p> <p><u>BATTERY SYSTEM</u> There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><u>MASTER BATTERY SWITCH</u> There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p> <p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p> <p><u>BATTERY COMPARTMENTS</u> Batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab.</p> <p>Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.</p> <p><u>JUMPER STUDS</u> One (1) set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.</p> <p><u>POWER CONVERTER / BATTERY CHARGERS</u> There shall be two (2) Progressive Dynamics, Inc., Model PD2180, power converter / battery chargers installed. Each PD2180 shall be capable of charging up to three (3) separated banks of batteries. The PD2180s shall be wired in parallel to increase maximum output capability to each battery system.</p> <p>Each PD2180 shall contain the following features:</p> <ul style="list-style-type: none"> • Four-Stage Charging System constantly monitors battery voltage, then automatically selects one of four charging modes: BOOST, NORMAL, STORAGE, or EQUALIZE. • Digital meter displays current, voltage mode, blown fuse indication, and battery type. • Reverse battery protection prevents charger damage if battery leads are accidentally reversed. • Over Voltage Protection prevents high voltage spikes from damaging sensitive electronic components in the charger. • Electronic Current Limiting limits the maximum output current to the rating of the charger to prevent overheating and damage caused by shorts or excessive loads. • Regulated Output Voltage prevents AC line voltage variations from being transmitted to the batteries and 12 Volt circuits. • Intelligent Cooling Fan only runs as fast as required to maintain constant operating temperature reducing thermal stress. • Automatic Over-temperature Shutdown prevents charger damage in the event the fan is unable to cool the charger due to inadequate compartment ventilation. <p>The PD2180s shall be powered from a dedicated 30A VAC shoreline.</p> <p>Battery charger shall be located in the front left body compartment, mounted as high as possible.</p> <p><u>KUSSMAUL AUTO EJECT FOR IRT SHORELINE</u> There shall be one (1) Kusssmaul™, Model 091-159-30-120, 30 amp 120 volt AC shoreline inlet provided to operate the IRT dedicated 120 volt AC circuit on the apparatus.</p> <p>The shoreline inlet shall include red weatherproof flip up cover.</p> <p>There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.</p> <p>The shoreline shall be connected to the Idle Reduction Technology battery chargers.</p> <p>A mating connector body shall be supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet that state the following:</p> <ul style="list-style-type: none"> • Line Voltage 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Current Rating (amps) • Phase • Frequency <p>The IRT dedicated shoreline receptacle shall be located in the front left side compartment on the left wall.</p> <p><u>SUB FEED CIRCUIT BREAKER BOX - IRT SHORELINE</u></p> <p>A Cutler Hammer sub feed box shall be supplied to protect the idle reduction technology (IRT) charger circuits when IRT shoreline power source is used.</p> <p>The box shall be installed in the in the LS3 compartment upper back wall.</p> <p>The sub feed box shall distribute power to the idle reduction technology battery chargers in the vehicle.</p> <p>A label for each breaker shall be provided adjacent to the circuit breaker panel.</p> <p>Identification of circuits shall be done in a durable manner that provides years of service.</p> <p><u>ALTERNATOR</u></p> <p>A Delco Remy®, Model 40SI, alternator shall be provided. It shall have a rated output current of 320 amps, as measured by SAE method J56. The alternator shall 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 shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p> <p><u>ELECTRONIC LOAD MANAGER</u></p> <p>An electronic load management (ELM) system shall 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.</p> <p>For improved reliability and ease of use, the load manager system shall 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 shall not be allowed.</p> <p>The system shall include the following features:</p> <ul style="list-style-type: none"> • System voltage monitoring. • A shed load shall 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. <ul style="list-style-type: none"> ○ If enabled: <ul style="list-style-type: none"> ▪ "Load Man Hi-Idle On" shall display on the information center. ▪ Hi-Idle shall 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. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The information center, where applicable, includes a "Load Manager" screen indicating the following:</p> <ul style="list-style-type: none"> • Load managed items list, with priority levels and item condition. • Individual load managed item condition: <ul style="list-style-type: none"> ○ ON = not shed ○ SHED = shed <p><u>SEQUENCER</u></p> <p>A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall 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.</p> <p>For improved reliability and ease of use, the load sequencing system shall 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 shall not be allowed.</p> <p>Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half-second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation.</p> <p>When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.</p> <p>Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half-second intervals:</p> <ul style="list-style-type: none"> • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable) <p><u>SWITCH, COMMAND ZONE DISPLAY</u></p> <p>A virtual switch shall be provided for the load manager in the Command Zone display on cab instrument panel.</p> <p><u>HEADLIGHTS</u></p> <p>There shall 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:</p> <ul style="list-style-type: none"> • the outside light on each side shall contain a part number 055***1 low beam module • the inside light on each side shall contain a part number 055***1 high beam module • the headlights to include chrome bezels <p>The low beam lights shall be activated when the headlight switch is on.</p> <p>The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>DIRECTIONAL LIGHTS</u> There shall be two (2) Whelen 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights.</p> <p>The color of the lenses shall be the same color as the LED's.</p> <p><u>INTERMEDIATE LIGHT</u> There shall 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 shall double as a turn signal and marker light.</p> <p><u>CAB CLEARANCE/MARKER/ID LIGHTS</u> There shall be seven (7) amber LED lights provided per the following:</p> <ul style="list-style-type: none"> • Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield. • Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield as close to the outside of the apparatus as practical. • Two (2) amber LED clearance lights shall be installed, one (1) on each side of the cab as high and far forward as practical. <p>The lights shall be installed without guards.</p> <p><u>FRONT CAB SIDE DIRECTIONAL LIGHTS</u> There shall be two (2) Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, one (1) on each side of the cab.</p> <p>The lights shall activate as additional directional lights with the corresponding directional circuit.</p> <p><u>REAR CLEARANCE/MARKER/ID LIGHTING</u> There shall be a three (3) LED light bar used as identification lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • 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 <p>There shall 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:</p> <ul style="list-style-type: none"> • 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 <p>There shall 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:</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 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 <p>There shall 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.</p> <p>There shall 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.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>The rear stop/tail and directional LED lighting shall consist of the following:</p> <ul style="list-style-type: none"> • Two (2) Whelen®, Model M6BTT, red LED stop/tail lights • Two (2) Whelen, Model M6T, amber LED arrow turn lights <p>The lights shall be provided with color lenses.</p> <p>The lights shall be mounted in a polished combination housing.</p> <p>There shall be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing.</p> <p><u>LICENSE PLATE BRACKET</u></p> <p>There shall be one (1) license plate bracket mounted on the rear of the body.</p> <p>A white LED light shall illuminate the license plate. A stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.</p> <p><u>LIGHTING BEZEL</u></p> <p>There shall be two (2) Whelen, Model M6FCV3P , three (3) place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, and back up lights.</p> <p><u>BACK-UP ALARM</u></p> <p>A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><u>CAB PERIMETER SCENE LIGHTS</u></p> <p>There shall be four (4) Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" white LED strip lights provided, one (1) for each cab door.</p> <p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>PUMP HOUSE PERIMETER LIGHTS</u></p> <p>There shall 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.</p> <p>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 shall be installed.</p> <p>The lights shall be controlled by the same means as the body perimeter lights.</p> <p><u>BODY PERIMETER SCENE LIGHTS</u></p> <p>There shall be two (2) Amdor, Model AY-LB-12HW020, 350 lumens, 20.00" long, white LED's, 12 volt DC lights provided at the rear step area of the body, one (1) each side shining to the rear.</p> <p>The perimeter scene lights shall be activated when the parking brake is applied.</p> <p><u>STEP LIGHTS</u></p> <p>Four (4) white LED step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.</p> <p>In order to ensure exceptional illumination, each light shall 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.</p> <p>These step lights shall be actuated with the pump panel light switch.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) HiViz Model FT-B-46-*-* , 2.56" high x 46.00" long x 2.45" deep 13,306 effective lumens 12 volt DC light with white LEDs provided as far forward as possible on the front cab roof centered. The LEDs shall be configured with flood optics.</p> <p>The painted parts of the light housing and brackets to be black.</p> <p>The scene LEDs shall be activated by a switch at the driver's side switch panel, by a switch at the left side pump panel and by a switch at the passenger's side switch panel.</p> <p>The white LEDs may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) HiViz®, Model FT-GESM, 20,500 equivalent lumens 8.65" high x 10.61" wide x 2.78" deep light(s) with white LEDs installed on the cab Driver side of the cab. The light(s) to include black optic holders, black bezels and black fixture body.</p> <p>The light(s) shall be activated by a switch at the driver's side switch panel, by a switch at the left side pump panel and by a switch at the passenger's side switch panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>12 VOLT LIGHTING</u> There shall be one (1) HiViz®, Model FT-GESM, 20,500 equivalent lumens 8.65" high x 10.61" wide x 2.78" deep light(s) with white LEDs installed on the cab officer side of cab. The light(s) to include black optic holders, black bezels and black fixture body.</p> <p>The light(s) shall be activated by a switch at the driver's side switch panel, by a switch at the left side pump panel and by a switch at the passenger's side switch panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u> There shall one (1) HiViz Model FT-MB-18-TR-*-* , 6,652.8 effective lumens 2.87" high x 25.20" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus located, driver side of the hose bed.</p> <p>The painted parts of the light housing and brackets to be black.</p> <p>The light(s) shall be controlled by the same switching that has been selected for the other side scene light(s) on the apparatus.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u> There shall one (1) HiViz Model FT-MB-18-TR-*-* , 6,652.8 effective lumens 2.87" high x 25.20" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus located, officer side of the hosebed.</p> <p>The painted parts of the light housing and brackets to be black.</p> <p>The light(s) shall be controlled by the same switching that has been selected for the other side scene light(s) on the apparatus.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>HOUSING TO MOUNT RECESSED LIGHT ONTO A HORIZONTAL SURFACE</u> There shall be one (1) housings fabricated with painted aluminum installed on the apparatus one (1) on each side of the hosebed for the 12 volt DC recessed lights.</p> <p><u>DECK LIGHTS</u> There shall be two (2) Whelen, Model PFBP12C, 12 volt DC LED floodlights with swivel mount provided at the rear of the hose bed, one (1) each side.</p> <p>The lights shall be activated by a control from a switch at the rear of the truck.</p> <p><u>HOSE BED LIGHTS</u> There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area. Hose Bed lights shall meet the photometric levels listed in NFPA 1901 for Hose Bed lighting requirements.</p> <ul style="list-style-type: none"> Light strip(s) shall be installed along the upper edge of the left side of the hose bed. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Light strip(s) shall be installed along the upper edge of the right side of the hose bed. <p>The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.</p> <p><u>WALKING SURFACE LIGHTS</u></p> <p>There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the cargo area.</p> <ul style="list-style-type: none"> • One (1) light strip shall be installed the entire length of the driver's side of the cargo area. • One (1) light strip shall be installed the entire length of the passenger's side of the cargo area. <p>The light shall be activated when the body step lights are on.</p> <p><u>SPECIAL WATER TANK</u></p> <p>Booster tank shall have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.</p> <p>The Special tank shall be T-shaped to provide for deep side compartments and to serve as a large sump to limit the amount of undraftable water.</p> <p>The tank shall be designed to achieve a low hose bed. Tank design shall be a stepped design with the forward section of the tank higher than the section of the tank that is below the hose bed.</p> <p>Tank joints and seams shall be nitrogen welded inside and out.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.</p> <p>Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.</p> <p>Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.</p> <p>All partitions shall interlock and shall be welded to the tank bottom and sides.</p> <p>Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.</p> <p>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p> <p>Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.</p> <p>A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Tank shall have a combination vent and 14.00" fill tower.</p> <p>Tank shall be installed in a special size fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel flat bar or rectangular tubing.</p> <p>Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system to be approved by the tank manufacturer.</p> <p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><u>SLEEVE, PLUMBING, THROUGH TANK</u></p> <p>One (1) sleeve shall be provided in the water tank for a 3.00" pipe to the rear.</p> <p><u>WATER TANK RESTRAINT</u></p> <p>A heavy-duty water tank restraint shall be provided.</p> <p><u>HOSE BED</u></p> <p>The hose bed shall be fabricated of 0.125"-5052 aluminum with a nominal 38,000 psi tensile strength.</p> <p>The hose bed shall be as low as practical.</p> <p>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.</p> <p>Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation.</p> <p>A cross divider shall be provided at the front of the hose bed before the tank transitions from the lower section to the upper section. The divider shall run from the top of the side sheet down below the hose bed grating.</p> <p>The hose bed interior shall be painted to match the lower body color.</p> <p>The hose bed shall accommodate 1000 feet of 5.00" hose and 1000 feet of 3.00" hose.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>HOSE BED DIVIDER</u> Four (4) adjustable hosebed dividers shall be furnished for separating hose.</p> <p>Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.</p> <p>Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.</p> <p>Divider shall be held in place by tightening bolts, at each end.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p><u>REINFORCEMENT, HOSEBED DIVIDERS</u> The four (4) hosebed divider(s) shall be reinforced by attaching them to the rear upper handrail with adjustable stanchions.</p> <p><u>NOTCH</u> A notch as wide and deep as possible per engineering shall be provided at the central area of the two (2) in each of the driver side hosebed dividers that define the space for the rear crosslays hose bed divider(s). The notch shall be provided in four (4) divider(s).</p> <p><u>HOSE BED COVER</u> A two (2) section hose bed cover, constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be hinged with full length stainless steel piano hinge. The sides shall be slanted down. A stationary bridgework support assembly shall be provided at the rear to support the cover.</p> <p>The cover shall be reinforced so that it can support the weight of a man walking on the cover.</p> <p>The cover is designed with the left cover opening first.</p> <p>If access to the water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that the tank may be filled without raising cover doors.</p> <p>Chrome grab handles and four (4) gas filled cylinders shall be provided to assist in opening and closing the cover. A handrail is to be provided at the rear, in the center of the support, to assist in opening the cover.</p> <p>The hose bed cover shall be connected to the Do Not Move Truck indicator. The light shall be activated if the cover is not in the stowed position and the parking brake is released.</p> <p>A black vinyl flap shall be installed on the rear of the bright aluminum treadplate hose bed cover. A chain weight and paddle seat belt buckles shall be provided along bottom edge of the cover. The web/seat belt straps shall be 6.00" in length so that they are approximately 3.00" in length when doubled over. The top edge of the cover shall be secured to the hose bed structure with quarter-turn fasteners.</p> <p>Note: The buckles shall not be mounted to the hosebed divider mount.</p> <p><u>RUNNING BOARDS</u> Running boards shall be fabricated of .125" bright aluminum treadplate.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splash guard shall be provided above the running board treadplate.</p> <p><u>TAILBOARD</u></p> <p>The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 12.00" deep and full width of the body. The outboard sides of the tailboard shall be angled at 45 degrees beginning at the point where the body meets the tailboard at the outboard edge angling rearward to the rear edge of the tailboard.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></p> <p>The rear facing surfaces of the center rear wall shall be smooth aluminum.</p> <p>The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.</p> <p>The rear wall shall be flush.</p> <p><u>REAR TOW EYES</u></p> <p>Two (2) tow eyes, which are an integral part of the body mounting substructure, shall be installed below the rear of the truck.</p> <p>The tow eyes shall be of adequate strength to allow the truck to be pulled from the eyes.</p> <p><u>REAR TOW BAR</u></p> <p>One (1) tow bar shall be installed under the tailboard, 3.00" forward from the rear of the tailboard.</p> <p>The tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.</p> <p>The tow bar design shall have been tested and evaluated using finite element analysis techniques.</p> <p><u>COMPARTMENTATION</u></p> <p>Body and compartments shall be fabricated of .125", 5052-H32 aluminum.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p> <p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Side compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>The side compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.</p> <p>The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.</p> <p>Side compartment covers shall be separate from the compartment tops.</p> <p>Front facing compartment walls shall be covered with bright aluminum treadplate.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u></p> <p>Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p> <p>The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.</p> <p>The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.</p> <p>Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.</p> <p>A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb equipment support rating per lower compartment.</p> <p>The steel frames as well as the steel vertical angles shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals as standard.</p> <p>The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.</p> <p>Isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.</p> <p>A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.</p> <p><u>AGGRESSIVE WALKING SURFACE</u></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>LOUVERS</u> Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.</p> <p><u>TESTING OF BODY DESIGN</u> Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, strain gauging, and model analysis shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.</p> <p>Body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p> <ul style="list-style-type: none"> • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle at 35 mph on a washboard road. • Driving the vehicle at 55 mph on a smooth road. • Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement. <p>Evidence of actual testing techniques shall be made available upon request.</p> <p><u>LEFT SIDE COMPARTMENTATION</u> The left side compartmentation shall consist of three rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 66.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 28.75" wide x 56.88" high.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The clear door opening shall be a minimum of 58.25" wide x 23.13" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 67.63" high x 25.88" deep in the lower 26.00" of height and 12.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 44.75" wide x 57.88" high.</p> <p>The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>RIGHT SIDE COMPARTMENTATION</u></p> <p>The right side compartmentation shall consist of three rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 66.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 28.75" wide x 56.88" high.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The clear door opening shall be a minimum of 58.25" wide x 23.13" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 67.63" high x 25.88" deep in the lower 26.00" of height and 12.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 44.75" wide x 57.88" high.</p> <p>The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>SIDE COMPARTMENT ROLLUP DOOR(S)</u></p> <p>There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, an anodized satin finish and manufactured by Gortite®.</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>REAR COMPARTMENTATION</u></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p> <p>The interior dimensions of this compartment shall be 40.00" wide x 33.63" high x 41.88" deep. The interior height of the compartment shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>A louvered, removable access panel shall be furnished on the back wall of the compartment.</p> <p>The rear compartment shall be open into the rear side compartments.</p> <p>The clear door opening of this compartment shall be a minimum of 33.25" wide x 23.88" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>ROLLUP REAR COMPARTMENT DOOR</u></p> <p>There shall be a rear rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by Gortite®.</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>DOOR GUARD</u> There shall be five (5) compartment doors that shall include a guard/drip pan designed to protect the rollup door from damage when in the retracted position and contain any water spray. The guard shall be fabricated from stainless steel and installed left side rearward compartment, left side forward compartment, right side rearward compartment, right side forward compartment and rear compartment.</p> <p><u>ROLLUP DOOR GUARD</u> There shall be two (2) compartment doors rollup door guards raised to provide additional clearance in the compartment. The raised door guards shall be provided LS2 and RS2.</p> <p><u>COMPARTMENT LIGHTING</u> There shall be seven (7) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment. The dual light strips shall be in all body compartment(s).</p> <p>Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><u>MOUNTING TRACKS</u> There shall be five (5) sets of tracks for mounting shelf(s) in LS1, LS3, RS1, RS3 and B1. These tracks shall be installed vertically to support the adjustable shelf(s), and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.</p> <p><u>ADJUSTABLE SHELVES</u> There shall be five (5) shelves with a capacity of 500 lb provided.</p> <p>The shelf construction shall consist of .188" aluminum painted spatter gray with 2.00" sides.</p> <p>Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p> <p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location(s) shall be determined at a later date.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u> There shall be one (1) floor mounted slide-out tray(s) provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb in the extended position.</p> <p>Each tray shall be constructed of aluminum painted spatter gray</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>To ensure years of easy operation, the slides shall 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 shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.</p> <p>The location(s) shall be B1.</p> <p><u>EQUIPMENT MOUNTING SYSTEM</u> Pac Trac equipment mounting system shall be installed on the back wall of two (2) compartment(s), Vertically mounted to compartment back walls. LS 2, 3.</p> <p><u>HIGH RISE PACK CURVED MOUNT(S)</u> There shall be a quantity of two (2) curved mount(s) provided to hang a high rise pack on the rear wall of In the LS1 compartment compartment(s).</p> <p>The mount shall be a half moon shape with the ends curving down. The diameter of the curve shall be 6.0" .The mount shall extend Approx 12" out from the mounting plate at an approximate 5 degree angle upward to help prevent the pack from sliding off the mount. The compartment wall shall be reinforced to prevent wall distortion.</p> <p>The mount(s) shall be positioned exact location to be determined on the rear wall.</p> <p><u>RUB RAIL</u> Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p><u>BODY FENDER CROWNS</u> Black rubber fender crowns shall be provided around the rear wheel openings.</p> <p><u>BODY FENDER LINER</u> A unpainted brushed stainless fender liner shall be provided. The liners shall be removable to aid in the maintenance of rear suspension components.</p> <p><u>HARD SUCTION HOSE</u> Hard suction hose shall not be required.</p> <p><u>HANDRAILS</u> The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Drain holes shall be provided in the bottom of all vertically mounted handrails.</p> <p>Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.</p> <p><u>HANDRAILS</u> One (1) vertical handrail shall be located on each rear beavertail.</p> <p><u>AIR BOTTLE STORAGE (DOUBLE)</u> A quantity of four (4) air bottle compartments, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the left side forward of the rear wheels, on the left side rearward of the rear wheels, on the right side forward of the rear wheels and on the right side rearward of the rear wheels . A polished stainless steel door with a Southco raised trigger C2 chrome lever latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><u>EXTENSION LADDER</u> There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.</p> <p><u>ROOF LADDER</u> There shall be one (1) 14' aluminum, Duo-Safety, Series 775-DR roof ladder(s) provided. The ladder(s) shall have roof hooks on both ends.</p> <p><u>LADDER STORAGE</u> The ladders and a single backboard shall be stored between the water tank and the right side compartments.</p> <p>The ladders shall extend into the pump compartment just to the rear of the water pump discharges.</p> <p>Backboard dimensions shall be 72" x 18" x 2".</p> <p>The ladder storage area shall be enclosed as practical by means of sheet metal to protect the ladders from road dirt. The ladders that extend into the pump house shall also be enclosed. A black rubber boot shall be provided to enclosed the ladders in the gap between the pump house and the body.</p> <p>Each ladder shall be stored vertically in a separate stainless steel storage trough. Each stainless steel trough shall be lined with nylon slides.</p> <p>A bright aluminum treadplate enclosure shall be provided at the rear of the body to properly contain the ladders This enclosure shall extend to the rear of the side body compartments.</p> <p>The enclosure shall also include a vertically hinged smooth aluminum door with a D-handle latch to access the ladders.</p> <p><u>FOLDING LADDER</u> One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>FOLDING LADDER STORAGE</u> There shall be storage designated right side for folding ladders stored between the side sheet in a stainless steel trough in the ladder storage compartment.</p> <p><u>PIKE POLE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus. The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole. The pike pole(s) shall be a Duo-Safety 10' pike pole.</p> <p><u>PIKE POLE STORAGE</u> There shall be storage designated right side for One (1) pike pole 8' or longer pike poles stored in a tube between the side sheet and tank in the ground ladder storage compartment.</p> <p><u>6' PIKE POLE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 6' pike pole or plaster hook mounted in a bracket fastened to the apparatus. The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole. The pike pole(s) shall be a Duo-Safety 6' pike pole.</p> <p><u>PIKE POLE STORAGE</u> There shall be storage designated right side for One (1) pike pole with a .75" standard notch stored in a tube between the side sheet and tank in the ground ladder storage compartment.</p> <p><u>REAR FOLDING STEPS</u> Bright finished, non-skid folding steps with a black tread coating on the stepping surface shall be provided at the rear. The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><u>PUMP COMPARTMENT</u> The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. The pump compartment shall be constructed of the same material as the body compartmentation. The pump compartment substructure shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards. The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist. Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>PUMP MOUNTING</u> Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.</p> <p><u>LEFT SIDE PUMP CONTROL PANELS</u> All pump controls and gauges shall be located at the left side of the apparatus and properly identified. Layout of the pump control panel shall be ergonomically efficient and systematically organized. The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance: The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges. The lower section of the panel shall contain all inlets, outlets, and drains. All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p><u>IDENTIFICATION TAGS</u> The identification tag for each valve control shall be recessed in the face of the tee handle. All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge. All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels. The pump panel on the right side shall be removable with lift and turn type fasteners. Trim rings shall be installed around all inlets and outlets.</p> <p><u>NOTCH CARGO COMPARTMENT SIDESHEET</u> The cargo compartment side sheet on the right side of the unit shall be notched for access to the hose reel. The notch shall be designed as to allow viewing of the hose reel while rewinding the booster hose. Speedlay style rollers shall be provided on the sides and bottom of the notch to aid the payout of hose.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>MIDSHIP FIRE PUMP</u></p> <p>Midship fire pump shall be a Hale QMAX-150, 1500 gpm single (1) stage midship mounted centrifugal type.</p> <p>Pump shall be the class "A" type.</p> <p>Pump shall deliver the percentage of rated discharges at the pressures indicated below:</p> <ul style="list-style-type: none"> - 100% of rated capacity at 150 psi net pump pressure. - 100% of rated capacity at 165 psi net pump pressure. -70% of rated capacity at 200 psi net pump pressure. -50% of rated capacity at 250 psi net pump pressure. <p>Entire pump and both suction and discharge passages shall be hydrostatically tested to a pressure of 500 psi.</p> <p>Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the current NFPA 1901 standards and shall be free from objectionable pulsation and vibration.</p> <p>Pump body and related parts shall be of fine grain, alloy cast iron with a minimum tensile strength of 30,000 psi (2041.2 bar).</p> <p>All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron shall not be acceptable.</p> <p>Pump body shall be horizontally split, on a single plane in two (2) sections, for easy removal of entire impeller assembly, including wear rings and bearings from beneath the pump, without disturbing pump piping or the mounting of the pump in the chassis.</p> <p>Pump shall have one (1) double suction impeller. The pump body shall have two (2) opposed discharge volute cutwaters to eliminate radial unbalance.</p> <p>Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined, hand-ground, and individually balanced. The vanes of the impeller intake eyes shall be hand-ground and polished to a sharp edge. They shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.</p> <p>Impeller clearance rings shall be bronze and easily renewable without replacing impeller or pump volute body. They shall be of the wrap-around double labyrinth design for maximum efficiency.</p> <p>Pump shaft shall be electric furnace heat-treated, corrosion resistant stainless steel. It shall be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft shall be sealed with double oil seal to keep road dirt and water out of drive unit.</p> <p>Pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. A high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on the side opposite of the drive unit). The sleeve bearing shall be automatically oil lubricated and pressure balanced to exclude foreign</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash lubricated.</p> <p><u>PUMP PACKING</u> The pump shaft shall have one (1) packing gland located on inlet side of the pump and shall be of the split design for ease of repacking.</p> <p>The packing gland shall be a full-circle threaded design to exert uniform pressure on packing and prevent "cocking" and uneven packing load when it is tightened.</p> <p>The packing gland shall be easily adjusted by hand (with a rod or screwdriver, no special tools or wrenches required).</p> <p>The packing rings shall be of a unique, permanently lubricated, long-life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.</p> <p><u>PUMP TRANSMISSION</u> The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature.</p> <p>The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears, both drive and pump, shall be of the highest quality, electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.</p> <p>The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on pump operator's panel, adjacent to the throttle control.</p> <p><u>PUMPING MODE</u> An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.</p> <p><u>AIR PUMP SHIFT</u> Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab.</p> <p>Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.</p> <p>The pump shift control in the cab shall be illuminated to meet NFPA requirements.</p> <p><u>TRANSMISSION LOCK-UP</u></p> <p>The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.</p> <p><u>AUXILIARY COOLING SYSTEM</u></p> <p>A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. The heat exchanger shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. The exchanger shall be plumbed to the master drain valve.</p> <p><u>INTAKE RELIEF VALVE - PUMP</u></p> <p>There shall be One (1) Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 125 psig.</p> <p>The relief valve(s) shall have a working range of 75 psi to 250 psi.</p> <p>The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p> <p>The relief valve pressure control shall be located behind the right side pump panel with a stainless steel access door .</p> <p><u>PRESSURE CONTROLLER</u></p> <p>A Pierce Pump Boss Model PBA300 pressure governor shall be provided.</p> <p>A pressure transducer shall be installed in the water discharge manifold on the pump.</p> <p>The display panel shall be located at the pump operator's panel.</p> <p><u>PRIMING PUMP</u></p> <p>The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p><u>PUMP MANUALS</u></p> <p>There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual shall cover pump operation, maintenance, and parts.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>PLUMBING, STAINLESS STEEL AND HOSE</u></p> <p>All inlet and outlet lines shall be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's shall be equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p>All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.</p> <p><u>MAIN PUMP INLETS</u></p> <p>A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.</p> <p><u>SHORT SUCTION TUBE(S)</u></p> <p>The suction tube(s) on the water pump shall have short suction tube(s) installed to allow for installation of adapters, elbows or intake valves without excessive overhang.</p> <p><u>INLET VALVES WITH INTAKE RELIEF VALVE</u></p> <p>There shall be Two (2) Task Force Tips (TFT) AX Series aluminum ball intake valve(s) provided at one (1) on each side pump intake .</p> <p>The inlet connection shall be 1ST (5.0" Rigid Storz) with a cap with a matching cap and the outlet connection shall be NX (6.0" Threaded Swivel) . There shall be an eight-position adjustable 30 degree swiveling detent elbow on the inlet side of the ball intake valve.</p> <p>The ball intake valve shall be controlled with a(n) PS (Parallel) .</p> <p>If ball intake valve is to be controlled with a manual handwheel, the handwheel shall be controlled with a NFPA compliant slow-close hand wheel. A position indicator shall be provided to allow for a quick visualization of the status of the valve in the open, closed or transition position.</p> <p>If the ball intake valve is to be electrically controlled, the ball intake valve shall be controlled by a remote panel-mounted push-button switch with LED lights for a quick visualization of the status of the valve in the open, closed or transition position. The push button switch shall be mounted on the pump operator's panel.</p> <p>The ball intake valve shall be equipped with a standard adjustable pressure relief valve. The relief valve shall have a working range of 90 PSI to 300 PSI.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>A 3/4" TFT bleeder/drain valve shall be provided on the ball intake valve to exhaust excess air or water from the valve.</p> <p>For corrosion protection the aluminum casting shall have a hard coat anodized finish, with a powder coated internal and external finish. All the components facing the wet side of the valve shall be constructed from stainless steel.</p> <p><u>MAIN PUMP INLET CAP</u></p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>VALVES</u></p> <p>All ball valves shall be Akron® Brass in-line valves. The Akron valves shall 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.</p> <p>Valves shall have a ten (10) year warranty.</p> <p>The location of the valve for the one (1) inlet shall be recessed behind the pump panel.</p> <p><u>INLET CONTROL</u></p> <p>The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.</p> <p><u>LEFT SIDE INLET</u></p> <p>There shall 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.</p> <p>The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p><u>RIGHT SIDE INLET</u></p> <p>There shall 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.</p> <p>The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p><u>FRONT INLET</u></p> <p>A 6.00" inlet front inlet that extends through the front bumper extension on the right side shall be provided.</p> <p>The plumbing shall consist of 5.00" black iron pipe and a 5.00" Jamesbury butterfly valve . Only radius elbows shall be used in the piping, no mitered joints.</p> <p>Drains shall be furnished in all the low points of piping and have .75" valves with T swing handle.</p> <p>There shall be one (1) bleeder valve near the font inlet valve control.</p> <p>Die cast zinc screens shall be provided at the front inlet connection.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>FRONT INLET CONTROL</u> The front inlet shall be gated with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve or an indicator shall be provided to show when the valve is closed.</p> <p>There shall be an electric valve controller provided. The control shall be momentary to allow the valve to be gated for ease of operation. Indicator lights shall be provided to show if the valve is open or closed.</p> <p><u>FRONT INLET INTAKE RELIEF VALVE</u> An Elkhart Brass Style 40 intake pressure relief valve shall be provided on the inlet side of the valve preset at 125 psig.</p> <p>The pressure relief valve shall be adjustable from 75 to 250 psi.</p> <p>The outlet shall be 2.50" National Standard hose thread and terminate below the frame rails and shall have a "do not cap" warning tag near the discharge outlet.</p> <p><u>FRONT INLET PIPING</u> The piping for the front inlet shall extend thru the front bumper and terminate with a chrome plated National Standard hose thread adapter, so that the adapter threads protrude just far enough to allow a hose coupling to be installed.</p> <p><u>FRONT INLET CAP</u> The front inlet shall have National Standard hose threads with a long handle cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p>The cap shall be fabricated from brass material.</p> <p><u>INLET BLEEDER VALVE</u> A 0.75" bleeder valve shall be provided for each side gated inlet.</p> <p>The valves shall be located behind the panel with a "T" swing style handle control extended to the outside of the panel.</p> <p>The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>TANK TO PUMP</u> The booster tank shall be connected to the intake side of the pump with stainless steel piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><u>TANK REFILL</u> A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p><u>DISCHARGE OUTLET CONTROLS</u> The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.</p> <p><u>SWING CONTROLS</u> There shall be Nine (9) discharge outlets controlled by a vertical swing style control. These controls shall be located on the following discharges front bumper, (2) DS 2-1/2", (1) PS 2-1/2", Rear 2-1/2", .</p> <p><u>LEFT SIDE DISCHARGE OUTLETS</u> There shall be Two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>LEFT SIDE OUTLET ELBOWS</u> The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>RIGHT SIDE DISCHARGE OUTLETS</u> There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>RIGHT SIDE OUTLET ELBOWS</u> The 2.50" discharge outlets located on the right side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>LARGE DIAMETER DISCHARGE OUTLET</u> There shall be a 4.00" discharge outlet with a 4.00" Akron valve installed on the right side of the apparatus, terminating with a 4.00" (M) National Standard hose thread adapter. This discharge outlet shall be actuated with a handwheel control at the pump operator's control panel.</p> <p>An indicator shall be provided to show when the valve is in the closed position.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>LARGE DIAMETER OUTLET ELBOWS</u> The 4.00" outlet(s) shall be furnished with one (1) 4.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.</p> <p><u>FRONT DISCHARGE OUTLET</u> There shall be one (1) 1.50" discharge outlet piped to the front of the apparatus and located in the center bumper tray.</p> <p>Plumbing shall consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 1.50" NST with 90 degree stainless steel swivel.</p> <p>There shall be automatic drains provided at all low points of the piping.</p> <p><u>REAR DISCHARGE OUTLET</u> There shall be One (1) discharge outlet piped to the rear of the hose bed, left side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel.</p> <p><u>REAR OUTLET ELBOWS</u> The 2.50" discharge outlets located at the rear of the apparatus shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>FRONT OF HOSE BED DISCHARGE OUTLET</u> There shall be Two (2) discharge outlets located at the front of the hose bed, on left side. Plumbing shall consist of 2.00" piping with a 2.00" full-flow ball valve controlled at the pump operator's panel. The discharges shall terminate with an 1.50" (M) National Standard hose thread adapter.</p> <p><u>DISCHARGE CAPS/ INLET PLUGS</u> Chrome plated, rocker lug, caps with chain shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.</p> <p>Chrome plated, rocker lug, plugs with chain shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.</p> <p>The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>OUTLET BLEEDER VALVE</u> A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a T swing style handle control extended to the outside of the side pump panel.</p> <p>The handles shall be chrome plated and provide a visual indication of valve position.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The T swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.</p> <p>Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>DELUGE RISER</u> A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel.</p> <p>Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.</p> <p><u>MONITOR</u> An Akron Model 3433 Apollo Hi-Riser monitor shall be properly installed on the deluge riser.</p> <p>A fixed mounting base and a portable base with two (2) 2.50" inlets shall be provided.</p> <p>A position sensor shall be provided on the monitor that shall activate the "do not move apparatus" light inside the cab when the monitor is in the raised position.</p> <p>The monitor shall be painted as provided by monitor manufacturer.</p> <p><u>NOZZLE, DELUGE</u> Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.</p> <p>The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".</p> <p>This shall include an Akron 3488 pyrolite stream shaper.</p> <p>The deluge riser shall have male National Pipe Threads for mounting the monitor.</p> <p><u>BOOSTER HOSE REEL</u> A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the right side of the apparatus. Reel to be fabricated of aluminum and have highly polished end discs.</p> <p>A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.</p> <p>Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.</p> <p>Reel motor shall be protected from overload with a circuit breaker rated to match the motor.</p> <p>An electric rewind control switch shall be installed on the reel side pump panel.</p> <p>Booster hose, 1.00" diameter and 150 feet, with chrome plated Barway, or equal couplings shall be provided.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Working pressure of the booster hose shall be a minimum of 800 psi.</p> <p>Capacity of the hose reel shall be 200 feet of 1.00" booster hose.</p> <p>An Elkhart, model S-200, booster hose nozzle shall be provided.</p> <p><u>HOSE REEL BLOWOUT</u> one (1) hose reel blowout(s) shall be furnished to blow out any remaining water from the reel(s). The blowout shall be piped from the wet tank of the brake system to the reel, and shall be controlled at the pump operator's panel.</p> <p><u>MODIFY REEL PAYOUT.</u> Flip the plumbing neck 180 degrees and change the wiring connections.</p> <p>There shall be one (1) additional polished stainless steel roller and guide assembly mounted driver side of the cargo area inline with the booster reel.</p> <p><u>FOAM SYSTEM</u> A foam system shall not be required on this apparatus.</p> <p><u>PUMP PANEL CONFIGURATION</u> The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.</p> <p><u>PUMP AND GAUGE PANEL</u> The pump and gauge panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.</p> <p><u>PUMP ACCESS</u></p> <p><u>Right Side Panel</u> The right side upper pump panel shall be removable.</p> <p><u>Panel Fastener</u> The removable panels shall be secured with black swell latch .</p> <p>The left side pump panels shall be attached with screws.</p> <p>The right side lower pump panel (drain bank) shall be attached with screws.</p> <p><u>PUMP COMPARTMENT LIGHT</u> There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment.</p> <p>There shall be a switch accessible through a door on the pump panel included with this installation.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p>Also provided at the pump panel shall be the following:</p> <ul style="list-style-type: none"> - Master Pump Drain Control 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>THROTTLE READY GREEN INDICATOR LIGHT</u> There shall 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.</p> <p><u>OK TO PUMP INDICATOR LIGHT</u> There shall be a green indicator light installed on the pump operators panel that is activated when the pump is in Ok To Pump mode.</p> <p><u>VACUUM AND PRESSURE GAUGES</u> The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.</p> <p>The gauges shall be a minimum of 4.50" in diameter and shall have white faces with black markings, with a pressure range of 30.00" 0-300 psi.</p> <p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>Test port connections shall be provided at the pump operator's panel. One (1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They shall be marked with a label.</p> <p><u>PRESSURE GAUGES</u> The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.</p> <p>They shall be a minimum of 2.00" in diameter and the dial shall have white faces with black markings.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>Gauges shall have a pressure rating of 0-300 psi.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>WATER LEVEL GAUGE</u> There shall be an electronic water level gauge provided on the operator's panel that registers water level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The water level indicators shall be as follows:</p> <ul style="list-style-type: none"> • 100 percent = Green • 75 percent = Yellow • 50 percent = Yellow • 25 percent = Yellow • Refill = Red 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the water tank is empty.</p> <p>The level measurement shall be based on the sensing of head pressure of the fluid in the tank.</p> <p>The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from water and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The field calibratable display measures head pressure to accurately show the tank level.</p> <p><u>LIGHT SHIELD</u></p> <p>There shall be a polished, 16 gauge stainless steel light shield installed over the pump operator's panel.</p> <ul style="list-style-type: none"> • There shall be 12 volt DC white LED lights installed under the stainless steel light shield to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house. • One (1) pump panel light shall come on when the pump is in ok to pump mode. <p>There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.</p> <p><u>AIR HORN SYSTEM</u></p> <p>Two (2) Hadley round air horns with 6.00" bell shall be recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.</p> <p><u>Air Horn Location</u></p> <p>The air horns shall be located on each side of the bumper, inside of the frame rails.</p> <p><u>AIR HORN CONTROL</u></p> <p>The air horn(s) shall be activated by the following:</p> <ul style="list-style-type: none"> • Right side lanyard. The lanyard to be a link chain inside vinyl tubing. • Left side foot switch <p><u>ELECTRONIC SIREN</u></p> <p>A Whelen®, Model 295SLSA1, electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Siren head shall be located on a heavy duty swivel bracket mounted on the center console between the driver and officer seats, located within reach of the driver, exact location to be determined. The swivel bracket shall be capable of rotating a minimum of 180 degrees.</p> <p>The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>SPEAKER</u> There shall be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker shall be connected to the siren amplifier.</p> <p>The speaker(s) shall be recessed in the center of the front bumper.</p> <p><u>AUXILIARY MECHANICAL SIREN</u> There shall be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.</p> <p>The Q2B shall be chrome finish.</p> <p>The siren shall 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 shall be labeled Q2B+ at the battery. The power solenoid shall only be enabled when the emergency master switch is on.</p> <p>The siren shall have a 2-gauge ground wire connected to the chassis battery stud. The cable shall be labeled Q2B- at the battery.</p> <p>When the chassis battery switch is on, and the emergency master switch is on, the Q2B siren shall be activated by the following:</p> <p>The mechanical siren shall be recessed in the front bumper on the left side. The siren shall be supported by the bumper framework.</p> <p><u>MECHANICAL SIREN CONTROL</u> The mechanical siren shall be activated by the following:</p> <ul style="list-style-type: none"> • Left side foot switch. <p>A momentary rocker switch shall be included in the left side overhead switch panel to activate the siren brake.</p> <p>There shall be a red outline decal around the black rocker switch.</p> <p>A momentary chrome push button switch shall be included in the right side dash panel to activate the siren brake.</p> <p><u>CAB ROOF LIGHTBAR</u> There shall be one (1) 69.00" Code 3® Model 21TRPL69, LED lightbar mounted on the cab roof.</p> <p>This lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) red flashing TR6CR LED module in the driver's side rear corner position. • One (1) red flashing TR3R LED module in the driver's side end position. • One (1) red flashing TR6CR LED module in the driver's side front corner position. • One (1) red flashing TR3R LED module in the driver's side first front position. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> One (1) red flashing TR4R LED module in the driver's side second front position. One (1) red flashing TR3R LED module in the driver's side third front position. One (1) white flashing TR4W LED module in the driver's side fourth front position. One (1) red flashing TR4R LED module in the driver's side fifth front position. One (1) red flashing TR4R LED module in the driver's side sixth front position. One (1) red flashing TR4R LED module in the passenger's side sixth front position. One (1) red flashing TR4R LED module in the passenger's side fifth front position. One (1) white flashing TR4W LED module in the passenger's side fourth front position. One (1) red flashing TR3R LED module in the passenger's side third front position. One (1) red flashing TR4R LED module in the passenger's side second front position. One (1) red flashing TR3R LED module in the passenger's side first front position. One (1) red flashing TR6CR LED module in the passenger's side front corner position. One (1) red flashing TR3R LED module in the passenger's side end position. One (1) red flashing TR6CR LED module in the passenger's side rear corner position. <p>There shall be one (1) switch located in the cab on the switch panel to control this lightbar.</p> <p>The white flashing LED modules shall be disabled when the parking brake is applied.</p> <p>The center four (4) red flashing LED modules may be load managed when the parking brake is applied.</p> <p><u>FRONT ZONE LOWER LIGHTS</u></p> <p>There shall be four (4) Code 3®, Model 65**, 4.00" high x 6.00" long flashing LED warning lights provided in a common bezel above the headlights.</p> <ul style="list-style-type: none"> The driver's side front outside warning light to be red. The driver's side front inside warning light to be red. The passenger's side front inside warning light to be red. The passenger's side front outside warning light to be red. <p>The lenses shall be clear.</p> <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p>The inside lights may be load managed when the parking brake is applied.</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be six (6) Code 3®, Model 468CXBZ-75 flashing LED warning lights with bezels located on the sides of the apparatus per the following:</p> <ul style="list-style-type: none"> The location of the side front lights shall be one (1) each side on the bumper extension. The side front lights to be red. The location of the side middle lights shall be behind the crew cab door. The side middle lights to be red. The location of the side rear lights shall be over the rear wheel opening. The side rear lights to be red. The lights shall include clear lenses. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><u>SIDE WARNING LIGHTS</u></p> <p>There shall be two (2) Code 3®, Model 468CXBZ-75 LED flashing warning light(s), with bezel(s), located on the side of the apparatus on the forward hosebed side sheet, one (1) each side.</p> <p>The color of the lights shall be red.</p> <p>The color of the lens shall be clear.</p> <p>These lights shall be activated with the rear upper warning switch.</p> <p>To meet the NFPA requirements these lights shall be load managed if colored or disabled, if white, when the parking brake is set.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>Two (2) Code 3® Model 468CXBZ-75 LED flashing warning lights with bezels shall be located at the rear of the apparatus.</p> <p>The driver's side rear light to be red.</p> <p>The passenger's side rear light to be red.</p> <p>Each light shall include a clear lens.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>REAR WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen, Model WIONSM*, 1.69" high x 5.94" wide x 1.13" deep light(s) with chrome housing recessed into the rear tailboard located, Inserted in rear step/bumper..</p> <p>The light(s) to include red flashing LEDs with clear lenses.</p> <p>The light(s) shall be activated with the rear lower warning switch.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>REAR OF HOSEBED WARNING LIGHTS</u></p> <p>There shall be two (2) Code 3®, Model A36-XX, flashing 12 volt DC LED beacons provided at the rear of the apparatus as high and close to the outside as practical.</p> <ul style="list-style-type: none"> • The rear upper light(s) on the driver's side to be red. • The rear upper light(s) on the passenger's side to be red. <p>The color of the lenses shall be clear.</p> <p>The lights shall be activated when the battery switch is on, the emergency master switch is on and the upper rear warning switch is on.</p> <p>The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails as high as possible.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>120 VOLT RECEPTACLE</u> There shall 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 Drivers side rear of seat on post.. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u> There shall 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 Passenger side behind officers seat on post.. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u> There shall be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with an interior stainless steel wall plate, installed DS1 high on forward wall. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u> There shall be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with an interior stainless steel wall plate, installed RS3 High on forward wall.. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u></p> <p>There shall be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with an interior stainless steel wall plate, installed DS3 front high on forward wall.. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u></p> <p>There shall be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with an interior stainless steel wall plate, installed RS1 High of forward wall.. The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>LOOSE EQUIPMENT</u></p> <p>The following equipment shall be furnished with the completed unit:</p> <ul style="list-style-type: none"> • One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit <p><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p> <ul style="list-style-type: none"> • 800 ft (60 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 (750 L/min) minimum. • Two (2) handline nozzles, 95 gpm (360 L/min) minimum. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • One (1) smoothbore of combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm. • One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s). • One (1) first aid kit. • Four (4) combination spanner wrenches. • Two (2) hydrant wrenches. • One (1) double female 2.50" (65 mm) adapter with National Hose threads. • One (1) double male 2.50" (65 mm) adapter with National Hose threads. • One (1) rubber mallet, for use on suction hose connections. • Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, 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. • One (1) automatic external defibrillator (AED). • Four (4) ladder belts meeting the requirements of NFPA 1983, <i>Standard on Fire Service Life Safety Rope and System Components</i> (if equipped with an aerial device). • If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus. • If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. • If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake. • If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake. <p><u>SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.8.2.1 requires a minimum of 20' of suction hose or 15' of supply hose shall be carried.</p> <p>Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PAINT</u> The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:</p> <ol style="list-style-type: none"> 1. <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate. 2. <u>Chemical Cleaning and Pretreatment</u> - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall 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. 3. <u>Surfacer Primer</u> - The Surfacer Primer shall 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. 4. <u>Finish Sanding</u> - The Surfacer Primer shall 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. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>5. <u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacers Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.</p> <p>6. <u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment.</p> <p>7. <u>Clear Coat</u> - Two (2) coats of Clear Coat shall 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 shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer.</p> <p>After the cab and body are painted, the color shall be verified to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.</p> <p>All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.</p> <p>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. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.</p> <p><u>PAINT - ENVIRONMENTAL IMPACT</u></p> <p>Contractor shall meet or exceed all current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:</p> <ul style="list-style-type: none"> • Topcoats and primers shall be chrome and lead free. • Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals. • Particulate emission collection from sanding operations shall have a 99.99% efficiency factor. • Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98.00%. Water wash systems shall be 99.97% efficient • Water from water wash booths shall be reused. Solids shall 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 shall be recycled to recover the metal. • Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse. 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, 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.</p> <p><u>CAB TWO-TONE PAINT</u> The cab shall be painted two-tone with the upper section painted #101 black and the lower section painted #90 red. There shall be a standard two-tone cab paint break provided.</p> <p>There shall be a standard cab shield provided.</p> <p><u>BODY PAINT</u> The body shall be painted to match the lower section of the cab.</p> <p><u>GALVANIZED CHASSIS FRAME ASSEMBLY</u> The chassis frame assembly shall be hot dip galvanized before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.</p> <p>Components that are included with the chassis frame assembly that shall be hot dip galvanized are:</p> <ul style="list-style-type: none"> • Frame rails • Cross members • Front frame extension <p>All galvanized components are inspected for compliance with ASTM specifications.</p> <p>Battery boxes shall be stainless steel.</p> <p>All components that are not galvanized shall be painted primer and gloss paint to match the lower job color.</p> <p><u>PAINT, FRONT WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>PAINT, REAR WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>AXLE HUB PAINT</u> All axle hubs shall be painted black #101.</p> <p><u>COMPARTMENT INTERIOR PAINT</u> The interior of all compartments shall be painted with a gray spatter type paint.</p> <p><u>REFLECTIVE BAND PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 15.9.3.1 requires a retroreflective stripe be affixed to at least 50 percent of the cab and body length on each side, excluding the pump panel areas.</p> <p>The retroreflective stripe is not on the apparatus as manufactured. The fire department shall provide the stripe.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>REAR CHEVRON STRIPING</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.</p> <p>The colors shall be red and fluorescent yellow green diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><u>CAB DOOR REFLECTIVE STRIPE</u> A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><u>FIRE APPARATUS PARTS MANUAL</u> There shall be one (1) custom parts manual(s) in USB flash drive format for the complete fire apparatus provided.</p> <p>The manual(s) shall contain the following:</p> <ul style="list-style-type: none"> • 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 <p>Each manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>Service Parts Internet Site</u> The service parts information included in these manuals are also available on the factory 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.</p> <p><u>CHASSIS SERVICE MANUALS</u> There shall be one (1) chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit.</p> <p>The manual shall contain the following sections:</p> <ul style="list-style-type: none"> • Job number • Table of contents • Troubleshooting • Front Axle/Suspension 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Brakes • Engine • Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing • Appendix <p>The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>CHASSIS OPERATION MANUAL</u> The chassis operation manual shall be provided on one (1) USB flash drive.</p> <p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u> Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>ENGINE WARRANTY</u> A Cummins five (5) year limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>STEERING GEAR WARRANTY</u> A TRW one (1) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u> The chassis frame shall be provided with a fifty (50) year material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FRONT AXLE WARRANTY</u> A Eaton five (5)-year/100,000 mile parts and labor warranty shall be provided.</p> <p><u>REAR AXLE WARRANTY</u> A Eaton five (5)-year/100,000 mile parts and labor warranty shall be provided.</p> <p><u>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> A Meritor Wabco™ ABS brake system three (3) year limited warranty shall be provided.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u> The new cab shall be provided with a ten (10) year material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u> Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FIVE (5) YEAR MATERIAL AND WORKMANSHIP</u> The electronic modules and display(s) shall be provided with a five (5) year material and workmanship limited warranty. The warranty shall cover electronic modules to be free from failures caused by defects in material and workmanship.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>COMPARTMENT LIGHT WARRANTY</u> A ten (10) year material and workmanship limited warranty shall be provided for the Pierce 12 volt DC LED strip lights. The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TRANSMISSION WARRANTY</u> The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><u>TRANSMISSION COOLER WARRANTY</u> The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed \$10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>WATER TANK WARRANTY</u> The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u> Each new piece of apparatus shall be provided with a ten (10) year material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A six (6) year limited warranty shall be provided on painted and satin roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>PUMP WARRANTY</u></p> <p>The Hale five (5) year limited warranty on parts and two (2) year limited warranty on labor shall be provided for the pump.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>VEHICLE STABILITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid.</p> <p><u>ENGINE INSTALLATION CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall 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 shall be provided at the time of delivery.</p> <p><u>POWER STEERING CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><u>CAB INTEGRITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>been tested and certified by an independent third party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below:</p> <ul style="list-style-type: none"> • European Occupant Protection Standard ECE Regulation No.29. • SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks. • SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks. <p><u>Roof Crush</u> The cab shall be subjected to a roof crush force of 22,500 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.</p> <p><u>Side Impact</u> The same cab shall be subjected to dynamic preload where a 13,275-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 shall see in a rollover incident.</p> <p><u>Frontal Impact</u> The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.</p> <p><u>Additional Frontal Impact</u> The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)</p> <p>The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.</p> <p>There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><u>CAB DOOR DURABILITY CERTIFICATION</u> Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall 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.</p> <p><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u> Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.</p> <p><u>ELECTRIC WINDOW DURABILITY CERTIFICATION</u> Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design shall complete 30,000 complete up-down cycles and still function normally when finished. The bidder shall certify that sample doors and windows similar to those provided on the</p>		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<p>apparatus have been tested and have met these criteria without malfunction or significant component wear.</p> <p><u>SEAT BELT ANCHOR STRENGTH</u> Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.</p> <p><u>SEAT MOUNTING STRENGTH</u> Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify, at time of delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p> <p><u>PERFORMANCE CERTIFICATIONS</u></p> <p><u>Cab Air Conditioning</u> 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 shall cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.</p> <p><u>Cab Defroster</u> Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall 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 shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.</p> <p><u>Cab Auxiliary Heater</u> 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 shall 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 shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.</p> <p><u>AMP DRAW REPORT</u> The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: <ul style="list-style-type: none"> ○ The nameplate rating of the alternator. ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). 		

ANN ARBOR FIRE DEPARTMENT
ENFORCER CUSTOM CHASSIS SIDE MOUNT PUMPER

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		