Rialto Fire Department

Spartan/Smeal Type 1 Unibody Pumper

Sales Rep: Scott Beck

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Quotation

			Description
VEHICLE			
S	0100-011	**MODEL**	Metro Star
O	8012-002	**CUSTOMERS / OEMS**	Smeal (02070)[1002812]
A	8011X8011-024	**MODEL YEAR**	Model Year - 2024
S	8001-001	**COUNTRY OF SERVICE**	Country of Service United States Of America
S	8017-009	**CAB AND CHASSIS LABELING LANGUAGE**	Cab and Chassis Labeling Language English w/Innovative Controls Labels
S	8006-009	**APPARATUS TYPE**	Apparatus Type Pumper
S	8008-001	**VEHICLE TYPE**	Vehicle Type Straight Truck
S	8008A-000	**VEHICLE ANGLE OF APPROACH PACKAGE**	Vehicle Angle of Approach NFPA Minimum 8.00 Degrees
S	0104-001	**AXLE CONFIGURATION**	Axle Configuration 4x2 (Rear Axle Drive Only)
S	0101-003	**GROSS AXLE WEIGHT RATINGS FRONT**	GAWR Front 20000#
O	0102-003	**GROSS AXLE WEIGHT RATINGS REAR**	GAWR Rear 24000#
S	8010-201	**PUMP PROVISION**	Pump Provision Driveline Midship, Pump Mode Prog w/Auto Park Brake "N"
O	8009-004	**WATER & FOAM TANK CAPACITY**	Water & Foam Tank Capacity Up to 750 Gallons
CAB			
S	1000-004	**CAB STYLE**	Cab Style MFD 10" Raised Roof
O	8101-200	**OCCUPANT PROTECTION**	Occupant Protection IMMI 4Front & RollTek w/SRA
O	1501-001	**CAB FRONT FASCIA**	Cab Frt Fascia Evolution
O	1518-026	**FRONT GRILLE**	Cab Frt Grille Hinged Evolution
S	1551-002	**CAB UNDERCOAT**	Cab Undercoat
S	1552-002	**CAB SIDE DRIP RAIL**	Cab Side Drip Rail
S	1521-001	**CAB PAINT EXTERIOR**	Cab Paint Exterior Single Color
O	1533-002	**CAB PAINT PROCESS/MANUFACTURER**	Cab Paint Process/Manufacturer Sikkens
O	1522-1744	**CAB PAINT PRIMARY/LOWER COLOR**	Cab Paint Primary/Lower Color Sikkens Red FLNA 30194
S	8013-056	**CAB PAINT WARRANTY**	Cab Paint Warranty (10) Year RFW0710
O	1380-001	**CAB INTERIOR/COMPONENT COATING**	Cab Interior/Component Coating Mixed
S	1334-036	**CAB PAINT INTERIOR**	Cab Paint Int Multi-tone Silver Gray
S	1005-001	**CAB ENTRY DOORS**	Cab Entry Doors (4)
O	1101-102	**CAB ENTRY DOOR TYPE**	Cab Entry Door Type Barrier Free w/Pollak Switches
S	1322-007	**CAB INSULATION**	Cab Insulation Nonwoven Polyester Fiber
O	1556-009	**LH MID EMS COMPARTMENT**	LH Mid EMS Compartment 26"H w/Offset to 24"W Chamfered Corner
A	1558X1558-007	**LH MID EMS COMPARTMENT EXTERIOR ACCESS**	LH Mid EMS Cmpt Ext Access 26"H Hng Dr
O	1560-002	**LH MID EMS COMPARTMENT INTERIOR**	LH Mid EMS Cmpt Interior Solid Wall No Access

O	1566-003	**LH MID EMS COMPARTMENT DOOR HARDWARE**	LH Mid EMS Cmpt Door Hardware Eberhard Hndl
O	1557-008	**RH MID EMS COMPARTMENT**	RH Mid EMS Compartment 26"H w/Offset to 24"W Chamfered Corner
A	1559X1559-007	**RH MID EMS COMPARTMENT EXTERIOR ACCESS**	RH Mid EMS Cmpt Ext Access 26"H Hng Dr
O	1561-002	**RH MID EMS COMPARTMENT INTERIOR**	RH Mid EMS Cmpt Interior Solid Wall No Access
O	1567-003	**RH MID EMS COMPARTMENT DOOR HARDWARE**	RH Mid EMS Cmpt Door Hardware Eberhard Hndl
O	5384-002	**MID EMS COMPARTMENT LIGHTING**	Mid EMS Compartment Lighting LED
O	1535-016	**MID EMS COMPARTMENT EXTERIOR FINISH**	Mid EMS Cmpt Ext Finish Multi-tone Silver Gray
O	1536-002	**MID EMS COMPARTMENT INTERIOR FINISH**	Mid EMS Cmpt Interior Finish DA Sand
O	1001-013	**REAR CAB ROOF MODIFICATION**	Rear Cab Roof Modification Rear Cab Extension 10" RR/13.5" Extension
S	8004-033	**CAB STRUCTURAL WARRANTY**	Cab Structural Warranty (10) Year RFW0602
S	9001-006	**CAB TEST INFORMATION**	Cab Test Information Crash Test ECE-R29/SAE J2420/SAE J2422

ELECTRICAL POWER DISTRIBUTION

S	5000-018	**ELECTRICAL SYSTEM**	Elec System 12V DC Multiplex
O	5008-072	**OEM WIRING**	OEM Wir Smeal ECM Park Brake Input
O	5005-218	**VEHICLE DISPLAY**	Vehicle Display Weldon Touchscreen IV (2) L/R Sw Pnl
S	5004-002	**LOAD MANAGEMENT SYSTEM**	Load Management System Multiplex
S	5622-003	**DATA RECORDING SYSTEM**	Data Recording Sys Vehicle Data Weldon MUX
O	5031-012	**ACCESSORY POWER**	Accessory Pwr & Gnd Stud 40A Batt Dir & 15A Ign Sw & 225A Mstr Sw w/Fus OEM Conn
O	5030-066	**AUXILIARY ACCESSORY POWER**	Aux Acc Pwr & Gnd Stud Bhd Sw Pnl 60A Mstr Sw
O	5032-087	**ADDITIONAL ACCESSORY POWER**	Addl Acc Pwr & Gnd Stud Bhd Sw Pnl 60A Batt Dir
O	5033-080	**EXTRA ACCESSORY POWER**	Extra Acc Pwr 10 Fuse Pnl Eng Tnl Bhd Off w/60A Fuse Batt Dir
O	5034-037	**ANCILLARY ACCESSORY POWER**	Ancillary Acc Pwr 6 Fuse Blue Sea Pnl Bhd Drv Seat On Tnl w/40A Fuse Batt Dir
S	5011-001	**EXTERIOR ELECTRICAL TERMINAL COATING**	Exterior Electrical Terminal Coating Spray On Plasti Dip
S	8014-002	**ELECTRICAL SYSTEM WARRANTY**	Electrical System Warranty (2) Year RFW0202

ENGINE

O	1701-183	**ENGINE**	Engine Diesel 450HP/1650Ft-Lbs Cummins X10 HHD - EPA 2027
S	1329-001	**CAB ENGINE TUNNEL**	Cab Engine Tunnel Small/Medium
S	1731-002	**DIESEL PARTICULATE FILTER CONTROLS**	DPF Ctrl Regeneration Sw & Inhibit Sw
S	1718-002	**ENGINE PROGRAMMING HIGH IDLE SPEED**	Engine Programming High Idle Speed 1250 RPM
S	1719-005	**ENGINE HIGH IDLE CONTROL**	Engine High Idle Ctrl Automatic and Manual w/Disp Actv
S	1710-001	**ENGINE PROGRAMMING ROAD SPEED GOVERNOR**	Engine Programming Road Speed Governor Enabled
S	1713-010	**AUXILIARY ENGINE BRAKE**	Aux Engine Brake Compression Brake w/VG Turbo

O	1708-004	**AUXILIARY ENGINE BRAKE CONTROL**	Aux Engine Brake Ctrl On/Off & Low/Med/High Sw Pnl
S	1720-003	**ELECTRONIC ENGINE OIL LEVEL INDICATOR**	Elec Engine Oil Level Indicator
O	1715-023	**FLUID FILLS**	Fluid Fills Under Cab w/Oil Check Fwd
S	1735-001	**ENGINE DRAIN PLUG**	Engine Drain Plug
S	8002-001	**ENGINE WARRANTY**	Engine Warranty Cummins (5) Year/100,000 Miles
S	1707-116	**REMOTE THROTTLE HARNESS**	Rmt Throttle Harness Cab Harness Only Shift Interlock
S	1721-001	**ENGINE PROGRAMMING REMOTE THROTTLE**	Engine Program Rmt Throttle Off
S	1727-001	**ENGINE PROGRAMMING IDLE SPEED**	Engine Programming Idle Speed 700 RPM

AIR INTAKE

S	2801-010	**ENGINE AIR INTAKE**	Engine Air Intake Filtration and Restriction w/Replaceable Element Abv Radiator

COOLING

O	2704-018	**ENGINE FAN DRIVE**	Engine Fan Drive Variable Speed Engaged in Pump Mode
S	2701-021	**ENGINE COOLING SYSTEM**	Engine Cooling System Serial Flow w/Package Drop-Out Prov
S	2711-005	**ENGINE COOLING SYSTEM PROTECTION**	Engine Cooling System Protection Light Duty Skid Plate Paint Frame Color
S	2708-001	**ENGINE COOLANT**	Engine Coolant Extended Life
S	2706-003	**ELECTRONIC COOLANT LEVEL INDICATOR**	Elec Low Coolant Level Indicator
S	2709-001	**COOLANT HOSES**	Coolant Hoses Silicone
S	2710-005	**ENGINE COOLANT OVERFLOW BOTTLE**	Engine Coolant Overflow Expansion Bottle
A	2705X2705-002	**ENGINE PUMP HEAT EXCHANGER**	Engine Pump Heat Exchanger

EXHAUST

A	2901X2901-067	**ENGINE EXHAUST SYSTEM**	Eng Exhaust Sys Under Frm RH Single Module Aftertreatment Outboard
O	2907-024	**DIESEL EXHAUST FLUID TANK**	Diesel Exhaust Fluid Tank LH 5 Gal Fill Thru Rr Step w/Addl Cap Label
O	2902-004	**ENGINE EXHAUST ACCESSORIES**	Engine Exhaust Acc Extraction Plymovent
S	2906-002	**ENGINE EXHAUST WRAP**	Engine Exhaust Wrap
O	8018-006	**EMISSIONS SYSTEM WARRANTY**	Emissions System Warranty (10) Years Heavy HDE/450K Miles/22K Hours RFW0144
S	8018A-002	**REGULATED EMISSIONS WARRANTY TIRES**	Regulated Emissions Warranty Tires (2) Years/24,000 Miles RFW0145
S	8018B-002	**REGULATED EMISSIONS WARRANTY AIR CONDITIONING**	Regulated Emissions Warranty Air Conditioning (5) Years/100,000 Miles RFW0146

TRANSMISSION

O	1801-017	**TRANSMISSION**	Transmission Allison 4000 EVS
O	1806-006	**TRANSMISSION MODE PROGRAMMING**	Transmission Mode Programming 6th Startup/6th Mode S1/S1 Omit Economy Mode

S	1811-004	**TRANSMISSION FEATURE PROGRAMMING**	Transmission Feature Programming Allison Gen 5 & 6-E I/O Package 198/Pumper
S	1807-005	**TRANSMISSION SHIFT SELECTOR**	Transmission GEN 5 & 6-E Shift Sel Key Pad/Push Button
S	1815-002	**ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR**	Elec Transmission Oil Level Indicator
S	1814-002	**TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE**	2nd Gear Pre-Select
S	1808-007	**TRANSMISSION COOLING SYSTEM**	Transmission Cooling System
S	1817-001	**TRANSMISSION DRAIN PLUG**	Transmission Drain Plug
S	8005-001	**TRANSMISSION WARRANTY**	Transmission Warranty Allison (5) Year

POWER TAKE OFF

O	2004-004	**LH PTO**	LH PTO Cust Installed
O	2001-155	**LH PTO MODEL**	LH PTO Model Chelsea 281-GSFJP-B8RK
O	2005-008	**PTO LOCATION**	PTO Location 8:00/1:00
O	2015-038	**LH PTO CONTROL**	LH PTO Ctrl Prog Rkr Red Actv Enabled In Motion Prewire
O	2007-011	**PTO PROGRAMMING**	PTO Programming Engine Engage 0900/Oper 4000 Transmission Engage 250/Oper 5000

DRIVELINE

O	3001-015	**DRIVELINE**	Driveline MSI 1810 w/Meritor U-Joints w/Thrust Washers
O	3004-003	**DRIVELINE GUARDS**	Driveline Guards (2)
O	3005-008	**MIDSHIP PUMP / GEARBOX**	Midship Pump OEM Installed w/NO Jackshaft

FUEL SYSTEMS

S	3109-067	**FUEL FILTER/WATER SEPARATOR**	Fuel Filter/Wtr Separator Fleetguard FS20121 w/Lt & Alarm
S	3111-001	**FUEL LINES**	Fuel Lines Nylon
S	3103-008	**ELECTRIC FUEL PRIMER**	Electric Fuel Primer Engine Sply Electric Lift Pump
O	3112-018	**FUEL COOLER**	Fuel Cooler w/Active Cooling Fan/Temp Ctrl Sw
O	3101-102	**FUEL TANK**	Fuel Tank 68 Gallon
S	3130-001	**FUEL TANK MATERIAL AND FINISH**	Fuel Tank Material Steel & Finish Painted Frame Components Color
S	3131-001	**FUEL TANK STRAP MATERIAL AND FINISH**	Fuel Tank Strap Material Steel & Finish Painted Frame Components Color
O	3102-016	**FUEL TANK FILL PORT**	Fuel Tank Fill Port LH Mid/RH Mid/LH Fwd
O	3114-002	**FUEL TANK SERVICEABILITY PROVISIONS**	Fuel Tank Serviceability Prov 8' Fuel Line Extension
S	3115-002	**FUEL TANK DRAIN PLUG**	Fuel Tank Drain Plug Magnetic

FRONT AXLE

O	2401-027	**FRONT AXLE**	Frt Axle Reyco Granning ResponseMaster IFS Air 18000-20000#
O	8059-003	**FRONT AXLE WARRANTY**	Front Axle Warranty IFS
S	2405-001	**FRONT WHEEL BEARING LUBRICATION**	Frt Wheel Bearing Lube Oil

FRONT SUSPENSION

O	2502-005	**FRONT SHOCK ABSORBERS**	Frt Shock Absorbers Koni Non-Adjustable
O	2501-010	**FRONT SUSPENSION**	Frt Suspension IFS 18000-20000#

STEERING

S	2601-006	**STEERING COLUMN/WHEEL**	Steering Column/Wheel Tilt/Telescopic 18" 4 Spoke
S	2609-002	**ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR**	Elec Power Steering Fluid Level Indicator
S	2603-011	**POWER STEERING PUMP**	Power Steering Pump TRW w/Passive Cooler
O	2606-007	**FRONT AXLE CRAMP ANGLE**	Front Axle Cramp Angle 53 Degrees
O	2610-006	**POWER STEERING GEAR**	Power Steering Gear TRW TAS 85/RCS 85
S	2608-001	**CHASSIS ALIGNMENT**	Chassis Alignment

REAR AXLE

O	3401-002	**REAR AXLE**	Rear Axle 24000# Meritor RS-24-160
S	3403-001	**REAR AXLE DIFFERENTIAL LUBRICATION**	Rear Axle Differential Lubrication Oil
A	8061X8061-019	**REAR AXLE WARRANTY**	Rear Axle Warranty Meritor 2024
S	3411-001	**REAR WHEEL BEARING LUBRICATION**	Rear Wheel Bearing Lubrication Oil
S	3408-008	**VEHICLE TOP SPEED**	Vehicle Top Speed 68 MPH
S	3410-001	**REAR AXLE EXTERNAL VENT**	Rear Axle External Vent OEM Housing Breather

REAR SUSPENSION

O	3501-031	**REAR SUSPENSION**	Rear Susp Hendrickson FireMaax Air 24000#
O	3503-003	**REAR SHOCK ABSORBERS**	Rear Shock Absorbers Suspension Sply

TIRES

S	3625-002	**TIRE INTERMITTENT SERVICE RATING**	Tire Intermittent Service Ratings Acceptable
S	3601-045	**FRONT TIRE**	Frt Tire 315/80R 22.5 Michelin XZUS 2
S	3602-012	**REAR TIRE**	Rear Tire 12R 22.5 Michelin XDN2
O	3413-513	**REAR AXLE RATIO**	Rear Axle Ratio 5.13
S	3614-030	**TIRE PRESSURE INDICATOR**	Tire Pressure Ind Frt & Rr LED

WHEELS

O	3701-037	**FRONT WHEEL**	Frt Wheel Alcoa Dura-Bright 22.5 x 9.00 Alum
O	3703-050	**REAR WHEEL**	Rr Whl Alcoa Dura-Bright 22.5 x 9.00 Alum
O	3719-003	**BALANCE WHEELS AND TIRES**	Balance Wheels & Tires Counteract Beads
O	3702-002	**WHEEL TRIM**	Wheel Trim Hub & Nut Covers SS Shiploose

BRAKES

S	3205-014	**BRAKE SYSTEM**	Brake System ABS/ATC/ESC Sgl Axle Disp Actv
O	3206-009	**FRONT BRAKES**	Frt Brakes Bendix ADB22X Disc 17"

O	3207-001	**REAR BRAKES**	Rr Brakes S-Cam Drum 16.5" x 7"
S	3208-001	**PARK BRAKE**	Prk Brake Rr Wheels Only
O	3219-002	**SUPPLEMENTAL BRAKE**	Supplemental Brake Frt Service Brakes Prk Brk Actv
O	3204-030	**PARK BRAKE CONTROL**	Prk Brake Ctrl Sw Pnl Mnt LH Pnl
S	3214-001	**REAR BRAKE SLACK ADJUSTERS**	Rr Brake Slack Adjusters Meritor
S	3202-001	**AIR DRYER**	Air Dryer Wabco System Saver 1200 Bhd RH Step
O	3215-006	**FRONT BRAKE CHAMBERS**	Frt Brake Chambers IFS Type 24
S	3210-015	**REAR BRAKE CHAMBERS**	Rr Brake Chambers TSE 30/36 Long Stroke

AIR SUPPLY SYSTEMS

S	3320-001	**AIR COMPRESSOR**	Air Compressor Wabco SS318 18.7 CFM
S	3339-004	**AIR GOVERNOR**	Air Governor Mnt on Air Dryer Bracket
O	3303-002	**MOISTURE EJECTORS**	Moisture Ejectors w/Cable
O	3307-003	**AIR SUPPLY LINES**	Air Sply Lines Nylon w/Compression Fittings/Protective Loom
O	3309-033	**AIR INLET CONNECTION**	Air Inlet Connection
O	3349-002	**AIR INLET LOCATION**	Air Inlet Location LH Lwr Frt Step Fwd
O	3326-002	**AIR INLET/OUTLET FITTING TYPE**	Air Inlet/Outlet Manual Conn Tru-Flate Interchange 1/4"
S	3338-002	**REAR AIR TANK MOUNTING**	Rear Air Tank Mnt Any Bhd Rear Axle Perpendicular w/Frame

FRAME

O	2103-1780	**WHEELBASE**	Wheelbase 178.0"
O	2106-0560	**REAR OVERHANG**	Rear Overhang 56.0"
S	2101-002	**FRAME**	Frame Double Channel 35.00" Width
O	2117-004	**FRAME CLEAR AREA**	Frame Clear Area Inside/Outside Rail 30" Rwd Back of Cab
O	2110-215	**FRAME PAINT**	Frame Paint Hot Dipped Galvanized - Frame Only Ptd Primary/Lower Cab Color
S	8007-036	**FRAME ASSEMBLY STRUCTURAL WARRANTY**	Frame Assembly Structural Warranty (50) Year RFW0305
S	8019-003	**FRAME RAIL CORROSION WARRANTY**	Frame Rail Corrosion Warranty (25) Year RFW0316
S	8022-004	**FRAME COMPONENTS CORROSION WARRANTY**	Frame Components Corrosion Warranty (3) Year RFW0315

BUMPER

O	2201-002	**FRONT BUMPER**	Frt Bumper Structural Steel Channel Severe Duty
O	2202-003	**FRONT BUMPER EXTENSION LENGTH**	Frt Bumper Extension Length 16"
O	2206-012	**FRONT BUMPER PAINT**	Frt Bumper Paint Primary/Lower Cab Color w/Bedliner Black Bumper Trim
A	2227X2227-010	**FRONT BUMPER TRIM**	Frt Bumper Trim SS Painted Band Frt Top Edge & Corners Below Apron
O	2208-004	**FRONT BUMPER APRON**	Frt Bumper Apron For 16" Extension
O	2237-004	**FRONT BUMPER DISCHARGE**	Front Bumper Discharge 2.0" LH Frame Mnt Plumbing
O	2211-043	**FRONT BUMPER COMPARTMENT CENTER**	Frt Bumper Cmpt Ctr w/Notched Cover LH Side
O	2210-002	**FRONT BUMPER COMPARTMENT COVER HARDWARE**	Frt Bumper Cmpt Cover Hardware Gas Cylinder/D-Ring
O	5503-021	**MECHANICAL SIREN**	Mechanical Siren Federal Signal Q2B Recess Mnt

O	2218-016	**MECHANICAL SIREN LOCATION**	Mech Siren Location Frt Bmpr Face RH OB
O	5511-003	**MECHANICAL SIREN ACCESSORIES**	Mechanical Siren Accessories Guards
S	5501-020	**AIR HORN**	Air Horn (2) 21" Round Hadley E-Tone
S	2216-010	**AIR HORN LOCATION**	Air Horn Location (2) Frt Bmpr Face R/L IB
S	2232-002	**AIR HORN RESERVOIR**	Air Horn Reservoir (1) 1200 Cu In
O	5504-060	**ELECTRONIC SIREN SPEAKER**	Elect Siren Speaker 100W Federal Signal Dynamax w/EF Grille
O	2217-002	**ELECTRONIC SIREN SPEAKER LOCATION**	Elec Siren Speaker Location Frt Bmpr Face LH OB
O	2204-007	**FRONT BUMPER TOW EYES**	Frt Bumper Tow Eyes 2" Painted Through

CAB TILT

S	2301-001	**CAB TILT SYSTEM**	Cab Tilt System
O	2302-005	**CAB TILT AUXILIARY PUMP**	Cab Tilt Aux Pump Manual Mnt w/Tilt Pump
O	2303-003	**CAB TILT LIMIT SWITCH**	Cab Tilt Limit Sw Preset Limit
S	2305-001	**CAB TILT CONTROL RECEPTACLE**	Cab Tilt Ctrl Receptacle Temp
S	2306-002	**CAB TILT LOCK DOWN INDICATOR**	Cab Tilt Lock Down Indicator

CAB GLASS

A	1401X1401-009	**CAB WINDSHIELD**	Cab Windshield
O	1402-002	**GLASS FRONT DOOR**	Glass Frt Dr Pwr
O	1407-002	**GLASS TINT FRONT DOOR**	Glass Tint Frt Dr Automotive Dark Gray
O	1419-008	**GLASS REAR DOOR RIGHT HAND**	Glass Rr Dr RH Pwr
O	1430-002	**GLASS TINT REAR DOOR RIGHT HAND**	Glass Tint Rr Door RH Automotive Dark Gray
O	1412-008	**GLASS REAR DOOR LEFT HAND**	Glass Rr Dr LH Pwr
O	1431-002	**GLASS TINT REAR DOOR LEFT HAND**	Glass Tint Rr Door LH Automotive Dark Gray

CLIMATE CONTROL

A	1640X1640-004	**CABIN AIR FILTRATION**	Cabin Air Filtration System SGM w/HEPA Filter Eng Tunnel Rear w/Disp Actv
A	1614X1614-202	**CLIMATE CONTROL**	Climate Ctrl Htr Defroster A/C SGM Ovrhd Alum
S	1632-002	**CLIMATE CONTROL DRAIN**	Climate Control Drain Gravity
O	1617-108	**CLIMATE CONTROL ACTIVATION**	Climate Ctrl Actv Disp
S	1620-015	**HVAC OVERHEAD COVER PAINT**	HVAC Overhead Cover Paint Multi-tone Silver Gray
S	1603-003	**A/C CONDENSER LOCATION**	A/C Condenser Location Roof Mnt Fwd Ctr
S	1601-013	**A/C COMPRESSOR**	A/C Compressor TM-31/QP-31
O	1530-103	**UNDER CAB INSULATION**	Under Cab Insulation Eng Tnl w/Removable Alum Overlay

CAB INTERIOR

O	1327-017	**INTERIOR TRIM FLOOR**	Interior Trim Floor w/Bedliner TPlt Overlay & Wrapped Entry Ways
S	1302-001	**INTERIOR TRIM**	Interior Trim Vinyl
O	1368-003	**REAR WALL INTERIOR TRIM**	Rear Wall Interior Trim Painted Aluminum
S	1306-006	**HEADER TRIM**	Header Trim XDuty
S	1305-015	**TRIM CENTER DASH**	Trim Center Dash XDuty w/Gas Cylinder Stay

S	**1339-102**	**TRIM LEFT HAND DASH**	Trim LH Dash XDuty
O	**1321-030**	**TRIM RIGHT HAND DASH**	Trim RH Dash XDuty Glove Cmpt/MDT Prov/4.50"H Glovebox
O	**1307-017**	**ENGINE TUNNEL TRIM**	Eng Tnl Trim Painted Bedliner
A	**5040X5040-160**	**POWER POINT DASH MOUNT**	Pwr Pnt Dash Mnt Mstr Sw (2)/Batt Dir(2)/Mstr Sw(4) Blue Sea Dual USB 4.8 Sw Pnl
A	**1303X1303-038**	**STEP TRIM**	Step Trim Embossed & Diamond Cut Lwr Flex-Tred Mid
A	**1336-017**	**STEP TRIM KICKPLATE**	Step Trim Kickplate Gray Bedliner Upr Stepwell
A	**1379-022**	**UNDER CAB ACCESS DOOR**	Under Cab Access Door Rear Step LH Tread Plate Bedliner
O	**1102-029**	**INTERIOR DOOR TRIM**	Interior Door Trim (2) Piece Polished SS
O	**1328-005**	**DOOR TRIM SCUFF PLATE**	Door Trim Scuff Plate Door Jamb
S	**1323-050**	**DOOR TRIM CUSTOMER NAMEPLATE**	Door Trim Customer Nameplate
O	**1105-002**	**CAB DOOR TRIM REFLECTIVE**	Cab Dr Trim Reflective Vert Stripe/6" White
S	**1308-001**	**INTERIOR GRAB HANDLE "A" PILLAR**	Interior Grab Handle 'A' Pillar 11" Molded
S	**1332-008**	**INTERIOR GRAB HANDLE FRONT DOOR**	Interior Grab Handle Frt Door Horiz 9"
S	**1345-002**	**INTERIOR GRAB HANDLE REAR DOOR**	Int Grab Handle Rr Dr Alum Window Span 30" Black Powder Coat
S	**1301-003**	**INTERIOR SOFT TRIM COLOR**	Interior Soft Trim Color Gray
O	**1337-002**	**INTERIOR TRIM SUNVISOR**	Interior Trim Sunvisor Tinted
S	**1304-001**	**INTERIOR FLOOR MAT COLOR**	Interior Floor Mat Color Gray
S	**1371-017**	**HEADER TRIM INTERIOR PAINT**	Header Trim Interior Paint Multi-tone Silver Gray
S	**1370-019**	**TRIM CENTER DASH INTERIOR PAINT**	Trim Center Dash Interior Paint Multi-tone Silver Gray
S	**1378-018**	**TRIM LEFT HAND DASH INTERIOR PAINT**	Trim LH Dash Interior Paint Multi-tone Silver Gray
S	**1373-018**	**TRIM RIGHT HAND DASH INTERIOR PAINT**	Trim RH Dash Interior Paint Multi-tone Silver Gray
O	**1369-016**	**REAR WALL INTERIOR PAINT**	Rear Wall Interior Paint Multi-tone Silver Gray
O	**1375-006**	**FLOOR INTERIOR PAINT**	Floor Interior Paint Bedliner Medium Gray
O	**1344-009**	**DASH PANEL GROUP**	Dash Pnl Group 3-Pnl w/Black Textured Aluminum Panels
O	**1312-091**	**SWITCHES CENTER PANEL**	Switches Ctr Pnl 4
O	**1313-003**	**SWITCHES LEFT PANEL**	Switches Left Pnl 3 (1+2) Headlight/Dimmer/Wiper
S	**1314-001**	**SWITCHES RIGHT PANEL**	Switches Right Pnl 0
O	**1338-017**	**SWITCHES OVERHEAD PANEL**	Switches Overhead Panel LH 5/RH 4, Layout 1

CAB SEATS

S	**1225-007**	**SEAT BELT WARNING**	Seat Belt Warn Disp w/VDR
O	**1237-002**	**SEAT MATERIAL**	Seat Material Vinyl
S	**1243-001**	**SEAT COLOR**	Seat Color Gray/Red Seat Belts
O	**1201-038**	**SEAT DRIVER**	Seat Driver Bostrom Firefighter 4-Way Air 500 Series ABTS
O	**1213-024**	**SEAT BACK DRIVER**	Seat Back Driver Non-SCBA ABTS Reclining
S	**1219-001**	**SEAT MOUNTING DRIVER**	Seat Mounting Driver
O	**8102-201**	**OCCUPANT PROTECTION DRIVER**	Occupant Protection Driver 4Front & Air Seat RollTek w/SRA
A	**1202-041**	**SEAT OFFICER**	Seat Officer Bostrom Firefighter 4-Way Air 500 Series ABTS
S	**1214-028**	**SEAT BACK OFFICER**	Seat Back Officer Non-SCBA ABTS
S	**1220-002**	**SEAT MOUNTING OFFICER**	Seat Mounting Officer

O	**8103-200**	**OCCUPANT PROTECTION OFFICER**	Occupant Protection Officer 4Front & Mechanical/Elect Seat RollTek w/SRA
S	**1273-001**	**SEAT BELT ORIENTATION CREW**	Seat Belt Orientation Crew Outboard Shoulder To Inboard Hip
O	**1265-001**	**SEAT FORWARD FACING OUTER LOCATION**	Seat FFO Location Primary Pos (2) R/L
O	**1205-027**	**SEAT CREW FORWARD FACING OUTER**	Seat Crew FFO Bostrom Firefighter Fold & Hold Flip-Up 500 Series
O	**1217-001**	**SEAT BACK FORWARD FACING OUTER**	Seat Back FFO Non-SCBA ABTS
O	**1223-002**	**SEAT MOUNTING FORWARD FACING OUTER**	Seat Mounting FFO Outboard
O	**8106-200**	**OCCUPANT PROTECTION FFO**	Occupant Protection FFO RollTek w/SRA
O	**1266-005**	**SEAT FORWARD FACING CENTER LOCATION**	Seat FFC Location Secondary Pos Ctr
S	**1206-031**	**SEAT CREW FORWARD FACING CENTER**	Seat Crew FFC Bostrom Firefighter Fold & Hold Flip-Up 500 Series
O	**1218-001**	**SEAT BACK FORWARD FACING CENTER**	Seat Back FFC Non-SCBA ABTS
O	**8107-101**	**OCCUPANT PROTECTION FFC**	Occupant Protection FFC RollTek Belt Pretensioner
O	**1269-122**	**SEAT FRAME FORWARD FACING**	Seat Frm Fwd Fcg Full Width Cab Extension
S	**1224-002**	**SEAT MOUNTING FORWARD FACING CENTER**	Seat Mounting Forward Facing Center
S	**1311-101**	**CAB FRONT UNDERSEAT STORAGE ACCESS DOOR**	Cab Frt Undrst Strg Acc Dr
S	**1355-019**	**SEAT COMPARTMENT DOOR FINISH**	Seat Compartment Door Finish Multi-tone Silver Gray

CAB EXTERIOR

S	**1511-200**	**WINDSHIELD WIPER SYSTEM**	Windshield Wiper System
S	**1534-002**	**ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR**	Electronic Windshield Fluid Level Indicator
O	**1103-004**	**CAB DOOR HARDWARE**	Cab Door Hardware Chrome w/Scuff Plate
O	**1111-004**	**DOOR LOCKS**	Door Locks Power (4) Entry Doors
O	**1113-003**	**DOOR LOCK LH EMS COMPARTMENT**	Door Lock LH EMS Compartment Hng Power
O	**1114-003**	**DOOR LOCK RH EMS COMPARTMENT**	Door Lock RH EMS Compartment Hng Power
O	**1112-003**	**POWER DOOR LOCK COMPARTMENT ACTIVATION**	Power Door Lock Cmpt Actv Disp
O	**1503-201**	**GRAB HANDLES**	Grab Handles 3-Pc Alum Knurled 18"
O	**1504-016**	**REARVIEW MIRRORS**	Mirror Aerodynamic Retrac 613315 Rmt Htd Ltd
S	**1529-003**	**REARVIEW MIRROR HEAT SWITCH**	Rearview Mirror Heat Sw Disp
S	**1513-001**	**CAB FENDER**	Cab Fender SS w/ABS Liner
S	**1514-002**	**MUD FLAPS FRONT**	Mud Flaps Frt
O	**1526-031**	**CAB EXTERIOR FRONT & SIDE EMBLEMS**	Cab Ext Frt & Side Emblems Spartan w/Side Shiploose
S	**1502-050**	**CAB EXTERIOR MODEL NAMEPLATE**	Cab Exterior Model Nameplate Metro Star

START / CHARGING SYSTEMS

S	**5109-015**	**IGNITION**	Ign Mstr Rkr Sw w/Push-Button Start
A	**5101X5101-009**	**BATTERY**	Batt (6) Group 31 Deka

S	5106-003	**BATTERY TRAY**	Batt Tray (2) R/L Steel
A	5107X5107-007	**BATTERY BOX COVER**	Batt Box Cover (2) Steel w/Black Handles
S	5102-001	**BATTERY CABLE**	Batt Cables
S	5108-010	**BATTERY JUMPER STUD**	Batt Jumper Stud Frt LH Lwr Step 8" Apart
O	5104-012	**ALTERNATOR**	Alternator Niehoff 360A
S	5105-001	**STARTER MOTOR**	Starter Motor Delco

LINE VOLTAGE ELECTRICAL POWER DISTRIBUTION

O	5202-400	**BATTERY CONDITIONER**	Batt Cond Kussmaul Chief 4012 40A
O	5218-008	**BATTERY CONDITIONER LOCATION**	Batt Cond Loc Top of LH EMS Cmpt
A	5203X5203-038	**BATTERY CONDITIONER DISPLAY**	Batt Cond Display LH Mid Frt Step Rwd
O	5220-002	**BATTERY CONDITIONER DISPLAY LOCATION**	Batt Cond Display Location Integrated with Elec Inlet
A	3314-072	**AUXILIARY AIR COMPRESSOR**	Aux Air Cmp Blue Sea 7920 12V Bhd Off Seat w/Auto Drain Horiz
O	5209-029	**ELECTRICAL INLET LOCATION**	Elec Inlet Location LH Cab Side Fwd
S	5204-055	**ELECTRICAL INLET**	Elec Inlet 120V 20A Auto Eject
O	5210-004	**ELECTRICAL INLET CONNECTION**	Elec Inlet Conn to Batt Conditioner
O	5206-003	**ELECTRICAL INLET COLOR**	Elec Inlet Color Red

LIGHTING

O	5301-103	**HEADLIGHTS**	Headlights 2 Headlamps LED
O	5337-002	**HEADLIGHT LOCATION**	Headlights Above Frt Warn Lts
O	5303-038	**FRONT TURN SIGNALS**	Frt Turn Signals Whelen M6 LED Above Headlight
S	5336-015	**SIDE TURN/MARKER LIGHTS**	Side Turn/Marker Lts LED Tecniq S170
O	5302-018	**MARKER & ICC LIGHTS**	Marker & ICC Lts Face Mnt LED In Scene Lt
O	5350-092	**HEADLIGHT AND MARKER LIGHT ACTIVATION**	Hdlt & Mrkr Lt Actv Rkr Sw/DRL Ign Sw
S	5305-350	**INTERIOR OVERHEAD LIGHTS**	Interior Overhead Lts Red/Clear LED
S	5388-003	**INTERIOR OVERHEAD LIGHTING ACTIVATION**	Int Ovrhd Lt Actv Resp Dr & MUX
O	5403-050	**LIGHTBAR PROVISION**	Lightbar Prov Wire & Mnt Chassis Supply
O	5450N-005	**CAB FRONT LIGHTBAR MODEL**	Cab Front Lightbar Model Whelen F4N92
S	5450-999	**CAB FRONT LIGHTBAR**	Cab Front Lightbar - Configured in 5450M Subcategory
S	5450M-002	**FRONT LIGHTBAR LAYOUT**	Cab Front Lightbar Layout
S	5450X-002	**FRONT LIGHTBAR ORIENTATION**	Front Lightbar Orientation - Standard Fwd
O	5450L1-002	**FRONT LIGHTBAR LIGHT POSITION 1**	Cab Front Lightbar Position 1 - Red Rear LH Corner
O	5450F1-002	**FRONT LIGHTBAR LIGHT POSITION 1 FILTER**	Cab Front Lightbar Position 1 Filter
O	5450L2-003	**FRONT LIGHTBAR LIGHT POSITION 2**	Cab Front Lightbar Position 2 - White LH Side
O	5450F3-0	**FRONT LIGHTBAR LIGHT POSITION 3**	Cab Front Lightbar Position 3 Filter

	02	**FILTER**	
O	**5450L4-002**	**FRONT LIGHTBAR LIGHT POSITION 4**	Cab Front Lightbar Position 4 - Red
O	**5450F4-002**	**FRONT LIGHTBAR LIGHT POSITION 4 FILTER**	Cab Front Lightbar Position 4 Filter
O	**5450L5-002**	**FRONT LIGHTBAR LIGHT POSITION 5**	Cab Front Lightbar Position 5 - Red
O	**5450F5-002**	**FRONT LIGHTBAR LIGHT POSITION 5 FILTER**	Cab Front Lightbar Position 5 Filter
O	**5450L6-002**	**FRONT LIGHTBAR LIGHT POSITION 6**	Cab Front Lightbar Position 6 - Red
O	**5450F6-002**	**FRONT LIGHTBAR LIGHT POSITION 6 FILTER**	Cab Front Lightbar Position 6 Filter
O	**5450L7-003**	**FRONT LIGHTBAR LIGHT POSITION 7**	Cab Front Lightbar Position 7 - White
O	**5450L8-002**	**FRONT LIGHTBAR LIGHT POSITION 8**	Cab Front Lightbar Position 8 - Red
O	**5450F8-002**	**FRONT LIGHTBAR LIGHT POSITION 8 FILTER**	Cab Front Lightbar Position 8 Filter
O	**5450L9-002**	**FRONT LIGHTBAR LIGHT POSITION 9**	Cab Front Lightbar Position 9 - Red
O	**5450F9-002**	**FRONT LIGHTBAR LIGHT POSITION 9 FILTER**	Cab Front Lightbar Position 9 Filter
O	**5450L10-002**	**FRONT LIGHTBAR LIGHT POSITION 10**	Cab Front Lightbar Position 10 - Red
O	**5450F10-002**	**FRONT LIGHTBAR LIGHT POSITION 10 FILTER**	Cab Front Lightbar Position 10 Filter
O	**5450L11-102**	**FRONT LIGHTBAR LIGHT POSITION 11**	Cab Front Lightbar Position 11 - Red Steady Burn
O	**5450F11-002**	**FRONT LIGHTBAR LIGHT POSITION 11 FILTER**	Cab Front Lightbar Position 11 Filter
O	**5450L12-007**	**FRONT LIGHTBAR LIGHT POSITION 12**	Cab Front Lightbar Position 12 - Red Steady Burn
O	**5450F12-002**	**FRONT LIGHTBAR LIGHT POSITION 12 FILTER**	Cab Front Lightbar Position 12 Filter
O	**5450L13-002**	**FRONT LIGHTBAR LIGHT POSITION 13**	Cab Front Lightbar Position 13 - Red
O	**5450F13-002**	**FRONT LIGHTBAR LIGHT POSITION 13 FILTER**	Cab Front Lightbar Position 13 Filter
O	**5450L14-002**	**FRONT LIGHTBAR LIGHT POSITION 14**	Cab Front Lightbar Position 14 - Red
O	**5450F14-002**	**FRONT LIGHTBAR LIGHT POSITION 14 FILTER**	Cab Front Lightbar Position 14 Filter
O	**5450L15-002**	**FRONT LIGHTBAR LIGHT POSITION 15**	Cab Front Lightbar Position 15 - Red
O	**5450F15-002**	**FRONT LIGHTBAR LIGHT POSITION 15 FILTER**	Cab Front Lightbar Position 15 Filter
O	**5450L16-003**	**FRONT LIGHTBAR LIGHT POSITION 16**	Cab Front Lightbar Position 16 - White
O	**5450L17-002**	**FRONT LIGHTBAR LIGHT POSITION 17**	Cab Front Lightbar Position 17 - Red
O	**5450F17-**	**FRONT LIGHTBAR LIGHT POSITION 17**	Cab Front Lightbar Position 17 Filter

	002	**FILTER**	
O	**5450L18-002**	**FRONT LIGHTBAR LIGHT POSITION 18**	Cab Front Lightbar Position 18 - Red
O	**5450F18-002**	**FRONT LIGHTBAR LIGHT POSITION 18 FILTER**	Cab Front Lightbar Position 18 Filter
O	**5450L19-002**	**FRONT LIGHTBAR LIGHT POSITION 19**	Cab Front Lightbar Position 19 - Red
O	**5450F19-002**	**FRONT LIGHTBAR LIGHT POSITION 19 FILTER**	Cab Front Lightbar Position 19 Filter
O	**5450L20-012**	**FRONT LIGHTBAR LIGHT POSITION 20**	Cab Front Lightbar Position 20 - Red Front RH Corner
O	**5450F20-002**	**FRONT LIGHTBAR LIGHT POSITION 20 FILTER**	Cab Front Lightbar Position 20 Filter
O	**5450L21-033**	**FRONT LIGHTBAR LIGHT POSITION 21**	Cab Front Lightbar Position 21 - White RH Side
O	**5450L22-022**	**FRONT LIGHTBAR LIGHT POSITION 22**	Cab Front Lightbar Position 22 - Red Rear RH Corner
O	**5450F22-004**	**FRONT LIGHTBAR LIGHT POSITION 22 FILTER**	Cab Front Lightbar Position 22 Filter Rear RH Corner
O	**5426-008**	**LIGHTBAR SWITCH**	Lightbar Sw Disp w/Clear Lt Cutoff
O	**5317-158**	**FRONT SCENE LIGHTS**	Frt Scene Lts FireTech FT-B-72-ML-W 12V LED 72" White
O	**5329-003**	**FRONT SCENE LIGHT LOCATION**	Frt Scene Lt Loc Ctr Brow Pos
O	**5335-078**	**FRONT SCENE LIGHTS ACTIVATION**	Frt Scene Lts Actv Rkr Sw Pnl (2) Lighted Momentary Rkr Sws Overhead Sw Pnl
O	**5306-160**	**SIDE SCENE LIGHTS**	Side Scene Lts Firetech FT-GESM 12V LED
O	**5318-004**	**SIDE SCENE LIGHT LOCATION**	Side Scene Lt Loc Upper Mid Rwd 10" Roof Position
O	**5316-076**	**SIDE SCENE ACTIVATION**	Side Scene Actv Indv Overhead Mom Sw (2)
S	**5308-300**	**GROUND LIGHTS**	Ground Lts Tecniq T44 LED
S	**5386-004**	**GROUND LIGHTING ACTIVATION**	Ground Lt Actv Prk Brk, Resp Sd Dr & Disp
S	**5309-003**	**LOWER CAB STEP LIGHTS**	Lwr Cab Step Lts Tecniq T44 LED
O	**5382-007**	**INTERMEDIATE STEP LIGHTS**	Intermediate Step Lts Tecniq D06 LED
O	**5307-086**	**CAB SPOTLIGHTS**	Cab Spotlights GoLight 20204GT White R/L Rf Brkt Mnt Rwd LED w/Rmt Ctrl Sw Pnl
S	**5312-003**	**ENGINE COMPARTMENT LIGHT**	Engine Cmpt Work Lt LED (1)

OPTICAL WARNING DEVICES

S	**5406-119**	**DO NOT MOVE APPARATUS LIGHT**	Do Not Move App Lt Flashing Red Tecniq K50 LED w/Alarm
S	**5422-002**	**MASTER WARNING SWITCH**	Mstr Warn Sw MUX
S	**5409-002**	**HEADLIGHT FLASHER**	Headlight Flasher Alternating
S	**5425-003**	**HEADLIGHT FLASHER SWITCH**	Headlight Flasher Sw MUX
O	**5401-062**	**INBOARD FRONT WARNING LIGHTS**	Inboard Frt Warn Lts Whelen 600 LED Rota-Beam Chrm Bezel
O	**5413-002**	**INBOARD FRONT WARNING LIGHTS COLOR**	Inboard Frt Warn Lts Color Red
O	**5414-022**	**OUTBOARD FRONT WARNING LIGHTS**	Outboard Frt Warn Lts Whelen M6 LED Chrm Bezel
O	**5415-002**	**OUTBOARD FRONT WARNING LIGHTS COLOR**	Outboard Frt Warn Lts Color Red
O	**5423-003**	**FRONT WARNING SWITCH**	Frt Warn Sw Disp
O	**5404-027**	**INTERSECTION WARNING LIGHTS**	Intersection Warn Lts Whelen M6 LED

O	5419-002	**INTERSECTION WARNING LIGHTS COLOR**	Int Warn Lts Color Red
O	5420-002	**INTERSECTION WARNING LIGHTS LOCATION**	Intersection Warn Lts Location Bumper Tail Rwd
O	5402-029	**SIDE WARNING LIGHTS**	Side Warn Lts Whelen M6 LED
O	5418-002	**SIDE WARNING LIGHTS COLOR**	Side Warn Lts Color Red
O	5412-007	**SIDE WARNING LIGHTS LOCATION**	Side Warn Lts Location Lwr Rear
O	5424-003	**SIDE AND INTERSECTION WARNING SWITCH**	Side & Intersection Warn Sw Disp
O	5469-004	**TANK LEVEL LIGHTS**	Tank Lvl Lts Whelen PSTANK2 w/Chrm Bzl
O	5470-002	**TANK LEVEL LIGHTS ACTIVATION**	Tank Lvl Lights Actv Prewire Rear of Cab
O	5471-002	**TANK LEVEL LIGHTS LOCATION**	Tank Lvl Lights Loc Rear Cab Sides
O	5449-041	**REAR WARNING LIGHTS**	Rr Warn Lts Prewire & Cutout Whelen TACTL5 Traf Advsr Sw Pnl

AUDIBLE WARNING DEVICES

O	5510-128	**SIREN CONTROL HEAD**	Siren Ctrl Head Code 3 3692 Lwr LH
S	5514-101	**STEERING WHEEL HORN BUTTON SELECTOR SWITCH**	Horn Btn Sel Sw Elec Horn/Air Horn MUX
O	5526-004	**AUDIBLE WARNING LH FOOT SWITCH**	Audible Warning LH Foot Switch Siren
O	5526D-001	**MECHANICAL SIREN FOOT SWITCH LH**	Mechanical Siren Foot Switch LH Linemaster 491-S
O	5526E-001	**MECHANICAL SIREN FOOT SWITCH LH LOCATION**	Mechanical Foot Switch LH Location A-Pillar
O	5526F-001	**MECHANICAL SIREN FOOT SWITCH LH POSITION**	Mechanical Siren Foot Switch Position Outboard of Other Foot Switches
O	5529-002	**AUDIBLE WARNING LH FOOT SWITCH BRACKET**	Audible Warn LH Ft Sw Double Brkt 30Deg TPlate
O	5527-003	**AUDIBLE WARNING RH FOOT SWITCH**	Audible Warning RH Foot Switch Air Horn & Siren
O	5527A-001	**AIR HORN FOOT SWITCH RH**	Air Horn Foot Switch RH Linemaster 491-S
O	5527B-002	**AIR HORN FOOT SWITCH RH LOCATION**	Air Horn Foot Switch RH Location Temporary Firewall Inboard Coiled
O	5527C-001	**MECHANICAL SIREN FOOT SWITCH RH**	Mechanical Siren Foot Switch RH Linemaster 491-S
O	5527D-002	**MECHANICAL SIREN FOOT SWITCH RH LOCATION**	Mechanical Siren Foot Switch RH Location Temporary Firewall Inboard Coiled
O	5530-002	**AUDIBLE WARNING RH FOOT SWITCH BRACKET**	Audible Warn RH Ft Sw Indv Brkt 30Deg TPlate Shiploose
O	5513-522	**MECHANICAL SIREN BRAKE/AUXILIARY ACTIVATION**	Mech Siren Brk (2) Sws Overhead Sw Pnl
O	5532-001	**MECHANICAL SIREN INTERLOCK**	Mechanical Siren Interlock Master Warn Only
O	5505-019	**BACK-UP ALARM**	Back-Up Alarm Preco-Matic 1040

INSTRUMENTATION

S	5601-041	**INSTRUMENTATION**	Instrumentation Standard
S	5624-001	**BACKLIGHTING COLOR**	Backlighting Color Red

COMMUNICATIONS SYSTEMS

O	5727-002	**CAMERA RIGHT HAND**	Camera RH Teardrop
O	5728-009	**CAMERA REAR**	Camera HD Rear Box
O	5731-004	**CAMERA DISPLAY**	Camera Display on Disp
O	5732-002	**CAMERA SPEAKER**	Camera Speaker
S	5020-002	**PANEL LAYOUT**	Panel Layout

ADDITIONAL EQUIPMENT

A	8814X8814-002	**CAB EXTERIOR PROTECTION**	Cab Exterior Protection Front
S	8806-001	**FIRE EXTINGUISHER**	Fire Extinguisher Shiploose
O	8807-002	**ROAD SAFETY KIT**	Road Safety Kit Shiploose
S	8810-001	**DOOR KEYS**	Door Keys for Manual Locks (4)

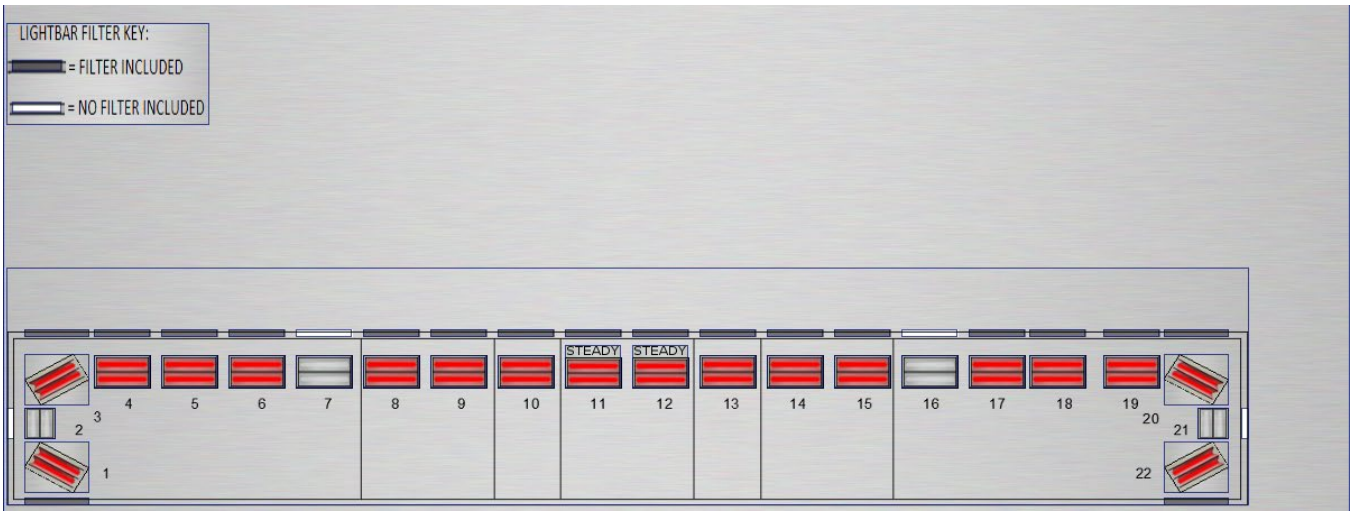
SALES ADMIN

S	8003-197	**WARRANTY**	Warranty Cab and Chassis (2) Year RFW0102
S	8030-006	**CHASSIS OPERATION MANUAL**	Chassis Operation Manual Digital Copy (2)
S	8031-024	**ENGINE & TRANSMISSION OPERATION MANUAL**	Eng & Trans Operation Man Eng Hard Copy/Trans Digital/Eng Owner Digital
S	8805-007	**CAB/CHASSIS AS BUILT WIRING DIAGRAMS**	Cab/Chassis As Built Wiring Diagrams Digital Copy (2)
S	8039-001	**SALES TERMS**	Sales Terms

ENGINEERING

O	9005-002	**DRIVELINE LAYOUT CONFIRMATION**	Driveline Layout Confirmation Required
O	2124-009	**EFCM/REAR CROSSMEMBERS**	End of Frame Cross Member 2.25" From EOF

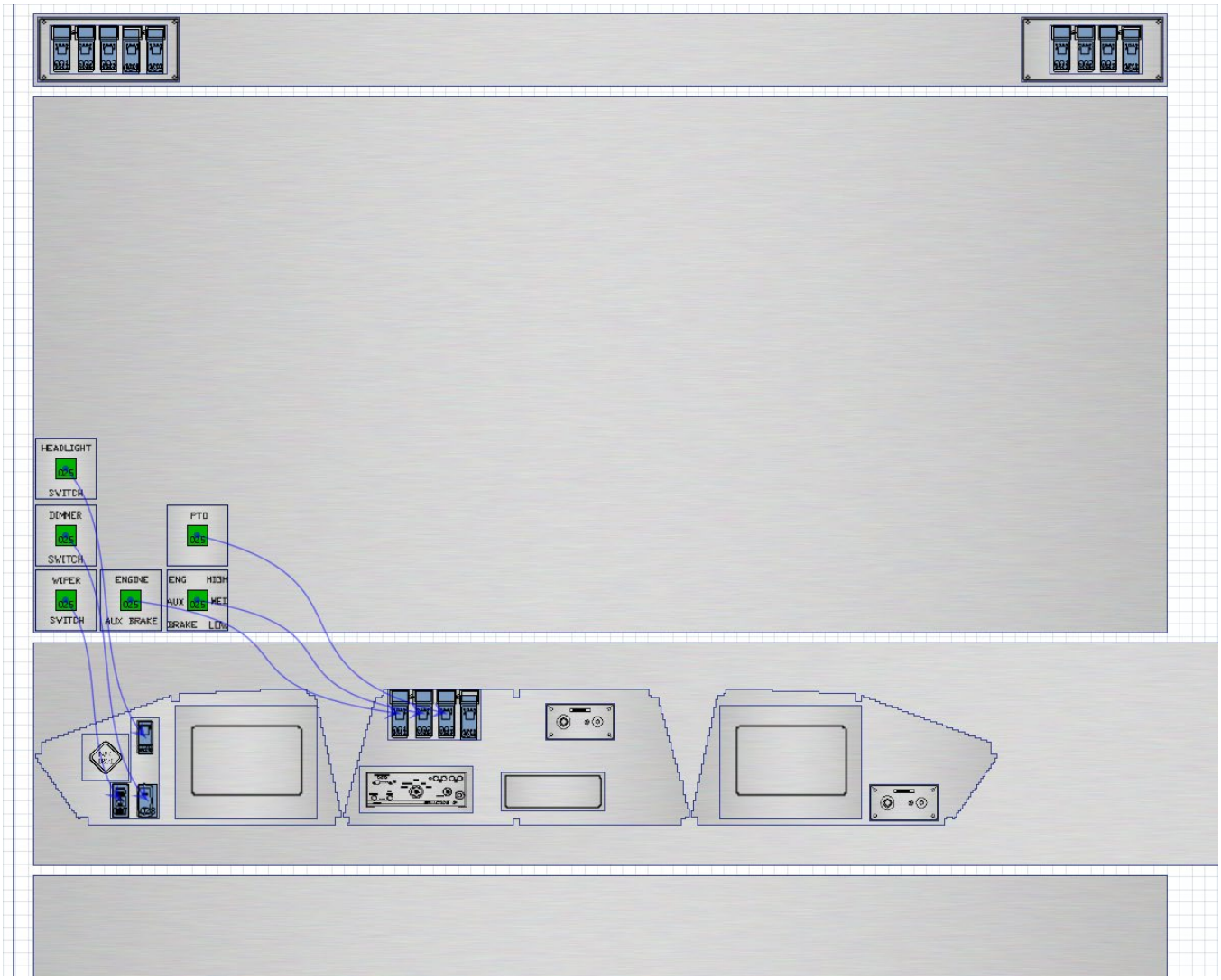
5450M-002 Cab Front Lightbar Layout



Option Description
Cab Front Lightbar Position 1 Filter
NO Cab Front Lightbar Position 2 Filter
Cab Front Lightbar Position 3 Filter
Cab Front Lightbar Position 4 Filter
Cab Front Lightbar Position 5 Filter
Cab Front Lightbar Position 6 Filter
NO Cab Front Lightbar Position 7 Filter
Cab Front Lightbar Position 8 Filter
Cab Front Lightbar Position 9 Filter
Cab Front Lightbar Position 10 Filter
Cab Front Lightbar Position 11 Filter
Cab Front Lightbar Position 12 Filter
Cab Front Lightbar Position 13 Filter
Cab Front Lightbar Position 14 Filter
Cab Front Lightbar Position 15 Filter
NO Cab Front Lightbar Position 16 Filter
Cab Front Lightbar Position 17 Filter
Cab Front Lightbar Position 18 Filter
Cab Front Lightbar Position 19 Filter
Cab Front Lightbar Position 20 Filter
NO Cab Front Lightbar Position 21 Filter RH Side
Cab Front Lightbar Position 22 Filter Rear RH Corner
Cab Front Lightbar Position 1 - Red Rear LH Corner
Cab Front Lightbar Position 2 - White LH Side
Cab Front Lightbar Position 3 - Red Front LH Corner
Cab Front Lightbar Position 4 - Red
Cab Front Lightbar Position 5 - Red
Cab Front Lightbar Position 6 - Red
Cab Front Lightbar Position 7 - White
Cab Front Lightbar Position 8 - Red
Cab Front Lightbar Position 10 - Red
Cab Front Lightbar Position 9 - Red
Cab Front Lightbar Position 11 - Red Steady Burn
Cab Front Lightbar Position 12 - Red Steady Burn
Cab Front Lightbar Position 13 - Red
Cab Front Lightbar Position 14 - Red
Cab Front Lightbar Position 15 - Red

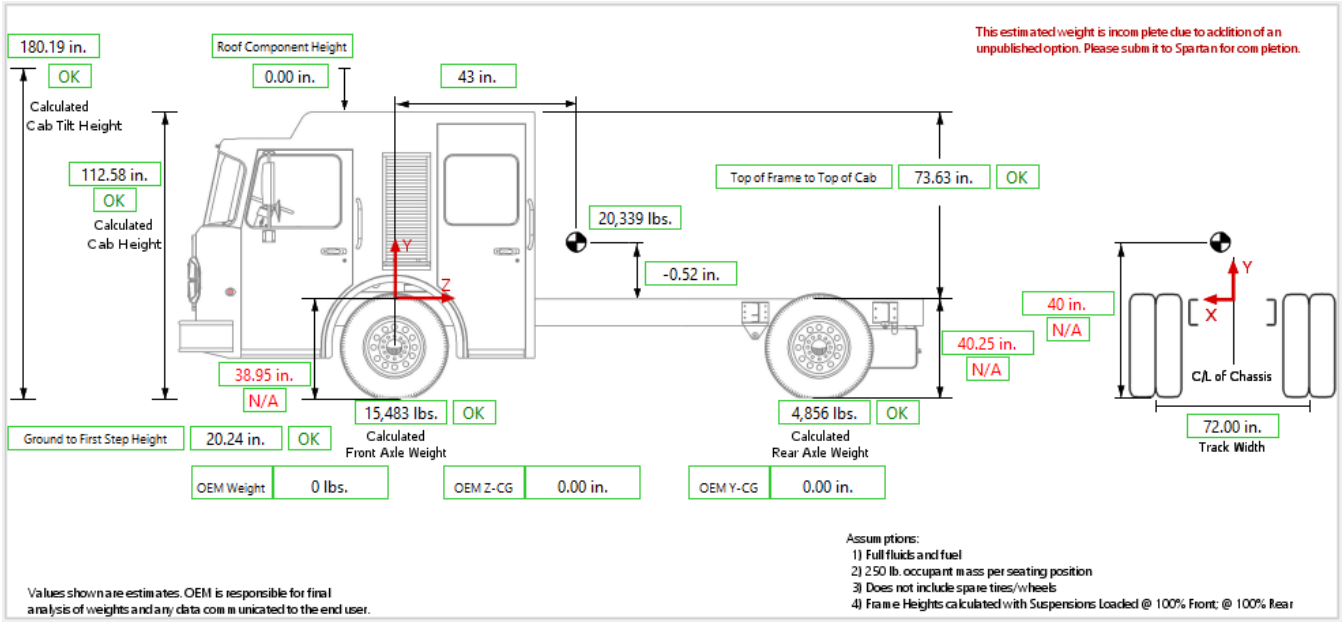
Cab Front Lightbar Position 16 - White
Cab Front Lightbar Position 17 - Red
Cab Front Lightbar Position 18 - Red
Cab Front Lightbar Position 19 - Red
Cab Front Lightbar Position 20 - Red Front RH Corner
Cab Front Lightbar Position 21 - White RH Side
Cab Front Lightbar Position 22 - Red Rear RH Corner
FRONT LIGHTBAR LEGEND INSERT

5020-002 Panel Layout



Option Description
SWITCHES OVERHEAD PANEL - OFFICER (4)
SWITCHES OVERHEAD PANEL - DRIVER (5)
LEGEND LOCATION
SIREN CONTROL HEAD CODE 3 3692 LH LWR
WHELEN TACTL CONTROLLER CUTOUT
GOLIGHT 2020 REMOTE CONTROL LH LT
SW PNL 4 SW
VEHICLE DISPLAY TOUCHSCREEN IV OFFICER PNL 2010
GOLIGHT 2020 REMOTE CONTROL RH LT
VEHICLE DISPLAY TOUCHSCREEN IV DRIVER PNL 2010
PARK BRAKE CTRL LH PNL
SWITCH PANEL LH (3) [2+1] SWITCHES 2010 94"
HDLT & MRKR LT ACTV DIMMER SW
HDLT & MRKR LT RKR SW
PTO CONTROL RKR ACTV RED LKG
AUX ENG BRK CTRL ON/OFF SW PNL SWPN (-010)
AUX ENGINE BRAKE CONTROL ON/OFF & HIGH/MED/LOW SWITCH PANEL
WINDSHIELD WIPER SYSTEM SINGLE MOTOR

Weight Distribution

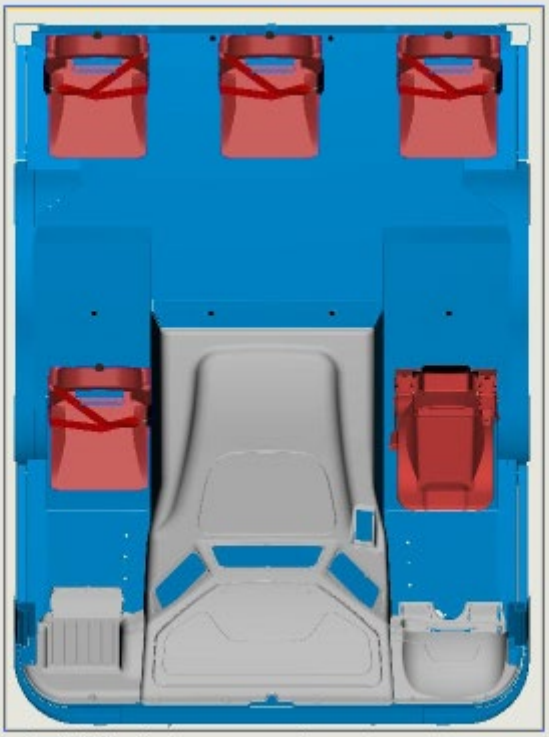


Calculated Apparatus Weight	20,339 lbs.
Calculated Apparatus Z-CG	43 in.
Calculated Apparatus Y-CG	-0.52 in.

Note:

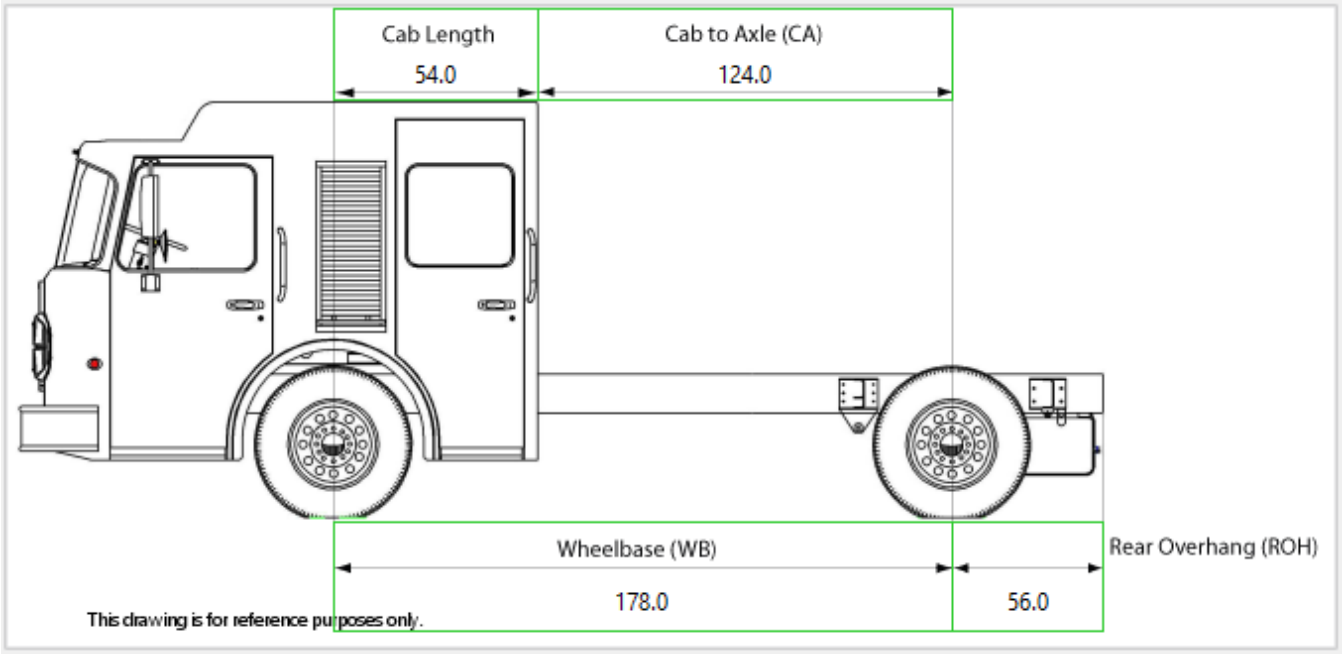
The Y-CG value above is calculated from the top of the frame.
Apparatus refers to total combined value for cab and chassis and OEM inputs.

Seat Locations

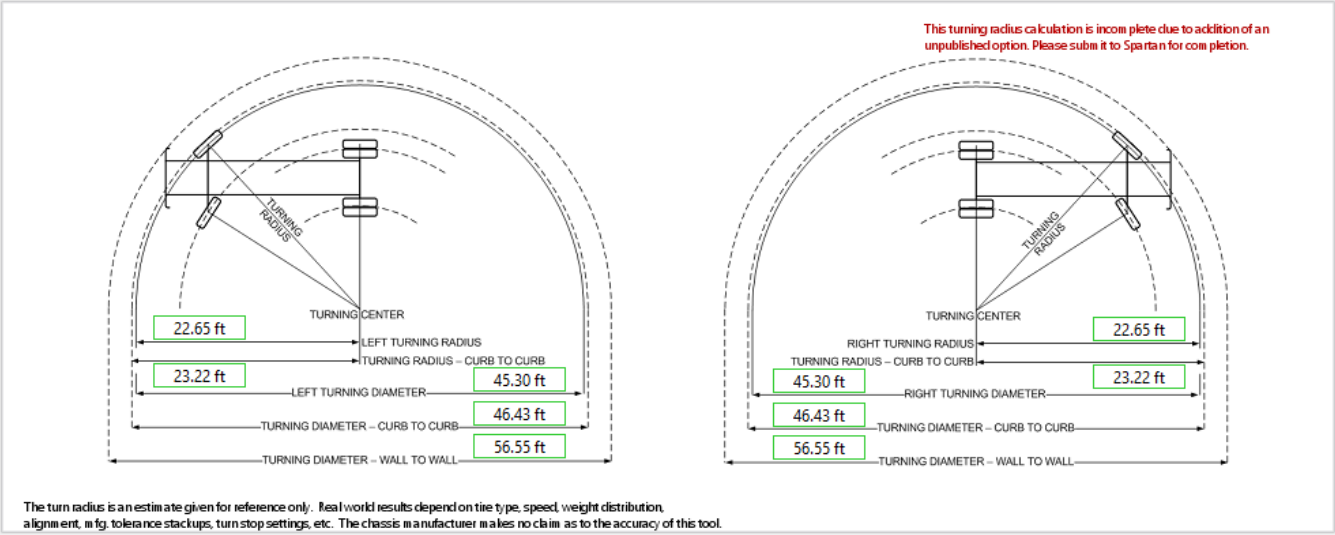


This drawing is for reference purposes only.

Frame Dimensions

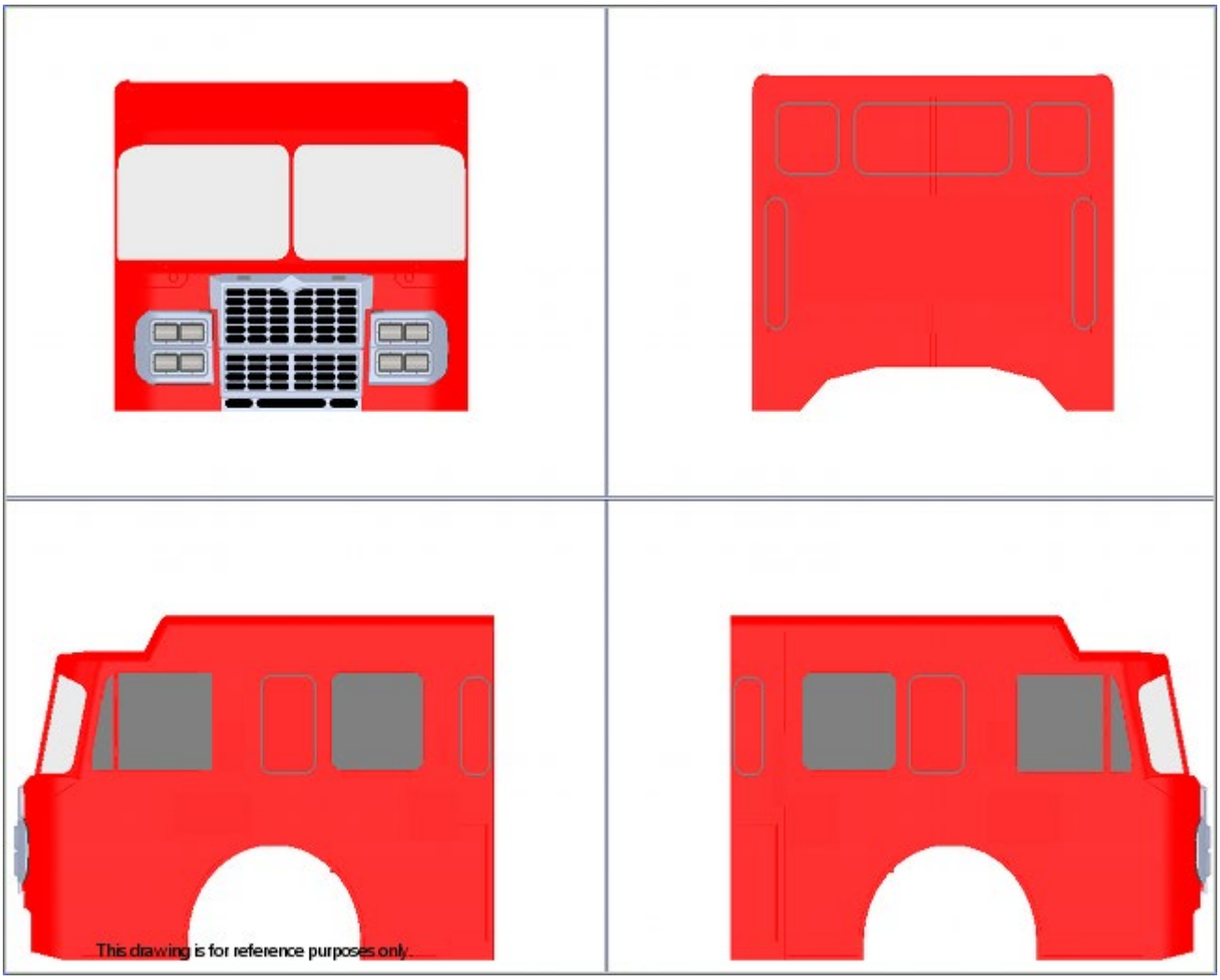


Turning Radius



End User Name	
Chassis Model	0100-011 Metro Star
Wheelbase	178.00 in
Bumper Extension	16.00 in
Bumper Width	99.00 in
Left hand outside tire turn angle	43.00 deg
Right hand outside tire turn angle	43.00 deg
Left hand Curb-to-Curb turning radius	23.22 ft, 7.08 m
Right hand Curb-to-Curb turning radius	23.22 ft, 7.08 m
Left hand Wall-to-Wall turning radius	28.28 ft, 8.62 m
Right hand Wall-to-Wall turning radius	28.28 ft, 8.62 m

Cab Glass



Specification

MODEL

The chassis shall be a Metro Star model. The cab and chassis shall include design considerations for multiple emergency vehicle applications, rapid transit and maneuverability. The chassis shall be manufactured for heavy duty service with the strength and capacity to support a fully laden apparatus, one hundred (100) percent of the time.

COUNTRY OF SERVICE

The chassis shall be put in service in the country of United States of America (USA).

The chassis will meet applicable U.S.A. federal motor vehicle safety standards per CFR Title 49 Chapter V Part 571 as clarified in the incomplete vehicle book per CFR Title 49 Chapter V Part 568 Section 4 which accompanies each chassis. The chassis manufacturer is not responsible for compliance to state, regional, or local regulations. Dealers should identify those regulations and order any necessary optional equipment from the chassis manufacturer or their OEM needed to be in compliance with those regulations.

CAB AND CHASSIS LABELING LANGUAGE

The cab and chassis shall include the applicable caution, warning, and safety notice labels with text to be written in English. All applicable caution, warning, and safety notice labels shall be Innovative Controls brand. Where applicable to the location within the specific layout and label package of the cab and chassis, the labels shall include decorative chrome bezels. Designs shall include bezels that fit individual labels or packaged configurations of labels in certain common locations.

APPARATUS TYPE

The apparatus shall be a pumper vehicle designed for emergency service use which shall be equipped with a permanently mounted fire pump which has a minimum rated capacity of 750 gallons per minute (3000 L/min). The apparatus shall include a water tank and hose body whose primary purpose is to combat structural and associated fires.

VEHICLE TYPE

The chassis shall be manufactured for use as a straight truck type vehicle and designed for the installation of a permanently mounted apparatus behind the cab. The apparatus of the vehicle shall be supplied and installed by the apparatus manufacturer.

VEHICLE ANGLE OF APPROACH PACKAGE

The angle of approach of the apparatus shall be a minimum of 8.00 degrees.

NFPA1901 Angle of Approach definition:
“To determine the angle of approach, place a thin steel strip against the front of the tires where they touch the ground or stretch a tight string from one front tire to the other at the front where they touch the ground. Determine the lowest point (component or equipment) on the vehicle forward of the front tire that would make the smallest angle of approach. Hang a plumb bob from the lowest point and mark the point on the ground where the point of the plumb bob touches. Measure the vertical distance from the

ground to the point where the plumb bob was hung (distance *V*). Measure the horizontal distance from the plumb bob point to the steel strip or string running from front tire to front tire (distance *H*). Divide the vertical distance by the horizontal distance. The ratio of *V/H* is the tangent of the angle of approach. If the ratio is known, the angle of approach can be determined from a table of trigonometric functions of angles or from a math calculator. The standard requires a minimum angle of approach of 8.00 degrees: since the tangent of 8.00 degrees is 0.1405, if *V* divided by *H* is 0.1405 or larger, the angle of approach is 8.00 degrees or greater."

AXLE CONFIGURATION

The chassis shall feature a 4 x 2 axle configuration consisting of a single rear drive axle with a single front steer axle.

GROSS AXLE WEIGHT RATINGS FRONT

The front gross axle weight rating (GAWR) of the chassis shall be 20,000 pounds.

This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

GROSS AXLE WEIGHT RATINGS REAR

The rear gross axle weight rating (GAWR) of the chassis shall be 24,000 pounds.

This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

PUMP PROVISION

The chassis shall include provisions to mount a drive line pump in the middle of the chassis, behind the cab, more commonly known as the midship location. Chassis driveline pump provisions shall include an interlock feature for automatic setting of the park brake when the vehicle is shifted into pump mode while the transmission is in neutral and the transmission output speed translates to less than 1 mph. When the conditions are met the driver side parking brake valve shall activate. Once shifted to road mode the condition for electric automatic brake engagement is no longer present and the driver's parking brake control valve shall function normally.

WATER & FOAM TANK CAPACITY

The chassis shall include a carrying capacity of up to 750 gallons (2839 liters). The water and/or foam tank(s) shall be supplied and installed by the apparatus manufacturer.

CAB STYLE

The cab shall be a custom, fully enclosed, MFD model with a 10.00 inch raised roof over the driver, officer, and crew area, designed and built specifically for use as an emergency response vehicle by a company specializing in cab and chassis design for all emergency response applications. The cab shall be designed for heavy-duty service utilizing superior strength and capacity for the application of protecting the occupants of the vehicle. This style of cab shall offer up to eight (8) seating positions.

The cab shall incorporate a fully enclosed design with side wall roof supports, allowing for a spacious cab area with no partition between the front and rear sections of the cab. To provide a superior finish by reducing welds that fatigue cab metal; the roof, the rear wall and side wall panels shall be assembled using a combination of welds and proven industrial adhesives designed specifically for aluminum fabrication for construction.

The cab shall be constructed using multiple aluminum extrusions in conjunction with aluminum plate, which shall provide proven strength and the truest, flattest body surfaces ensuring less expensive paint repairs if needed. All aluminum welding shall be completed to the American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum.

All interior and exterior seams shall be sealed for optimum noise reduction and to provide the most favorable efficiency for heating and cooling retention.

The cab shall be constructed of 5052-H32 corrosion resistant aluminum plate. The cab shall incorporate tongue and groove fitted 6061-T6 0.13 & 0.19 inch thick aluminum extrusions for extreme duty situations. A single formed, one (1) piece extrusion shall be used for the "A" pillar, adding strength and rigidity to the cab as well as additional roll-over protection. The cab side walls and lower roof skin shall be 0.13 inch thick; the rear wall and raised roof skins shall be 0.09 inch thick; the front cab structure shall be 0.19 inch thick.

The exterior width of the cab shall be 94.00 inches wide with a minimum interior width of 88.00 inches. The overall cab length shall be 131.10 inches with 54.00 inches from the centerline of the front of the axle to the back of the cab.

The cab interior shall be designed to afford the maximum usable interior space and attention to ergonomics with hip and legroom while seated which exceeds industry standards. The crew cab floor shall be flat across the entire walking area for ease of movement inside the cab.

The cab shall offer an interior height of 57.50 inches from the front floor to the headliner in the non-raised roof area and a rear floor to headliner height of 65.00 inches in the raised roof area, at a minimum. The cab shall offer an interior measurement at the floor level from the rear of the engine tunnel to the rear wall of the cab of 51.88 inches. All interior measurements shall include the area within the interior trimmed surfaces and not to any unfinished surface.

The cab shall include a driver and officer area with two (2) cab doors large enough for personnel in full firefighting gear. The front doors shall offer a clear opening of 40.25 inches wide X 53.50 inches high, from the cab floor to the top of the door opening. The cab shall also include a crew area with up to two (2) cab doors, also large enough for personnel in full firefighting gear. The rear doors shall offer a clear opening of 32.25 inches wide X 61.00 inches high, from the cab floor to the top of the door opening.

The cab shall incorporate a progressive two (2) step configuration from the ground to the cab floor at each door opening. The progressive steps are vertically staggered and extend the full width of each step well allowing personnel in full firefighting gear to enter and exit the cab easily and safely.

The first step for the driver and officer area shall measure approximately 11.50 inches deep X 31.13 inches wide. The intermediate step shall measure approximately 8.50 inches deep X 32.50 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 11.00 inches.

The first step for the crew area shall measure approximately 11.50 inches deep X 20.44 inches wide. The intermediate step shall measure approximately 10.25 inches deep X 22.75 inches wide. The height

from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 12.80 inches.

OCCUPANT PROTECTION

An IMMI 4Front® occupant protection system shall be installed in the vehicle's cab. The system shall inflate three (3) air bags in the following locations:

- Steering wheel air bag to protect the head and neck of the driver
- Knee bolster air bag to protect the driver's legs
- Knee bolster air bag to protect the officer's legs

The air bags shall use a combination of high-pressure stored argon and oxygen with a pyrotechnic charge for initiation to inflate the bags remain inflated for several seconds.

The system shall be connected to the crash detection sensor that will also activate the driver and first officer integrated belt pretensioners if it detects a frontal crash.

A RollTek™ rollover occupant protection system shall be installed in the apparatus cab. The system shall include an integrated roll sensor (IRS) master module and a slave sensor in applicable configurations.

The IRS shall be a microprocessor-controlled solid-state sensing device that utilizes vehicle-specific calibrations to detect rollovers. The IRS shall be equipped with pyrotechnic loops for connection to the protective countermeasures which shall include seat integrated side roll airbags (SRA), integrated seat belt pretensioners, and air seat pull-downs (S4S), in applicable occupant seat positions.

The IRS shall continuously monitor the truck`s acceleration and angle, and upon detection of an imminent roll-over, shall activate protective countermeasures in a pre-programmed sequence. In addition, the IRS shall also act as a data recorder to record crash events for post-crash evaluation.

CAB FRONT FASCIA

The front cab fascia shall be the Evolution style, constructed of lightweight, impact resistant fiberglass reinforced plastic which shall be attached to the front cab skin to offer an appealing exterior. The cab fascia will encompass the front of the aluminum cab structure from the bottom of the windshield to the lower section of the cab.

The fascia shall include modules for two (2) single Hi/Low beam headlamps, the modules shall also provide a turn signal position integrated with the headlight bezel. The headlight bezel shall be removable, when removed there shall be easy access for maintenance of the light assemblies as well as access to the engine air intake ember separator, the electrical bulkhead connections, and the transmission electronic communications module. Stylized louvers are incorporated into the design of the fascia to enhance air flow to the cooling system.

The Evolution fascia shall also provide two (2) warning light positions below each of the headlamp modules for the installation of up to four (4) warning lights on the front cab fascia.

FRONT GRILLE

The fascia shall include a stainless steel flat front grille. The grille shall be installed on the front of the cab fascia. The upper portion of the grille shall be hinged to provide service access behind the grille.

CAB UNDERCOAT

There shall be a rubberized undercoating applied to the underside of the cab that provides abrasion protection, sound deadening and corrosion protection.

CAB SIDE DRIP RAIL

There shall be a drip rail along the top radius of each cab side. The drip rails shall help prevent water from the cab roof running down the cab side.

CAB PAINT EXTERIOR

The cab exterior shall be painted a single color per customers specified paint color following the RFG-SR-001 paint standards.

CAB PAINT PROCESS/MANUFACTURER

The cab shall be painted with Sikkens paint prior to the installation of glass accessories and all other cab trim to ensure complete paint coverage and the maximum in corrosion protection of all metal surfaces.

All metal surfaces on the cab shall be mechanically etched by sanding disc to remove any surface oxidation or surface debris which may hinder the paint adhesion. Once all imperfections on the exterior surfaces are removed and sanded smooth, body fillers shall be applied to the cab on all surfaces that require a critically aesthetic finish and sanded smooth.

The entire cab shall then be coated with a high quality base primer that is designed to fill any minor surface defects, provide an adhesive bond between the primer and the paint and improve the color and gloss retention of the color. The finish to this procedure shall be sanding the cab to a smooth finish followed by sealing the seams with an automotive seam sealer. The minimum thickness of the primer coat after sanding shall be 2.50 mils with a maximum thickness of 5.00 mils.

The cab shall then be painted the specific color(s) designated by the customer with an acrylic urethane type system designed to retain color and resist acid rain and most atmospheric chemicals found on an emergency scene. The paint shall have a minimum thickness of 1.00 mils with a maximum of 4 mills, followed by a clear top coat with a minimum of 2.5 mils and a maximum of 3.5 mils. The entire cab shall then be baked to speed the curing process of the coatings.

CAB PAINT PRIMARY/LOWER COLOR

The lower paint color shall be Sikkens FLNA 30194 Red.

CAB PAINT WARRANTY

Purchaser shall receive a Paint and Finish (Exterior Clear coated) Ten (10) Years limited warranty in accordance with, and subject to, warranty certificate RFW0710. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

CAB INTERIOR/COMPONENT COATING

All visible cab structure surfaces and painted interior components shall be manually selected at each interior component's sub category.

CAB PAINT INTERIOR

The visible interior cab structure surfaces shall be painted with a multi-tone silver gray texture finish.

CAB ENTRY DOORS

The cab shall include four (4) entry doors, two (2) front doors and two (2) crew doors designed for ease of entering and egress when outfitted with an SCBA. The doors shall be constructed of extruded aluminum with a nominal thickness of 0.13 inch. The exterior skins shall be constructed of 0.13 inch aluminum plate.

The doors shall include a double rolled style automotive rubber seal around the perimeter of each door frame and door edge which ensures a weather tight fit.

All door hinges shall be hidden within flush mounted cab doors for a pleasing smooth appearance and perfect fit along each side of the cab. Each door hinge shall be piano style with a 0.38 inch pin and shall be constructed of stainless steel.

CAB ENTRY DOOR TYPE

All cab entry doors shall be barrier clear design resulting in exposed lower cab steps. The doors shall provide approximately 32.00 inches of clearance from the ground to the bottom of the door so cab doors may be opened un-hindered by most obstacles encountered, such as guard rails along interstate highways.

Entry doors shall include Pollak mechanical plunger style switches for electrical component activation.

CAB INSULATION

The cab ceiling and walls shall include a nonwoven polyester fiber insulation. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

LH MID EMS COMPARTMENT

The cab shall include a compartment located in the middle of the wall above the left side wheel well. The inner rear corner of the compartment shall be chamfered at a 45-degree angle to eliminate the square corner. The chamfered corner shall be cut at a width and depth of 7.00 inches the full height of the compartment. This compartment shall be offset and measure 17.00 inches just inside the door opening offset to 24.00 inches wide X 26.00 inches high X 25.00 inches deep.

LH MID EMS COMPARTMENT INTERIOR

The cab compartment located in the middle of the wall above the left side wheel well shall include solid aluminum walls with no interior access. This compartment shall be finished to customer specification.

LH MID EMS COMPARTMENT DOOR HARDWARE

The left side EMS compartment door shall include an Eberhard chrome plated slam latch. There shall be a switch to activate the open compartment warning light in the cab in the event the door is left ajar.

RH MID EMS COMPARTMENT

The cab shall include a compartment located in the middle of the wall above the right side wheel well. The inner rear corner of the compartment shall be chamfered at a 45-degree angle to eliminate the square corner. The chamfered corner shall be cut at a width and depth of 7.00 inches the full height of the compartment. This compartment shall be offset and measure 17.00 inches just inside the door opening offset to 24.00 inches wide X 26.00 inches high X 25.00 inches deep.

RH MID EMS COMPARTMENT INTERIOR

The cab compartment located in the middle of the wall above the right side wheel well shall include solid aluminum walls with no interior access. This compartment shall be finished to customer specification.

RH MID EMS COMPARTMENT DOOR HARDWARE

The right side EMS compartment door shall include a locking Eberhard chrome plated slam latch. There shall be a switch to activate the open compartment warning light in the cab in the event the door is left ajar.

MID EMS COMPARTMENT LIGHTING

The interior portion of each of the mid EMS compartments shall include compartment door activated LED lighting to illuminate all usable surfaces within each compartment.

MID EMS COMPARTMENT EXTERIOR FINISH

The mid EMS compartment surfaces that are exposed to the interior of the cab shall be painted with a multi-tone silver gray texture finish.

MID EMS COMPARTMENT INTERIOR FINISH

The EMS compartment interior shall feature a DA sanded finish.

REAR CAB ROOF MODIFICATION

The cab shall include a rear wall extension. The cab extension shall extend 13.50 inches out from the back wall of the cab and 57.25 inches down from the raised cab roof and shall be full width of the cab. The lower interior flat surface of the entire cab extension shall be 12.00 inches above the cab floor.

The rear wall extension weight limit shall be 1500 pounds.

CAB STRUCTURAL WARRANTY

Purchaser shall receive a Cab Structure (Aluminum) Ten (10) Years or 100,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0602. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

CAB TEST INFORMATION

The cab shall have successfully completed the preload side impact, static roof load application and frontal impact without encroachment to the occupant survival space when tested in accordance with Section 4 of SAE J2420 COE Frontal Strength Evaluation Dynamic Loading Heavy Trucks, Section 5 of SAE J2422 Cab Roof Strength Evaluation Quasi –Static Loading Heavy Trucks and ECE R29 Uniform Provisions Concerning the Approval of Vehicles with regard to the Protection of the Occupants of the Cab of a Commercial Vehicles Annex 3 Paragraph 5.

The above tests have been witnessed by and attested to by an independent third party. The test results were recorded using cameras, high speed imagers, accelerometers and strain gauges. Documentation of the testing shall be provided upon request.

ELECTRICAL SYSTEM

The chassis shall include a single starting electrical system which shall include a 12 volt direct current multiplexing system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311 degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 275 degree Fahrenheit

minimum high temperature flame retardant loom. All nodes and sealed Deutsch connectors shall be waterproof.

OEM WIRING

The wiring system shall include a prewire for ECM park brake input and engine ground return circuits located behind the switch panel. The circuits shall include an extra 2.00 feet of wire and shall be labeled “ECM Park Brake Input”.

MULTIPLEX DISPLAY

The multiplex electrical system shall include two (2) Weldon Vista IV Touchscreen displays which shall be located one (1) on the left side dash in the switch panel and one (1) on the right side of the dash in the switch panel. The Touchscreen displays shall feature full color LCD display screens. The display shall include a message bar displaying the time of day, and important messages requiring acknowledgement by the user. There shall be virtual controls for the on-board diagnostics. The display screens shall be video ready for back- up cameras, thermal cameras, and DVD. A DIN type input connector ready for GPS interfacing shall be incorporated into the back of the display.

The Touchscreen displays shall measure approximately 6.25 inches wide x 3.38 inches in height. The displays shall offer varying fonts and background colors. The display shall be fully programmable to the needs of the customer and shall offer virtually infinite flexibility for screen configuration options.

LOAD MANAGEMENT SYSTEM

The apparatus load management shall be performed by the included multiplex system. The multiplex system shall also feature the priority of sequences and shall shed electrical loads based on the priority list specifically programmed.

DATA RECORDING SYSTEM

The chassis shall have a Weldon Vehicle Data Recorder (VDR) system installed. The system shall be designed to meet NFPA 1901 and shall be integrated with the Weldon Multiplex electrical system. The following information shall be recorded:

- Vehicle Speed
- Acceleration
- Deceleration
- Engine Speed
- Engine Throttle Position
- ABS Event
- Seat Occupied Status
- Seat Belt Status
- Master Optical Warning Device Switch Position
- Time
- Date

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system. The laptop connection shall be a panel mounted female type B USB connection point, remotely mounted in the left side foot well.

ACCESSORY POWER

The electrical distribution panel shall include two (2) power studs. The studs shall be size #10 and each of the power studs shall be circuit protected with a fuse of the specified amperage. One (1) power stud shall be capable of carrying up to a 40 amp battery direct load. One (1) power stud shall be capable of carrying up to a 15 amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud. A 225 amp master switched and fused power and ground stud shall be provided and installed on the chassis near the left hand battery box for OEM body connections.

AUXILIARY ACCESSORY POWER

An auxiliary set of power and ground studs shall be provided and installed behind the electrical center cover with a 60 amp breaker. The studs shall be 0.38 inch diameter and capable of carrying up to a 60 amp load switched with the master power switch.

ADDITIONAL ACCESSORY POWER

An additional set of power and ground studs shall be provided and installed behind the rocker switch panel. The power and ground stud shall be circuit protected with a 60 amp breaker. The studs shall be 0.38 inch diameter and capable of carrying up to a 60 amp battery direct load.

EXTRA ACCESSORY POWER

An auxiliary ten (10) position blade type fuse panel shall be installed behind the officer's seat on the side of the engine tunnel. The fuse panel shall be protected by a 60 amp fuse and be wired for a battery direct load.

ANCILLARY ACCESSORY POWER

One (1) ancillary six (6) position Blue Sea Systems 5025 blade type fuse panel shall be installed vertically behind the driver's seat on the side of the engine tunnel. The fuse panel shall be protected by a 40 amp fuse. The panel shall be capable of carrying up to a maximum 40 amp battery direct load.

EXTERIOR ELECTRICAL TERMINAL COATING

All terminals exposed to the elements will be sprayed with a high visibility protective rubberized coating to prevent corrosion.

ELECTRICAL SYSTEM WARRANTY

Purchaser shall receive an Electrical System Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0202. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

ENGINE

The chassis engine shall be a Cummins heavy heavy duty (HHD) certified X10 engine. The X10 engine shall be an in-line six (6) cylinder, four-cycle diesel-powered engine. The engine shall offer a rating of 450 horsepower at 1432 RPM and shall be governed at 1800 RPM. The torque rating shall feature 1650-foot pounds of torque at 1100 RPM.

The engine shall feature a VGT™ Turbocharger, a high-pressure common rail fuel system, fully integrated electronic controls with an electronic governor, and shall be EPA certified to meet the 2027 emissions standards.

A wiring harness shall be supplied ending at the back of the cab. The harness shall include a connector which shall allow an optional harness for the pump panel. The included circuits shall be provided for a

tachometer, oil pressure, engine temperature, hand throttle, high idle and a PSG system. A circuit for J1939 data link shall also be provided at the back of the cab.

Until the 2027 EPA engine integration is finalized, option availability and body design relative to engine and aftertreatment are subject to change. Additional costs associated with the 2027 EPA engine will be passed on to the end user. No exceptions.

CAB ENGINE TUNNEL

The cab interior shall include an integrated engine tunnel constructed of 5052-H32 Marine Grade, 0.19 of an inch thick aluminum. The tunnel shall be a maximum of 41.50 inches wide X 25.50 inches high.

DIESEL PARTICULATE FILTER CONTROLS

There shall be two (2) controls for the diesel particulate filter. One (1) control shall be for regeneration and one (1) control shall be for regeneration inhibit.

ENGINE PROGRAMMING HIGH IDLE SPEED

The engine high idle control shall maintain the engine idle at approximately 1250 RPM when engaged.

ENGINE HIGH IDLE CONTROL

The vehicle shall be equipped with an automatic high-idle speed control which shall be pre-set to operate the engine at a specified RPM to increase alternator output if the system voltage drops to 12.5 volts. This device shall automatically operate only when the engine is running, the transmission is in neutral, and with the parking brake set. The automatic high idle will stay engaged for a minimum of ten (10) minutes and until the system, voltage has reached 13.0 volts. Application of the service brake will override the automatic high idle and reset timer. The vehicle shall be equipped with a high-idle speed virtual button on the vehicle display and control screen to activate/deactivate manual control only. It shall be pre-set so when activated, it will operate the engine at the specified RPM to increase alternator output. This device shall operate only when the engine is running, the transmission is in neutral, and with the parking brake set. When automatically engaged the high idle shall disengage when the operator depresses the brake pedal, or the transmission is placed in gear, and shall be available to manually or automatically re-engage when the brake pedal is released, or when the transmission is placed in neutral. Virtual control screen shall not override automatic high idle between voltage parameters during timed cycle. Display shall indicate when high idle is disabled, enabled, or active.

ENGINE PROGRAMMING ROAD SPEED GOVERNOR

The engine shall include programming which will govern the top speed of the vehicle.

AUXILIARY ENGINE BRAKE

A compression brake, for the six (6) cylinder engine shall be provided. A cutout relay shall be installed to disable the compression brake when in pump mode or when an ABS event occurs. The engine compression brake shall activate upon 0% accelerator when in operation mode and actuate the vehicle's brake lights.

The engine shall utilize a variable geometry turbo (VGT) as an integrated auxiliary engine brake to offer a variable rate of exhaust flow, which when activated in conjunction with the compression brake shall enhance the engine's compression braking capabilities.

AUXILIARY ENGINE BRAKE CONTROL

An engine compression brake control device shall be included. The electronic control device shall monitor various conditions and shall activate the engine brake only if all of the following conditions are simultaneously detected:

- A valid gear ratio is detected.
- The driver has requested or enabled engine compression brake operation.
- The throttle is at a minimum engine speed position.
- The electronic controller is not presently attempting to execute an electronically controlled final drive gear shift.

The compression brake shall be controlled through an on/off switch and a low/medium/high selector switch.

ELECTRONIC ENGINE OIL LEVEL INDICATOR

The engine oil shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal. The warning shall activate in a low oil situation upon turning on the master battery and ignition switches without the engine running.

FLUID FILLS

The engine oil, coolant, transmission, and power steering fluid fills shall be located under the cab. The front of the chassis shall accommodate engine oil check through the grille. The windshield washer fill shall be accessible through the front left side mid step.

ENGINE DRAIN PLUG

The engine shall include an original equipment manufacturer installed oil drain plug.

ENGINE WARRANTY

The Cummins engine shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first.

REMOTE THROTTLE HARNESS

An apparatus interface wiring harness for the engine and transmission pump interlocks shall be supplied with the chassis. The harness shall include a connector for connection to a chassis pump panel harness supplied by the body builder and shall terminate in the left frame rail behind the cab for connection by the body builder. The harness shall include circuits deemed for a pump panel and shall contain circuits for a hand throttle, and a multiplexed gauge. Separate circuits shall also be included for a pump control switch, “Pump Engaged” and “OK to Pump” indicator lights, open compartment ground, start signal, park brake ground, ignition signal, master power, clean power, customer ignition, air horn solenoid switch, high idle switch and high idle indicator light. The harness shall contain interlocks that will prevent shifting to road or pump mode unless the transmission output speed translates to less than 1 mph and the transmission is in neutral. The shift to pump mode shall also require the park brake be set.

ENGINE PROGRAMMING REMOTE THROTTLE

The engine ECM (Electronic Control Module) discreet wire remote throttle circuit shall be turned off for use with a J1939 based pump controller or when the discreet wire remote throttle controls are not required.

ENGINE PROGRAMMING IDLE SPEED

The engine low idle speed will be programmed at 700 rpm.

ENGINE AIR INTAKE

The engine air intake system shall include an ember separator. This ember separator shall be designed to protect the downstream air filter from embers using a combination of unique flat and crimped metal screens packaged in a heavy duty galvanized steel frame. This multilayered screen shall trap embers and allow them to burn out before passing through the pack.

The engine air intake system shall also include an air cleaner mounted above the radiator. This air cleaner shall utilize a replaceable dry type filter element designed to prevent dust and debris from being ingested into the engine. A service cover shall be provided on the housing, reducing the chance of contaminating the air intake system during air filter service.

The air intake system shall include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

ENGINE FAN DRIVE

The engine cooling system fan shall incorporate a thermostatically controlled, Horton fully variable type fan drive with SmartClutch J-1939 CAN controller. The clutch fan shall override the thermostatic variable speed and function as full on automatically in pump mode.

The variable speed fan clutch only engages at the amount needed for proper cooling to facilitate improved vehicle performance, cab heating in cold climates, and fuel economy. The fan clutch design shall be fail-safe so that if the clutch drive fails the fan shall engage to prevent engine overheating due to the fan clutch failure. The fan speed shall include a J-1939 CAN clutch controller to receive signal from the engine control module to activate at variable rates of speed. Variable speeds shall be set through thermostatic and engine speed signals to run as efficiently and quietly as required to maintain temperature.

ENGINE COOLING SYSTEM

There shall be a heavy-duty aluminum cooling system designed to meet the demands of the emergency response industry. The cooling system shall have the capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the requirements specified by the engine and transmission manufacturer and all EPA requirements. The complete cooling system shall be mounted to isolate the entire system from vibration or stress. The individual cores of the cooling system shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress into the adjoining cores.

The cooling system shall be comprised of a charge air cooler to radiator serial flow package that provides the maximum cooling capacity for the specified engine as well as serviceability. The main components shall include a surge tank, a charge air cooler bolted to the front of the radiator, recirculation shields, a shroud, a fan, and required tubing.

The radiator shall be a down-flow design constructed with aluminum cores, plastic end tanks, and a steel frame. The radiator shall be equipped with a drain cock to drain the coolant for serviceability.

The cooling system shall include a one piece injected molded polymer fan with a three (3) piece fiberglass fan shroud.

The cooling system shall be equipped with a surge tank that is capable of removing entrained air from the system. The surge tank shall be equipped with a low coolant probe and rearward oriented sight glass

to observe coolant in the system. A cold fill and observation line shall be included within the frame mounted translucent recovery bottle to monitor the level of the coolant. The surge tank shall have a dual seal cap that meets the engine manufacturer's pressure requirements and allows for expansion and recovery of coolant into a separate integral expansion chamber.

All radiator tubes shall be formed from aluminized steel tubing. Recirculation shields shall be installed where required to prevent heated air from reentering the cooling package and affecting performance.

The charge air cooler shall be a cross-flow design constructed completely of aluminum with cast tanks. All charge air cooler tubes shall be formed from aluminized steel tubing and installed with silicone hump hoses and stainless steel "constant torque" style clamps meeting the engine manufacturer's requirements.

The radiator and charge air cooler shall be removable through the bottom of the chassis.

ENGINE COOLING SYSTEM PROTECTION

The engine cooling system shall include a recirculation shield designed to act as a light duty skid plate below the radiator to provide additional protection for the engine cooling system from light impacts, stones, and road debris. The skid plate shall be painted to match the frame components.

ENGINE COOLANT

The cooling package shall include Extended Life Coolant (ELC). The use of ELC provides longer intervals between coolant changes over standard coolants providing improved performance. The coolant shall contain a 50/50 mix of ethylene glycol and de-ionized water to keep the coolant from freezing to a temperature of -34 degrees Fahrenheit.

Proposals offering supplemental coolant additives (SCA) shall not be considered, as this is part of the extended life coolant makeup.

ELECTRONIC COOLANT LEVEL INDICATOR

The instrument panel shall feature a low engine coolant indicator light which shall be located in the center of the instrument panel. An audible tone alarm shall also be provided to warn of a low coolant incident.

COOLANT HOSES

The cooling systems hose shall be formed silicone hose and formed aluminized steel tubing and include stainless steel constant torque band clamps.

ENGINE COOLANT OVERFLOW BOTTLE

A remote engine coolant overflow expansion bottle shall be provided in the case of over filling the coolant system. The overflow bottle shall capture the expansion fluid or overfill rather than allow the fluid to drain on the ground.

DIESEL EXHAUST FLUID TANK

The exhaust system shall include a molded cross linked polyethylene tank for Diesel Exhaust Fluid (DEF). The tank shall have a capacity of five (5) usable gallons and shall be mounted on the left hand side of the chassis frame.

The DEF tank shall be designed with capacity for expansion in case of fluid freezing. Engine coolant, which shall be thermostatically controlled, shall be run through lines in the tank to help prevent the DEF from freezing and to provide a means of thawing the fluid if it should become frozen.

The tank fill tube shall be routed under the rear of the cab with the fill neck and splash guard accessible in the top rear step. The backside of the access door shall include an additional label that states "DEF Fluid Only – 5 Gallon Capacity".

ENGINE EXHAUST ACCESSORIES

The exhaust system shall be modified to accept a Plymovent exhaust extraction system collar.

ENGINE EXHAUST WRAP

The exhaust tubing between the engine turbo and the diesel particulate filter (DPF) shall be wrapped with a thermal cover in order to retain the necessary heat for DPF regeneration. The exhaust wrap shall also help protect surrounding components from radiant heat which can be transferred from the exhaust.

The exhaust flex joint shall not include the thermal exhaust wrap.

EMISSIONS SYSTEMS WARRANTY

Purchaser shall receive a Regulated Emissions Systems ten (10) years, or 450,000 miles, or 22,000 engine hours limited warranty for heavy heavy-duty engines in accordance with, and subject to, warranty certificate RFW0144. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

REGULATED EMISSIONS WARRANTY TIRES

Purchaser shall receive a regulated emissions tires two (2) years or 24,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0145. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

REGULATED EMISSIONS WARRANTY AIR CONDITIONING

Purchaser shall receive a regulated emissions air conditioning five (5) years or 100,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0146. The warranty certificate is incorporated by reference into this proposal and included with this proposal or available upon request.

TRANSMISSION

The drive train shall include an Allison model EVS 4000 torque converting, automatic transmission which shall include electronic controls. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing.

The transmission shall include two (2) internal oil filters which shall offer Allison formulated Castrol TranSynd™ synthetic transmission fluid which shall be utilized in the lubrication of the EVS transmission. An electronic oil level sensor shall be included with the readout located in the shift selector.

The transmission gear ratios shall be:

1st	3.51:1
2nd	1.91:1
3rd	1.43:1
4th	1.00:1

5th 0.74:1
6th 0.64:1 (if applicable)
Rev 4.80:1

TRANSMISSION MODE PROGRAMMING

The transmission, upon start-up, will select a six (6) speed operation without the need to press the mode button. The transmission programming shall only include S1 performance shift schedules. The mode button shall not include a secondary economy shift schedule.

TRANSMISSION FEATURE PROGRAMMING

The Allison Gen V/VI-E transmission EVS group package number 127 shall contain the 198 vocational package in consideration of the duty of this apparatus as a pumper. This package shall incorporate an automatic neutral with selector override. This feature commands the transmission to neutral when the park brake is applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.

This package shall be coupled with the use of a split shaft PTO and incorporate pumping circuits. These circuits shall be used allowing the vehicle to operate in the fourth range lockup while operating the pump mode due to the 1 to 1 ratio through the transmission, therefore the output speed of the engine is the input speed to the pump. The pump output can be easily calculated by using this input speed and the drive ratio of the pump itself to rate the gallons of water the pump can provide.

A transmission interface connector shall be provided in the cab. This package shall contain the following input/output circuits to the transmission control module. The Gen V/VI-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance.

Function ID	Description	Wire assignment
Inputs		
C	PTO Request	142
J	Fire Truck Pump Mode (4th Lockup)	122 / 123
Outputs		
C	Range Indicator	145 (4th)
G	PTO Enable Output	130
	Signal Return	103

TRANSMISSION SHIFT SELECTOR

An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and easy reach. The shift selector shall have a graphical Vacuum Florescent Display (VFD) capable of displaying two lines of text. The shift selector shall provide mode indication and a prognostic indicator (wrench symbol) on the digital display. The prognostics monitor various operating parameters and shall alert you when a specific maintenance function is required.

ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR

The transmission fluid shall be monitored electronically.

TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE

When the auxiliary brake is engaged, the transmission shall automatically shift to second gear to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.

TRANSMISSION COOLING SYSTEM

The transmission shall include a water to oil cooler system located in the cooling loop between the radiator and the engine. The transmission cooling system shall meet all transmission manufacturer requirements. The transmission cooling system shall feature continuous flow of engine bypass water to maintain uninterrupted transmission cooling.

TRANSMISSION DRAIN PLUG

The transmission shall include an original equipment manufacturer installed magnetic transmission fluid drain plug.

TRANSMISSION WARRANTY

The Allison EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty.

LH PTO

A PTO shall be installed on the transmission by the OEM.

LH PTO MODEL

A ten (10) bolt Chelsea model 281-GSFJP-B8RK heavy duty transmission driven PTO shall be installed. The clutched shifted PTO is designed specifically for the Allison world transmission and provides an intermittent and continuous torque rating of 265 lb. ft.

PTO LOCATION

The transmission shall have two (2) power take off (PTO) mounting locations, one (1) in the 8:00 o'clock position and one (1) in the 1:00 o'clock position.

LH PTO CONTROL

A pre-wire shall be provided for a customer mounted left hand power take off which shall be controlled by the transmission. The power take off shall be activated by a red locking on/off rocker switch which contains an integral light which shall illuminate upon a positive engagement of the power take off. This switch shall be located on dash.

Required operating conditions for enabling this function are:

- Throttle position is low
- Engine speed is within customer specified constant limits

Transmission output speed is within customer specified constant limits

PTO PROGRAMMING

The power take off shall be programmed for operator control such that it shall only engage at or below 900 engine RPM and a transmission output speed of 250 RPM. The PTO shall operate in a range up to 4000 engine RPM or a transmission output speed of 5000 RPM. The PTO programming shall provide for automatic disengagement set at a specified engine speed of 4000 RPM, or transmission output speed of 5000 RPM. The range shall be programmed to protect equipment driven from the power take off.

DRIVELINE

All drivelines shall be heavy duty metal tube and equipped with MSI 1810 series universal joints. The shafts shall be dynamically balanced prior to installation to alleviate future vibration. In areas of the

driveline where a slip shaft is required, the splined slip joint shall be coated with Glide Coat®. The drivelines shall include Meritor brand u-joints with thrust washers.

DRIVELINE GUARDS

Two (2) driveline guard loops shall be provided and installed to support the driveline shafts for routine maintenance and in the event of a driveline component failure.

MIDSHIP PUMP / GEARBOX

A mid-ship split shaft pump shall be installed by the apparatus manufacturer. The chassis manufacturer shall not provide any driveline provisions for the pump installation.

FUEL FILTER/WATER SEPARATOR

The fuel system shall have a Fleetguard FS20121 fuel filter/water separator as a primary filter. The fuel filter shall have a drain valve.

A water in fuel sensor shall be provided and wired to an instrument panel lamp and audible alarm to indicate when water is present in the fuel/water separator.

A secondary fuel filter shall be included as approved by the engine manufacturer.

FUEL LINES

The fuel system supply and return lines installed from the fuel tank to the engine shall be reinforced nylon tubing rated for diesel fuel. The fuel lines shall be brown in color and connected with brass fittings.

ELECTRIC FUEL PRIMER

Integral to the engine assembly is an electric lift pump that serves the purpose of pre-filter fuel priming.

FUEL COOLER

A fuel cooler shall be provided to lower fuel temperature allowing the vehicle to operate at higher ambient temperatures. The fuel cooler shall include an electrical fan and temperature-controlled relay switch.

FUEL TANK

The fuel tank shall have a capacity of sixty-eight (68) gallons and shall measure 35.00 inches in width X 17.00 inches in height X 29.00 inches in length.

The baffled tank shall have a vent port to facilitate venting to the top of the fill neck for rapid filling without "blow-back" and a roll over ball check vent for temperature related fuel expansion and draw.

The tank is designed with dual draw tubes and sender flanges. The tank shall have 2.00 inch NPT fill ports for right or left hand fill. A 0.50 inch NPT drain plug shall be centered in the bottom of the tank.

The fuel tank shall be mounted below the frame, behind the rear axle. Two (2) three-piece strap hanger assemblies with “U” straps bolted midway on the fuel tank front and rear shall be utilized to allow the tank to be easily lowered and removed for service purposes. Rubber isolating pads shall be provided between the tank and the upper tank mounting brackets. Strap mounting studs through the rail, hidden behind the body shall not be acceptable.

FUEL TANK MATERIAL AND FINISH

The fuel tank shall be constructed of 12 gauge aluminized steel. The exterior of the tank shall be powder coated black and then painted to match the frame components.

All powder coatings, primers and paint shall be compatible with all metals, pretreatments and primers used. The cross hatch adhesion test per ASTM D3359 Method B, results to be 5B minimum. The pencil hardness test per ASTM D3363 shall have a final post-curved pencil hardness of H-2H. The direct impact resistance test per ASTM D2794, results to be 5B minimum.

Any proposals offering painted fuel tanks with variations from the above process shall not be accepted. The film thickness of vendor supplied parts shall also be sufficient to meet the performance standards as stated above.

FUEL TANK STRAP MATERIAL

The fuel tank straps shall be constructed of ASTM A-36 steel. The fuel tank straps shall be powder coated black and then painted to match the frame components if possible.

FUEL TANK FILL PORT

The fuel tank fill ports shall be provided with two (2) left fill ports located one (1) in the forward position and one (1) in the middle position and the right fill port located in the middle position of the fuel tank.

FUEL TANK SERVICEABILTY PROVISIONS

The chassis fuel lines shall have additional length provided so the tank can be easily lowered and removed for service purposes. The additional 8.00 feet of length shall be located above the fuel tank and shall be coiled and secured. The fuel line fittings shall be pointed towards the right side (curbside) of the chassis.

FUEL TANK DRAIN PLUG

A 0.5 inch NPT magnetic drain plug shall be centered in the bottom of the fuel tank.

FRONT AXLE

The front axle shall include a Reyco Granning ResponseMaster®, fire apparatus specific independent front suspension (IFS) offering superior ride and improved handling.

The suspension shall utilize fully independent double wishbone arms with carrier and kingpin for optimized scrub radius. Air springs are tuned for ride and help reduce suspension weight. The IFS reduces turn radius with improved wheel cut over beam axles. The hydraulic damper shall feature rebound control to ensure the maximum load stability and superior driver comfort. The IFS system shall improve handling and offer better braking because of improved ground to tire ratio. This design shall allow for independent adjustment of the vehicle's alignment settings.

Proposals offering independent front axles comprised of torsion bar style suspensions shall not be considered.

FRONT AXLE WARRANTY

The front axle shall be warranted by Tuthill for three (3) years or 150,000 miles, which ever comes first. Details of the Tuthill warranty are provided on the PDF document attached to this option.

FRONT WHEEL BEARING LUBRICATION

The front axle wheel bearings shall be lubricated with oil. The oil level can be visually checked via clear inspection windows in the front axle hubs.

FRONT SHOCK ABSORBERS

Two (2) Koni shock absorbers shall be provided and installed as part of the front suspension system. Each shock shall deliver improved road handling and durability.

FRONT SUSPENSION

The independent front suspension (IFS) system shall improve handling and offer better braking because of improved ground to tire ratio. Lower spring rates and independent wheel travel shall reduce the shock within the wheel and feedback throughout the axle. Increased roll stiffness reduces chassis lean in cornering. The suspension travel of the IFS shall be approximately 6.50 inches, providing 3.00 inches jounce and 3.50 inches rebound of the suspension. This feature shall offer a smoother ride for personnel and sensitive equipment. The IFS front axle shall be rated between 18,000 and 20,000 pounds.

Proposals offering independent front axles comprised of torsion bar style suspensions shall not be considered.

STEERING COLUMN/ WHEEL

The cab shall include a Douglas Autotech steering column which shall include a seven (7) position tilt, a 2.25 inch telescopic adjustment, and an 18.00 inch, four (4) spoke steering wheel located at the driver's position. The steering wheel shall be covered with black polyurethane foam padding.

The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and headlamp dimmer switch.

ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR

The power steering fluid shall be monitored electronically and shall send a signal to activate an audible alarm and visual warning in the instrument panel when fluid level falls below normal.

POWER STEERING PUMP

The hydraulic power steering pump shall be a TRW PS and shall be gear driven from the engine. The pump shall be a balanced, positive displacement, sliding vane type. The power steering system shall include an oil to air passive cooler.

FRONT AXLE CRAMP ANGLE

The chassis shall have a front axle cramp angle of 53-degrees to the left and right.

POWER STEERING GEAR

The power steering gear shall be a TRW model TAS 85/RCS 85.

CHASSIS ALIGNMENT

The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer.

REAR AXLE

The rear axle shall be a Meritor model RS-24-160 single drive axle. The axle shall include precision forged, single reduction differential gearing, and shall have a rated capacity of 24,000 pounds.

The axle shall be built of superior construction and quality components to provide the rugged dependability needed to stand up to the fire industry's demands. The axle shall include rectangular shaped, hot-formed housing with a standard wall thickness of 0.50 of an inch for extra strength and rigidity and a rigid differential case for high axle strength and reduced maintenance.

The axle shall have heavy-duty Hypoid gearing for longer life, greater strength and quieter operation. Industry-standard wheel ends for compatibility with both disc and drum brakes, and unitized oil seal technology to keep lubricant in and help prevent contaminant damage will be used.

REAR AXLE DIFFERENTIAL LUBRICATION

The rear axle differential shall be lubricated with oil.

REAR WHEEL BEARING LUBRICATION

The rear axle wheel bearings shall be lubricated with oil.

VEHICLE TOP SPEED

The top speed of the vehicle shall be approximately 68 MPH +/-2 MPH at governed engine RPM.

REAR SUSPENSION

The single rear axle shall feature a Hendrickson Firemaax™ air suspension. The suspension shall include two optimized air springs mounted to cast structural trailing arms, a transverse cross beam for increased roll stability and two heavy duty shock absorbers. Dual air height control valves shall be installed to ensure equal frame height on both sides of the vehicle regardless of the load. Axle alignment is maintained using two eccentric bushings at each frame bracket.

The rear suspension capacity shall be rated at 24,000 pounds.

REAR SHOCK ABSORBERS

Shock absorbers shall be supplied by the suspension manufacturer and installed on the rear axle suspension.

TIRE INTERMITTENT SERVICE RATING

The chassis shall be rated using Intermittent Service ratings provided to the emergency vehicle market by the tire manufacturers as the basis for determining the maximum vehicle load and speed.

FRONT TIRE

The front tires shall be Michelin 315/80R-22.5 20PR "L" tubeless radial XZUS 2 regional tread.

The front tire stamped load capacity shall be 20,000 pounds per axle with a nominal speed rating of 65 miles per hour when properly inflated to 130 pounds per square inch.

The Michelin Intermittent Service Rating maximum load capacity shall be 21,400 pounds per axle with a maximum speed of 65 miles per hour when properly inflated to 130 pounds per square inch.

The Michelin Intermittent Service Rating maximum speed capacity shall be 20,000 pounds per axle with a speed rating of 75 miles per hour when properly inflated to 130 pounds per square inch.

The Michelin Intermittent Service Rating limits the operation of the emergency vehicle to no more than fifty (50) miles of continuous operation under maximum recommended payload, or without stopping for at least twenty (20) minutes. The emergency vehicle must reduce its speed to no more than 50 MPH after the first fifty (50) miles of travel.

REAR TIRE

The rear tires shall be Michelin 12R-22.5 16PR "H" tubeless radial XDN2 all-weather tread.

The rear tire stamped load capacity shall be 27,120 pounds per axle with a nominal speed rating of 75 miles per hour when properly inflated to 120 pounds per square inch.

The Michelin Intermittent Service Rating maximum load capacity shall be 29,020 pounds per axle with a maximum speed of 75 miles per hour when properly inflated to 120 pounds per square inch.

The Michelin Intermittent Service Rating maximum speed capacity shall match the nominal speed rating.

The Michelin Intermittent Service Rating limits the operation of the emergency vehicle to no more than fifty (50) miles of continuous operation under maximum recommended payload, or without stopping for at least twenty (20) minutes. The emergency vehicle must reduce its speed to no more than 50 MPH after the first fifty (50) miles of travel.

REAR AXLE RATIO

The rear axle ratio shall be 5.13:1.

TIRE PRESSURE INDICATOR

There shall be electronic chrome LED valve caps shipped loose for installation by the OEM which shall illuminate with a red LED when tire pressure drops 8psi provided. The valve caps are self-calibrating and set to the pressure of the tire upon installation.

FRONT WHEEL

The front wheels shall be Alcoa hub piloted, 22.50 inch X 9.00 inch aluminum wheels. The outer face of the wheels shall feature Alcoa's Dura-Bright® finish as an integral part of the wheel surface. Alcoa Dura-Bright® wheels keep their shine without polishing. Brake dust, grime and road debris are easily removed by simply cleaning the wheels with soap and water. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.

REAR WHEEL

The rear wheels shall be Alcoa hub piloted, 22.50 inch X 9.00 inch aluminum wheels with a polished outer surface and Alcoa Dura-Bright® wheel treatment as an integral part of the wheel surface. The inner rear wheels shall be Alcoa hub piloted, 22.50 inch X 9.00 inch aluminum wheels with a polished inner and outer surface and Alcoa Dura-Bright® wheel treatment as an integral part of the wheel surface. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.

BALANCE WHEELS AND TIRES

All of the wheels and tires, including any spare wheels and tire assemblies, shall include Counteract brand balancing beads.

WHEEL TRIM

The front wheels shall include stainless steel lug nut covers and stainless steel baby moons shipped loose with the chassis for installation by the apparatus builder. The baby moons shall have cutouts for oil seal viewing when applicable.

The rear wheels shall include stainless steel lug nut covers and band mounted spring clip stainless steel high hats shipped loose with the chassis for installation by the apparatus builder.

The lug nut covers, baby moons, and high hats shall be RealWheels® brand constructed of 304L grade, non-corrosive stainless steel with a mirror finish. Each wheel trim component shall meet D.O.T. certification.

BRAKE SYSTEM

A rapid build-up air brake system shall be provided. The air brakes shall include, at a minimum, a two (2) air tank, three (3) reservoir system with a total of 4152 cubic inch of air capacity. A floor mounted treadle valve shall be mounted inside the cab for graduated control of applying and releasing the brakes. An inversion valve shall be installed to provide a service brake application in the unlikely event of primary air supply loss. All air reservoirs provided on the chassis shall be labeled for identification.

The rear axle spring brakes shall automatically apply in any situation when the air pressure falls below 25 PSI and shall include a mechanical means for releasing the spring brakes when necessary. An audible alarm shall designate when the system air pressure is below 60 PSI.

A four (4) sensor, four (4) modulator Anti-lock Braking System (ABS) shall be installed on the front and rear axles in order to prevent the brakes from locking or skidding while braking during hard stops or on icy or wet surfaces. This in turn shall allow the driver to maintain steering control under heavy braking and in most instances, shorten the braking distance. The electronic monitoring system shall incorporate diagonal circuitry which shall monitor wheel speed during braking through a sensor and tone ring on each wheel. A dash mounted ABS lamp shall be provided to notify the driver of a system malfunction. The ABS system shall automatically disengage the auxiliary braking system device when required. The speedometer screen shall be capable of reporting all active defaults using PID/SID and FMI standards.

Additional safety shall be accommodated through Automatic Traction Control (ATC) which shall be installed on the single rear axle. The ATC system shall apply the ABS when the drive wheels lose traction. The system shall scale the electronic engine throttle back to prevent wheel spin while accelerating on ice or wet surfaces.

A virtual button on the vehicle display and control screen shall be provided and properly labeled "mud/snow". When the switch is pressed once, the system shall allow a momentary wheel slip to obtain traction under extreme mud and snow conditions. During this condition the ATC light shall blink continuously notifying the driver of activation. Pressing the switch again shall deactivate the mud/snow feature.

The Electronic Stability Control (ESC) unit is a functional extension of the electronic braking system. It is able to detect any skidding of the vehicle about its vertical axis as well as any rollover tendency. The control unit comprises an angular-speed sensor that measures the vehicle's motion about the vertical axis, caused, for instance, by cornering or by skidding on a slippery road surface. An acceleration sensor measures the vehicle's lateral acceleration. The Controller Area Network (CAN) bus provides

information on the steering angle. On the basis of lateral acceleration and steering angle, an integrated microcontroller calculates a theoretical angular speed for the stable vehicle condition.

FRONT BRAKES

The front brakes shall be Bendix ADB 22X disc brakes with 17.00 inch vented rotors.

REAR BRAKES

The rear brakes shall be Meritor 16.50 inch X 7.00 inch S-cam drum type.

PARK BRAKE

Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical spring force. This is accomplished by dual chamber rear brakes, satisfying the FMVSS parking brake requirements.

SUPPLEMENTAL BRAKE

A supplemental brake engagement shall be supplied that can only be engaged while the rear spring brakes are engaged. In addition to the mechanical rear brake engagement, the front service brakes shall also be engaged via air pressure, providing additional braking capability. Front service brake activation shall be accomplished with activation of the rear mechanical park brake valve.

PARK BRAKE CONTROL

A Meritor-Wabco manual hand control push-pull style valve shall operate the parking brake system. The control shall be yellow in color.

The parking brake actuation valve shall be mounted in the left hand switch panel.

REAR BRAKE SLACK ADJUSTERS

The rear brakes shall include Meritor automatic slack adjusters installed on the axle which features a simple, durable design offering reduced weight. The automatic slack adjusters shall feature a manual adjusting nut which cannot inadvertently be backed off and threaded grease fittings for easy serviceability.

AIR DRYER

The brake system shall include a Wabco System Saver 1200 air dryer with an integral 100 watt heater with a Metri-Pack sealed connector. The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor "unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure. The air dryer shall be located on the right hand frame rail forward of the front wheel behind the right hand cab step.

FRONT BRAKE CHAMBERS

The front brakes shall be provided with type 24 brake chambers as supplied with the independent front suspension axle.

REAR BRAKE CHAMBERS

The rear axle shall include TSE 30/36 brake chambers which shall convert the energy of compressed air into mechanical force and motion. This shall actuate the brake camshaft, which in turn shall operate the foundational brake mechanism forcing the brake shoes against the brake drum. The TSE Type 36 brake chamber has a 36.00 square inch effective area.

AIR COMPRESSOR

The air compressor provided for the engine shall be a Wabco® SS318 single cylinder pass-through drive type compressor which shall be capable of producing 18.7 CFM at 1200 engine RPMs. The air compressor shall feature a higher delivery efficiency translating to more air delivery per horsepower absorbed. The compressor shall include an aluminum cylinder head which shall improve cooling, reduce weight and decrease carbon formation. Superior piston and bore finishing technology shall reduce oil consumption and significantly increasing the system component life.

AIR GOVERNOR

An air governor shall be provided to control the cut-in and cut-out pressures of the engine mounted air compressor. The governor shall be calibrated to meet FMVSS requirements. The air governor shall be located on the air dryer bracket.

MOISTURE EJECTORS

Manual cable actuated drain valves shall be installed on all reservoirs of the air supply system. The actuation pull cables shall be coiled and tied at each drain valve. The supplied cables when extended shall be sufficient in length to allow each drain to be activated from the side of the apparatus.

AIR SUPPLY LINES

The air system on the chassis shall be plumbed with color coded reinforced nylon tubing air lines. The primary (rear) brake line shall be green, the secondary (front) brake line red, the parking brake line orange and the auxiliary (outlet) shall be blue.

Brass compression type fittings shall be used on the nylon tubing. All drop hoses shall be fiber reinforced neoprene covered hoses.

All nylon air tubing on the chassis shall be covered with high temperature plastic split loom.

AIR INLET CONNECTION

An air connection for the shoreline air inlet shall be supplied.

AIR INLET LOCATION

The air inlet shall be installed in the left hand side lower front step in the forward position.

AIR INLET/ OUTLET FITTING TYPE

The air connector supplied shall be a 0.25 inch size Tru-Flate Interchange style manual connection which is compatible with Milton ‘T’ style, Myers 0.25 inch Automotive style and Parker 0.25 inch 10 Series connectors.

REAR AIR TANK MOUNTING

If a combination of wheel base, air tank quantity, or other requirements necessitate the location of one or more air tanks to be mounted rear of the fuel tank, these tank(s) will be mounted perpendicular to frame.

WHEELBASE

The chassis wheelbase shall be 178.00 inches.

REAR OVERHANG

The chassis rear overhang shall be 56.00 inches.

FRAME

The frame shall consist of double rails running parallel to each other with cross members forming a ladder style frame. The frame rails shall be formed in the shape of a "C" channel, with the outer rail measuring 10.25 inches high X 3.50 inches deep upper and lower flanges X 0.38 inches thick with an inner channel of 9.44 inches high X 3.13 inches deep and 0.38 inches thick. Each rail shall be constructed of 110,000 psi minimum yield high strength low alloy steel. Each double rail section shall be rated by a Resistance Bending Moment (RBM) minimum of 3,213,100 inch pounds and have a minimum section modulus of 29.21 cubic inches. The frame shall measure 35.00 inches in width.

Proposals calculating the frame strength using the “box method” shall not be considered.

Proposals including heat treated rails shall not be considered. Heat treating frame rails produces rails that are not uniform in their mechanical properties throughout the length of the rail. Rails made of high strength, low alloy steel are already at the required yield strength prior to forming the rail.

A minimum of seven (7) fully gusseted 0.25 inch thick cross members shall be installed. The inclusion of the body mounting, or bumper mounting shall not be considered as a cross member. The cross members shall be attached using zinc coated grade 8 fasteners. The bolt heads shall be flanged type, held in place by distorted thread flanged lock nuts. Each cross member shall be mounted to the frame rails utilizing a minimum of 0.25 inch thick gusset reinforcement plates at all corners balancing the area of force throughout the entire frame.
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Any proposals not including additional reinforcement for each cross member shall not be considered.

All relief areas shall be cut in with a minimum 2.00 inch radius at intersection points with the edges ground to a smooth finish to prevent a stress concentration point.

FRAME CLEAR AREA

The chassis frame shall be left clear of chassis mounted components inside or outside the frame rails within the first 30.00 inches behind the cab to allow space for OEM installed components. Cross members may be installed in the clear area if required for proper frame or driveline configuration.

FRAME PAINT

The frame rails shall be hot dip galvanized prior to assembly and attachment of any components. The components that shall be galvanized shall include:

- Main frame “C” channel or channels

The frame parts which are not galvanized shall be powder coated prior to any attachment of components. Parts which shall be powder coated shall include but are not limited to:

- Steering gear bracket
- Front splayed rails and fish plates
- Bumper extensions
- Cross members
- Cross member gussets
- Fuel tank mounting brackets

- Fuel tank straps (unless material/finish is specified in 3130 subcat)
- Air tanks (unless color coded tanks are specified in 3205 subcat)
- Air tank mounting brackets
- Exhaust mounting brackets
- Air cleaner skid plate
- Radiator skid plate
- Battery supports, battery trays and battery covers

Other non-galvanized under carriage components which are received from the suppliers with coatings already applied shall include but are not limited to:

- Suspension components
- Front and rear axles

All powder coatings, primers and paint used on the non-galvanized components shall be compatible with all metals, pretreatments and primers used. The cross hatch adhesion test per ASTM D3359 shall not have a fail of more than ten (10) squares. The pencil hardness test per ASTM D3363 shall have a final post-curved pencil hardness of H-2H. The direct impact resistance test per ASTM D2794 shall have an impact resistance of 120.00 inches per pound at 2 mils.

The chassis under carriage consisting of frame, axles, driveline running gear, air tanks and other assorted chassis mounted components shall then be painted the primary lower cab color. Paint shall be applied prior to airline and electrical wiring installation.

FRAME ASSEMBLY STRUCTURAL

Purchaser shall receive a Frame Assembly Structural Fifty (50) Years or 250,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0305. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

FRAME RAIL CORROSION

Purchaser shall receive a Frame Rail Corrosion (Zinc Plate and Powder Coat) Twenty Five (25) Years or 150,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0316. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

FRAME COMPONENTS CORROSION

Purchaser shall receive a Frame Components Corrosion (Powder Coat) Three (3) Years or 48,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0313. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

FRONT BUMPER

The chassis shall be equipped with a severe duty front bumper constructed from structural steel channel. The bumper material shall be 0.38 thick ASTM A36 steel which shall measure 12.00 inches high with a 3.05 inch flange and shall be 99.00 inches wide with angled front corners.

The bumper shall be primed and painted as specified.

FRONT BUMPER EXTENSION LENGTH

The front bumper shall be extended approximately 16.00 inches ahead of the cab.

FRONT BUMPER PAINT

The front bumper shall be painted the same as the lower cab color. The front bumper trim shall feature a black spray on bedliner coating.

FRONT BUMPER APRON

The 16.00 inch extended front bumper shall include an apron constructed of 0.19 inch thick embossed aluminum tread plate.

The apron shall be installed between the bumper and the front face of the cab affixed using stainless steel bolts attaching the apron to the top bumper flange.

FRONT BUMPER DISCHARGE

The chassis shall include frame mounted 2.00 inch diameter plumbed pipe intended for use as a discharge trash line. The discharge pipe shall be routed from the left hand front splay rail area behind the bumper to the area rear of the front axle, ahead of the battery box.

The discharge shall pipe shall be a, 2.00 inch stainless steel schedule 10 tube. The discharge shall include a Victaulic groove for connecting to the pump and discharge hose plumbing on each end of the tube.

The apparatus manufacturer shall plumb the discharge pipe to the pump and shall provide all valves as required.

FRONT BUMPER COMPARTMENT CENTER

The front bumper shall include a compartment in the bumper apron located in the center between the frame rails which may be used as a hose well. The compartment shall be constructed of 0.13 inch 5052-H32 grade aluminum and shall include drain holes in the bottom corners to allow excess moisture to escape. The compartment shall include a notched cover constructed of 0.19 inch thick bright embossed aluminum tread plate. The notch shall be located in the left front portion of the cover and shall be 4.00 inches in length with a 2.00 inches wide radius.

FRONT BUMPER COMPARTMENT COVER HARDWARE

The front bumper compartment cover(s) shall include gas cylinder stays which shall hold the cover open. Each cover shall be held in the closed position via a D-ring style latch.

MECHANICAL SIREN

The front bumper shall include an electro mechanical Federal Q2B™ siren, which shall be streamlined, chrome-plated and shall produce 123 decibels of sound at 10.00 feet. The Q2B™ siren produces a distinctive warning sound that is recognizable at long distances. A unique clutch design provides a longer coast down sound while reducing the amp draw to 100 amps. The siren shall measure 10.50 inches wide X 10.00 inches high X 14.00 inches deep. The siren shall include mounting hardware designed to recess or flush mount.

MECHANICAL SIREN LOCATION

The siren shall be recess mounted on the officer side of the front fascia of the bumper, in the outboard position.

MECHANICAL SIREN ACCESSORIES

The front of the siren shall include (2) stainless steel flat bars approximately 1.00 inch wide by 19.00 inches long. Each bar shall be placed vertically on the right and left side of the siren face wrapping around towards the back of the siren into the bumper extension offering protection to the Q2B siren.

AIR HORN

The front bumper shall include two (2) Hadley brand E-Tone air horns which shall measure 21.00 inches long with a 6.00 inch round flare. The air horns shall be trumpet style with a chrome finish on the exterior and a painted finish deep inside the trumpet.

AIR HORN LOCATION

The air horns shall be recess mounted in the front bumper face, one (1) on the right side of the bumper in the inboard position relative to the right hand frame rail and one (1) on the left side of the bumper in the inboard position relative to the left hand frame rail.

AIR HORN RESERVOIR

One (1) air reservoir, with a 1200 cubic inch capacity, shall be installed on the chassis to act as a supply tank for operating air horns. The reservoir shall be isolated with a 90 PSI pressure protection valve on the reservoir supply side to prevent depletion of the air to the air brake system.

ELECTRONIC SIREN SPEAKER

There shall be one (1) Federal Signal Inc. Dynamax® model ES100C, 100 watt speaker provided. The speaker shall measure 5.90 inches tall X 5.50 inches wide X 2.30 inches deep. The speaker shall include a Federal Signal "Electric F" style grille which shall measure 6.61 inches tall X 6.78 inches wide.

ELECTRONIC SIREN SPEAKER LOCATION

The electronic siren speaker shall be located on the front bumper face on the left side outboard of the frame rail in the far outboard position.

FRONT BUMPER TOW EYES

The bumper shall include two (2) painted tow eyes shall be installed through the front bumper. The tow eyes shall be fabricated from 0.75 inch thick #1020 ASTM-36 hot rolled steel. The inside diameter of the tow eye shall be 2.00 inch and have inside/outside chamfered edges. The tow eyes shall be painted to match the frame components.

CAB TILT SYSTEM

The entire cab shall be capable of tilting approximately 45-degrees to allow for easy maintenance of the engine and transmission. The cab tilt pump assembly shall be located on the right side of the chassis above the battery box.

The electric-over-hydraulic lift system shall include an ignition interlock and red cab lock down indicator lamp on the tilt control which shall illuminate when holding the "Down" button to indicate safe road operation.

It shall be necessary to activate the master battery switch and set the parking brake in order to tilt the cab. As a third precaution the ignition switch must be turned off to complete the cab tilt interlock safety circuit.

Two (2) spring-loaded hydraulic hold down hooks located outboard of the frame shall be installed to hold the cab securely to the frame. Once the hold-down hooks are set in place, it shall take the application of pressure from the hydraulic cab tilt lift pump to release the hooks.

Two (2) cab tilt cylinders shall be provided with velocity fuses in each cylinder port. The cab tilt pivots shall be 1.90 inch ball and be anchored to frame brackets with 1.25 inch diameter studs.

A steel safety channel assembly, painted safety yellow shall be installed on the right side cab lift cylinder to prevent accidental cab lowering. The safety channel assembly shall fall over the lift cylinder when the cab is in the fully tilted position. A cable release system shall also be provided to retract the safety channel assembly from the lift cylinder to allow the lowering of the cab.

CAB TILT AUXILIARY PUMP

A manual cab tilt pump module shall be attached to the cab tilt pump housing/power distribution box.

CAB TILT LIMIT SWITCH

A cab tilt limit switch shall be installed. The switch will effectively limit the travel of the cab when being tilted. The limit adjustment of the switch shall be preset by the chassis manufacturer to prevent damage to the cab or any bumper mounted option mounted in the cab tilt arc. Further adjustment to the limit by the apparatus manufacturer shall be available to accommodate additional equipment.

CAB TILT CONTROL RECEPTACLE

The cab tilt control cable shall include a receptacle which shall be temporarily located on the right hand chassis rail rear of the cab to provide a place to plug in the cab tilt remote control pendant. The tilt pump shall include 8.00 feet of cable with a six (6) pin Deutsch receptacle with a cap.

The remote control pendant shall include 20.00 feet of cable with a mating Deutsch connector. The remote control pendant shall be shipped loose with the chassis.

CAB TILT LOCK DOWN INDICATOR

The cab dash shall include a message located within the dual air pressure gauge which shall alert the driver when the cab is unlocked and ajar. The alert message shall cease to be displayed when the cab is in the fully lowered position and the hold down hooks are secured and locked to the cab mounts.

In addition to the alert message an audible alarm shall sound when the cab is unlocked and ajar with the parking brake released.

GLASS FRONT DOOR

The front cab doors shall include a window which is 27.00 inches in width X 26.00 inches in height. These windows shall have the capability to roll down completely into the door housing. This shall be accomplished using electric actuation. The left and right front door windows shall be controlled using a switch on each respective side inner door panel. The driver's door shall include a switch for each powered door window in the cab.

There shall be an irregular shaped fixed window which shall measure 2.50 inches wide at the top, 8.00 inches wide at the bottom X 26.00 inches in height, more commonly known as "cozy glass" ahead of the front door roll down windows.

The windows shall be mounted within the frame of the front doors trimmed with a black anodized ring on the exterior.

GLASS TINT FRONT DOOR

The windows located in the left and right front doors shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

GLASS REAR DOOR RH

The rear right hand side crew door shall include a window which is 27.00 inches in width X 26.00 inches in height. The window shall be a powered type and shall be controlled by a switch on the door panel ledge and on the driver's control panel.

GLASS TINT REAR DOOR RIGHT HAND

The window located in the right hand side rear window shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

GLASS REAR DOOR LH

The rear left hand side crew door shall include a window which is 27.00 inches in width X 26.00 inches in height. The window shall be a powered type and shall be controlled by a switch on the door panel ledge and on the driver's control panel.

GLASS TINT REAR DOOR LEFT HAND

The window located in the left hand side rear door shall include a dark gray automotive tint which shall allow forty-five percent (45%) light transmittance. The dark tint shall aid in cab cooling and help protect passengers from radiant solar energy.

CLIMATE CONTROL DRAIN

The climate control system shall include a gravity drain for water management. The gravity drain shall remove condensation from the air conditioning system without additional mechanical assistance.

CLIMATE CONTROL ACTIVATION

The heating, defrosting and air conditioning controls shall be located on the vehicle display and control screen.

HVAC OVERHEAD COVER PAINT

The overhead HVAC cover shall be painted with a multi-tone silver gray texture finish.

A/C CONDENSER LOCATION

A roof mounted A/C condenser shall be installed centered on the cab forward of the raised roof against the slope rise.

A/C COMPRESSOR

The air-conditioning compressor shall be a belt driven, engine mounted compressor. The compressor shall be compatible with R134-a refrigerant.

The chassis manufacturer recommends that the overall climate system performance be based off third-party testing in accordance with the Society of Automotive Engineering standards as a complete system.

Individual component level ratings are not an accurate indicator of the performance capability of the completed system.
Refrigerant Compressor displacement: 19.1 cubic inches per revolution.

UNDER CAB INSULATION

The underside of the cab tunnel surrounding the engine shall be lined with multi-layer insulation, engineered for application inside diesel engine compartments.

The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations. As an additional benefit, the insulation shall assist in sustaining the desired temperature within the cab interior.

The engine tunnel insulation shall measure approximately 0.30 inch thick including a multi-layer foil faced glass cloth and polyester fiber layer. The foil surface acts as protection against heat, moisture and other contaminants. The insulation shall meet or exceed FMVSS 302 flammability test.

The insulation shall be cut precisely to fit each section and sealed for additional heat and sound deflection. The insulation shall be held in place by acrylic pressure sensitive adhesive. In addition, the insulation shall have a removable aluminum overlay installed to protect the insulation and assist in retaining the insulation tight against the engine tunnel surfaces.

The cab floor insulation shall cover the driver and officer floor areas as well as all crew floor areas and compartment floor areas if applicable.

INTERIOR TRIM FLOOR MAT

The floor of the cab shall be covered with a multi-layer mat consisting of 0.25 inch thick sound absorbing closed cell foam with a 0.06 inch thick non-slip vinyl surface with a pebble grain finish. The covering shall be held in place by a pressure sensitive adhesive.

The floor shall have an overlay of 3003-H22 aluminum tread plate which shall feature a bedliner spray on bedliner coating. The aluminum plate shall be held down with screws and shall feature a flange wrapping downward into each stepwell, eliminating the need for any additional trim where the cab floor and the step wells meet. All exposed seams shall be sealed with silicone caulk matching the color of the floor mat to reduce the chance of moisture and debris retention.

INTERIOR TRIM

The cab interior shall include trim on the front ceiling, rear crew ceiling, and the cab walls. It shall be easily removable to assist in maintenance. The trim shall be constructed of insulated vinyl over a hard board backing.

REAR WALL INTERIOR TRIM

The rear wall of the cab shall be trimmed with aluminum sheet metal coated with a customer specified interior paint or protective coating.

HEADER TRIM

The cab interior shall feature header trim over the driver and officer dash constructed of 5052-H32 Marine Grade, 0.13 inch thick aluminum.

TRIM CENTER DASH

The main center dash area shall be constructed of 5052-H32 Marine Grade, 0.13 inch thick aluminum plate. There shall be four (4) holes located on the top of the dash near each outer edge of the electrical access cover for ventilation. The center dash electrical access cover shall include a gas cylinder stay which shall hold the cover open during maintenance.

TRIM LH DASH

The left hand dash shall be constructed of 5052-H32 Marine Grade, 0.13 inch thick aluminum plate for a perfect fit around the instrument panel. For increased occupant protection the extreme duty left hand dash utilizes patent pending break away technology to reduce rigidity in the event of a frontal crash. The left hand dash shall offer lower vertical surface area to the left and right of the steering column to accommodate control panels.

TRIM RH DASH

The right hand dash shall be constructed of 5052-H32 Marine Grade, 0.13 of an inch thick aluminum plate and shall include a glove compartment with a hinged door and a Mobile Data Terminal (MDT) provision. The glove compartment size will measure 14.00 inches wide X 4.50 inches high X 5.88 inches deep. The MDT provision shall be provided above the glove compartment.

ENGINE TUNNEL TRIM

The cab engine tunnel shall be covered with a multi-layer mat consisting of 0.25 inch thick sound absorbing closed cell foam with a 0.06 inch thick non-slip vinyl surface with a pebble grain finish. The covering shall be held in place by a pressure sensitive adhesive.

The cab engine tunnel shall have an overlay of 5052-H32 aluminum plate which shall feature a spray on bedliner coating, colored to match the cab paint interior finish color scheme. The aluminum plate shall be held down with screws. All exposed seams shall be sealed with silicone caulk matching the color of the floor mat to reduce the chance of moisture and debris retention.

STEP TRIM KICKPLATE

The risers, forward walls, rearward walls of the upper steps shall feature a medium gray sprayon bedliner coating. The lower step area shall be painted to match the cab exterior paint.

UNDER CAB ACCESS DOOR

The cab shall include an access door in the left crew step riser constructed of aluminum tread plate and feature a spray on bedliner coating to match the cab interior paint color scheme with a push and turn latch. The under cab access door shall provide access to the diesel exhaust fluid fill.

INTERIOR DOOR TRIM

The interior trim on the doors of the cab shall consist of a two (2) piece panel constructed of SAE 304 stainless steel. The stainless steel shall have a polished finish.

DOOR TRIM SCUFF PLATE

The trim along the door shall include a stainless steel scuff plate along the door jamb to prevent the chipping of paint should the seat belt buckle come in contact with the door jamb.

DOOR TRIM CUSTOMER NAMEPLATE

The interior door trim on the front doors shall include a customer nameplate which states the vehicle was custom built for their department, city, township, or county.

CAB DOOR TRIM REFLECTIVE

The interior of each door shall include high visibility reflective tape. A white reflective tape shall be provided vertically along the outer rear edge of the door. The lowest portion of each door skin shall include solid white reflective tape. The tape shall measure 6.00 inches in height.

INTERIOR GRAB HANDLE "A" PILLAR

There shall be two (2) rubber covered 11.00 inch grab handles installed inside the cab, one on each “A” post at the left and right door openings. The left handle shall be located 7.88 inches above the bottom of the door window opening and the right handle shall be located 2.88 inches above the bottom of the door window opening. The handles shall assist personnel in entering and exiting the cab.

INTERIOR GRAB HANDLE FRONT DOOR

Each front door shall include one (1) ergonomically contoured 9.00 inch cast aluminum handle mounted horizontally on the interior door panels. The handles shall feature a textured black powder coat finish to assist personnel entering and exiting the cab.

INTERIOR GRAB HANDLE REAR DOOR

A black powder coated cast aluminum assist handle shall be provided on the inside of each rear crew door. A 30.00 inch long handle shall extend horizontally the width of the window just above the window sill. The handle shall assist personnel in exiting and entering the cab.

INTERIOR SOFT TRIM COLOR

The cab interior soft trim surfaces shall be gray in color.

INTERIOR TRIM SUN VISOR

The header shall include two (2) sun visors, one (1) on each side forward of the driver and officer seating positions above the windshield. The sun visors shall be constructed of impact resistant, transparent acrylic polycarbonate sun visors with a smoke gray tint.

The see thru visors are designed for maximum flexibility of positioning utilizing an arm with virtually unlimited adjustability with lateral travel of the tinted visor at the end of the arm which can be locked in place by a thumbscrew.

The visors are easily adjusted and can be placed into a chosen position with one hand. The sun visors will help protect vehicle occupants from solar glare without obscuring their vision.

INTERIOR FLOOR MAT COLOR

The cab interior floor mat shall be gray in color.

HEADER TRIM INTERIOR PAINT

The metal surfaces in the header area shall be coated with multi-tone silver gray texture finish.

TRIM CENTER DASH INTERIOR PAINT

The entire center dash shall be coated with multi-tone silver gray texture finish. Any accessory pods attached to the dash shall also be painted this color.

TRIM LH DASH INTERIOR PAINT

The left hand dash shall be painted with a multi-tone silver gray texture finish.

TRIM RIGHT HAND DASH INTERIOR PAINT

The right hand dash shall be painted with multi-tone silver gray texture finish.

REAR WALL INTERIOR PAINT

The rear wall of the cab shall be trimmed with aluminum sheet metal coated with a multi-tone silver gray texture finish.

FLOOR INTERIOR PAINT

The metal surfaces on the floor of the cab shall feature a medium gray spray on bedliner coating.

DASH PANEL GROUP

The main center dash area shall include three (3) aluminum removable panels located one (1) to the right of the driver position, one (1) in the center of the dash and one (1) to the left of the officer position. The panels shall be coated with a black texture finish. The center panel shall be within comfortable reach of both the driver and officer.

SWITCHES CENTER PANEL

The center dash panel shall include four (4) rocker switch positions in a single row configuration in the center panel.

A rocker switch with a blank legend installed directly above shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have backlighting provided.

SWITCHES LEFT PANEL

The left dash panel shall include three (3) switches. There shall be one (1) headlight switch over one (1) windshield wiper/washer control switch and one (1) instrument lamp dimmer switch on the left hand portion of the panel. All switches shall have backlighting provided.

SWITCHES RIGHT PANEL

The right dash panel shall include no rocker switches or legends.

SWITCHES OVERHEAD PANEL

There shall be two (2) overhead panels provided in the header trim forward of the driver and forward of the officer. The driver side panel shall include five (5) rocker switch positions in a single row configuration and the officer side panel shall include four (4) rocker switch positions in a single row configuration.

The driver side switch panel shall include the following switches and legends centered on the overhead panel from left to right:

- LEFT SCENE
- FRONT SCENE
- RIGHT SCENE
- BLANK
- SIREN BRAKE

The officer side switch panel shall include the following switches and legends centered on the overhead panel from left to right:

- LEFT SCENE
- FRONT SCENE
- RIGHT SCENE
- SIREN BRAKE

A rocker switch with a blank legend installed directly above shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have backlighting provided.

SEAT BELT WARNING

A Weldon seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide a visual warning indicator in the vehicle display and control screen(s).

The warning system shall activate when any seat is occupied with a minimum of 60 pounds, the corresponding seat belt remains unfastened, and the park brake is released. The warning system shall also activate when any seat is occupied, the corresponding seat belt was fastened in an incorrect sequence, and the park brake is released. Once activated, the visual indicators and applicable audible alarm shall remain active until all occupied seats have the seat belts fastened.

SEAT MATERIAL

The seats shall be covered with a 45.00 ounce vinyl material. This material shall be semi- resistant to UV rays and from being saturated or contaminated by fluids.

SEAT COLOR

All seats supplied with the chassis shall be gray in color. All seats shall include red seat belts.

SEAT DRIVER

The driver's seat shall be an H.O. Bostrom 500 Series Firefighter Sierra model seat with air suspension. The four-way seat shall feature a 3.00 inches vertical travel air suspension and manual fore and aft adjustment with 5.00 inches of travel. The suspension control shall be located on the seat below the left front corner of the bottom cushion. The seat shall also feature integral springs to isolate shock.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver

position within easy reach of the occupant. The ABTS feature shall also include the RiteHite™ shoulder adjustment feature to provide enhanced comfort and safety by allowing customized seat belt fit.

This model of seat shall have successfully completed the static load tests set forth by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208.

The materials used in construction of the seat shall also have successfully completed testing with regard to the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which dictates the allowable burning rate of materials in the occupant compartments of motor vehicles.

SEAT BACK DRIVER

The driver's seat shall include a standard seat back incorporating the all belts to seat feature (ABTS) as described above. The seat back shall recline up to 19-degrees.

SEAT MOUNTING DRIVER

The driver's seat shall be installed in an ergonomic position in relation to the cab dash.

OCCUPANT PROTECTION DRIVER

The driver's position shall be equipped with the IMMI 4Front and RollTek™ Systems which shall secure belted occupants and increase the survivable space within the cab. The 4Front and RollTek™ Systems shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, and rollover events.

The Driver's seating area protection shall include:

- Drivers airbag **DAB** - inflates a steering wheel airbag to protect the head and neck of the driver.
- Driver's knee airbag **DKAB** - inflating knee bolster airbags to protect the knees.
- Integrated roll sensor **IRS** - detects an imminent rollover, activates protective devices and records crash events.
- Integrated belt pretension **ICP -** device for air ride seats tightens the seat belt, securing driver in seat and positions driver for contact with seat integrated head cushion side roll airbag.
- Seat pull-down system **S4S -** device for air seats locks seat to lowest position, increases survivable space.

Inflatable Head Cushion seat integrated Side Roll Airbag **SRA** - protects driver's head/neck and shields driver from dangerous surfaces.

SEAT OFFICER

The officer's seat shall be an H.O. Bostrom 500 Series Sierra model seat with air suspension. The four-way seat shall feature a 3.00 inches vertical travel air suspension and manual fore and aft adjustment with 5.00 inches of travel. The suspension control shall be located on the seat below the left front corner of the bottom cushion. The seat shall also feature integral springs to isolate shock.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant. The ABTS feature shall also include the RiteHite™ shoulder adjustment feature to provide enhanced comfort and safety by allowing customized seat belt fit.

This model of seat shall have successfully completed the static load tests set forth by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208.

The materials used in construction of the seat shall also have successfully completed testing with regard to the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which dictates the allowable burning rate of materials in the occupant compartments of motor vehicles.

SEAT BACK OFFICER

The officer’s seat shall include a standard seat back incorporating the all belts to seat feature (ABTS). The seat back shall feature a contoured head rest.

SEAT MOUNTING OFFICER

The officer’s seat shall be installed in an ergonomic position in relation to the cab dash.

OCCUPANT PROTECTION OFFICER

The officer’s position shall be equipped with the IMMI 4Front and RollTek™ Systems which shall secure belted occupants and increase the survivable space within the cab. The 4Front and RollTek™ Systems shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, and rollover events.

The Officer’s seating area protection shall include:

- Officer’s knee airbag **OKAB** - inflating knee bolster airbags to protect the knees.

- Integrated roll sensor **IRS** - detects an imminent rollover, activates protective devices and records crash events.

- Integrated belt pretension **IBP -** device for mechanical and/or electrical seats tightens the seat belt, securing officer in seat and positioning officer for contact with seat integrated head cushion side roll airbag.

- Inflatable head cushion seat integrated side roll airbag **SRA** - protects officer's head/neck and shields officer from dangerous surfaces.

SEAT BELT ORIENTATION CREW

The crew position seat belts shall follow the standard orientation which extends from the outboard shoulder extending to the inboard hip.

SEAT FORWARD FACING OUTER LOCATION

The crew area shall include two (2) forward facing outboard seats, which include one (1) located next to the outer wall of the cab on the left side of the cab and one (1) located next to the outer wall on the right side of the cab.

The primary position designation per NFPA 1900 2024 edition, shall only declare the positioning in the cab offers a minimum width of 27.60 inches of shoulder clearance without overlap of any other primary seating position and a minimum of 10.80 inches each side of seat center line. Clear width may be offset from center of seat cushion by up to 3.00 inches. It shall also offer a minimum of 22.00 inches of shoulder width clearance without any overlap of any position.

SEAT CREW FORWARD FACING OUTER

The crew area shall include a seat in the forward facing outer position which shall be a H.O. Bostrom 500 Series Firefighter model seat. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position. The seat and cushion shall be hinged and compact in design for additional room. The seat shall include a "Fold and Hold" feature so that the cushion shall remain in the seated position and simply touched to flip up.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant. The ABTS feature shall also include the RiteHite™ shoulder adjustment feature to provide enhanced comfort and safety by allowing customized seat belt fit.

The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of

motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

SEAT BACK FORWARD FACING OUTER

The seat back(s) in the forward facing outboard position shall be comprised of a standard seat back. The seat back shall feature an all belts to seat (ABTS) style safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The seat back shall feature an integrated head rest.

SEAT MOUNTING FORWARD FACING OUTER

The forward facing outer seat shall be mounted in the furthest outboard position facing the front of the cab.

OCCUPANT PROTECTION FFO

The forward-facing outer seat position(s) shall be equipped with the RollTek™ System which shall secure belted occupants and increase the survivable space within the cab. The RollTek™ System shall deploy integrated systems to protect against injuries in rollover events.

The forward-facing outer seat position(s) protection shall include:

- Integrated roll sensor **IRS** - detects an imminent rollover, activates protective devices and records crash events.

- Integrated belt pretension **IBP -** device for flip-up (non-theatre) and fixed mechanical seats tightens the seat belt, securing occupant in seat and positioning occupant for contact with seat integrated head cushion side roll airbag.

Inflatable head cushion seat integrated side roll airbag **SRA** - protects occupant's head/neck and shields occupant from dangerous surfaces.

SEAT FORWARD FACING CENTER LOCATION

The crew area shall include one (1) forward facing center crew seat located directly behind the engine tunnel in the center of the cab.

SEAT CREW FORWARD FACING CENTER

The forward facing center seat shall be a H.O. Bostrom 500 Series Firefighter model seat. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position. The seat and cushion shall be hinged and compact in design for additional room. The seat shall include a "Fold and Hold" feature so that the cushion shall remain in the seated position and simply touched to flip up.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant. The ABTS feature shall also include the RiteHite™ shoulder adjustment feature to provide enhanced comfort and safety by allowing customized seat belt fit.

The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

SEAT BACK FORWARD FACING CENTER

The seat in the forward facing center position shall include a standard seat back. The seat back shall feature an all belts to seat (ABTS) style safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant. The seat back shall feature a contoured, adjustable head rest.

OCCUPANT PROTECTION FFC

The forward facing center seat positions shall be equipped with the RollTek™ rollover occupant protection system which shall secure occupants, increase the survivable space within the cab and protect against head/neck injuries in the event of a rollover accident.

The system shall function using a microprocessor-controlled, solid-state sensing device which, when the system detects a side roll shall provide instantaneous occupant protection (less than 0.3 seconds from trigger to total deployment) by automatically initiating the following sequence:

1. The seat belt shall tighten around the occupant.

System Components Shall Include:

Integrated Roll Sensor **IRS** - detects an imminent rollover, activates protective devices and records crash events.

Integrated Belt Pretension **IBP** with flip-up (non theatre) and fixed mechanical seats - tightens the seat belt around occupant, securing occupant in seat.

Integrated Gas Pretension **IGP** with flip-up theatre style seats - tightens the seat belt around occupant, securing occupant in seat.

SEAT FRAME FORWARD FACING

The forward facing crew area seating positions shall include a full width, integrated seat mounting surface which shall be the lower interior surface of the rear cab roof modification extension. The seat mounting area shall span the full width of the cab and the full depth of the cab roof modification extension. The seat mounting area shall be painted with the same color as the remaining interior of the cab.

SEAT MOUNTING FORWARD FACING CENTER

The forward facing center seats shall be installed facing the front of the cab.

CAB FRONT UNDERSEAT STORAGE ACCESS

The left and right under seat storage areas shall have a solid aluminum hinged door with non-locking latch.

SEAT COMPARTMENT DOOR FINISH

All underseat storage compartment access doors shall have a multi-tone silver gray texture finish.

WINDSHIELD WIPER SYSTEM

The cab shall include a triple arm linkage wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers; each shall be affixed to a radial arm. The wiper motor shall be activated by an intermittent wiper control located within easy reach of the driver's position.

ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR

The windshield washer fluid level shall be monitored electronically. When the washer fluid level becomes low the yellow "Check Message Center" indicator light on the instrument panel shall illuminate and the message center in the dual air pressure gauge shall display a "Check Washer Fluid Level" message.

CAB DOOR HARDWARE

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with a chrome plated finish.

The interior exit door handles shall be flush paddle type with a black finish, which are incorporated into the upper door panel.

All cab entry doors shall include locks which are keyed alike. The door locks shall be designed to prevent accidental lockout.

The exterior pull handles shall include a scuff plate behind the handle constructed of polished stainless steel to help protect the cab finish.

DOOR LOCKS

The cab entry doors shall include a Controller Area Network (CAN) based electronic door lock system which shall include two (2) external keypads, one (1) located on the left side next to the front grab handle and one (1) on the right side next to the front grab handle. There shall be one (1) red rocker switch provided on the inside of each front cab entry door to actuate the cab door locks. Each door lock may also be manually actuated from the inside of the cab by means of a red knob located on the paddle handle of the respective door. The electronic door lock system shall include four (4) key fobs for actuation with buttons for cab entry door locks and for compartment door locks.

When the doors are unlocked using the external keypad or the key fobs the interior dome lights shall illuminate and remain on for a period of twenty (20) seconds. The interior dome safety feature shall require the interior lighting power to be battery direct.

Wiring shall also be provided for up to four (4) exterior cab compartments and up to four (4) body compartments.

DOOR LOCK LH EMS COMPARTMENT

The left hand side EMS compartment shall feature a power door lock actuator.

DOOR LOCK RH EMS COMPARTMENT

The right hand side EMS compartment shall feature a power door lock actuator.

POWER DOOR LOCK COMPARTMENT ACTIVATION

The power door lock feature shall include activation for exterior compartment door locks through the key fob, keypads and through a virtual switch on the vehicle display and control screen.

GRAB HANDLES

The cab shall include one (1) 18.00 inch three-piece knurled aluminum, anti-slip exterior assist handle, installed behind each cab door. The assist handle shall be made of extruded aluminum with a knurled finish to enable non-slip assistance with a gloved hand.

REARVIEW MIRRORS

Retrac Aerodynamic West Coast style dual vision mirror heads model 613315 shall be provided and installed each of the front cab doors.

The mirrors shall be mounted via 1.00 inch diameter tubular stainless steel arms to provide a rigid mounting to reduce vibration.

The mirrors shall measure 8.00 inches wide X 19.00 inches high and shall include an integral convex mirror in the mirror head below the flat glass to provide wider field of vision. The flat and convex mirrors shall be motorized with remote horizontal and vertical adjustment. The control switches shall be mounted within easy reach of the driver. The flat and convex mirrors shall be heated for defrosting in severe cold weather conditions.

The mirror backs shall be constructed of vacuum formed chrome plated ABS plastic housings that are corrosion resistant and shall include an amber marker light. The mirrors shall be manufactured with the finest quality non-glare glass.

REARVIEW MIRROR HEAT SWITCH

The heat for the rearview mirrors shall be controlled through a virtual button on the vehicle display and control screen.

CAB FENDER

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. Fender shall consist of an inner liner 16.00 inches wide made of ABS composite and an outer fenderette 3.50 inches wide made of SAE 304 polished stainless steel.

MUD FLAPS FRONT

The front wheel wells shall have mud flaps installed on them.

CAB EXTERIOR FRONT & SIDE EMBLEMS

The cab shall include three (3) Spartan emblems. There shall be one (1) installed on the front air intake grille and two (2) for the exterior sides of the cab shipped loose with the chassis for installation by the body manufacturer.

CAB EXTERIOR MODEL NAMEPLATE

The cab shall include “Metro Star” nameplates on the front driver and officer side doors.

IGNITION

A master battery system with a keyless start ignition system shall be provided. There shall be a three-position rocker switch with off, battery, and ignition positions as well as a stainless-steel etched engine start push-button. The engine start button shall include an illuminated LED halo ring. Both switches shall be mounted to the left of the steering wheel on the dash.

The engine start switch shall only operate when the master battery and ignition switch is in the “ignition” position.

BATTERY TRAY

The batteries shall be installed within two (2) steel battery trays located on the left side and right side of the chassis, securely bolted to the frame rails. The battery trays shall be coated with the same material as the frame.

The battery trays shall include drain holes in the bottom for sufficient drainage of water. A durable, non-conducting, interlocking mat made by Dri-Dek shall be installed in the bottom of the trays to allow for air flow and help prevent moisture build up.

BATTERY CABLE

The starting system shall include cables which shall be protected by 275 degree F. minimum high temperature flame retardant loom, sealed at the ends with heat shrink and sealant.

BATTERY JUMPER STUD

The starting system shall include battery jumper studs. These studs shall be located in the forward most portion of the driver's side lower step, 8.00 inches apart. The studs shall allow the vehicle to be jump started, charged, or the cab to be raised in an emergency in the event of battery failure.

ALTERNATOR

The charging system shall include a 360 amp Niehoff 12 volt alternator. The alternator shall include an ignition excited external regulator.

STARTER MOTOR

The single start electrical system shall include a Delco brand starter motor.

BATTERY CONDITIONER

A Kussmaul Auto Charge Chief 4012 battery conditioner shall be supplied. The battery conditioner shall provide a circuit protected 40-amp output for the chassis batteries and a 20-amp output circuit for accessory loads. The conditioner shall also include a battery temperature sensor.

BATTERY CONDITIONER LOCATION

The battery conditioner shall be mounted in the cab on top of the left-hand mid EMS compartment.

BATTERY CONDITIONER DISPLAY LOCATION

The battery conditioner display shall be integrated into the electrical inlet and located via the electrical inlet location 5209 subcategory.

AUXILIARY AIR COMPRESSOR

A Blue Sea model 7920 12V air compressor shall be supplied. The air compressor shall be installed behind the officer's seat. The air compressor shall be plumbed to the air brake system to maintain air pressure.

ELECTRICAL INLET LOCATION

An electrical inlet shall be installed on the left hand side of the cab ahead of the front door.

ELECTRICAL INLET

A Kussmaul 20 amp super auto-eject electrical receptacle shall be supplied. It shall automatically eject the plug when the starter button is depressed.

A single item or an addition of multiple items must not exceed the rating of the electric inlet that it's connected to.

Amp Draw Reference List:

Kussmaul 40 LPC Charger - 5 Amps
Kussmaul Chief 4012 Charger – 5.7 Amps
Kussmaul 80 LPC Charger - 13 Amps
Kussmaul Chief 6012 Charger - 9 Amps
Blue Sea P12 7532 - 7.5 Amps
Iota DLS-45/IQ4 - 11 Amps
1000W Engine Heater - 8.33 Amps
1500W Engine Heater - 12.5 Amps
120V Air Compressor - 4.2 Amps
120V Dometic HVAC - 15 Amps

ELECTRICAL INLET CONNECTION

The electrical inlet shall be connected to the battery conditioner.

ELECTRICAL INLET COLOR

The electrical inlet connection shall include a red cover.

HEADLIGHTS

Two (2) headlamp and combination side marker/turn lamp modules shall be part of the front cab fascia. Each module shall include one (1) rectangular LED high/low beam headlamp. Each lamp shall include a heating system that de-ices the headlight.

HEADLIGHT LOCATION

The headlights shall be located on the front fascia of the cab directly above the front warning lights.

FRONT TURN SIGNALS

The front fascia shall include two (2) Whelen model M6 4.00 inch X 6.00 inch programmable LED amber turn signals which shall be installed above the headlights.

SIDE TURN/MARKER LIGHTS

The sides of the cab shall include two (2) Tecniq S170 LED side marker lights which shall be provided just behind the front cab radius corners. The lights shall be amber with chrome bezels.

MARKER AND ICC LIGHTS

In accordance with FMVSS, there shall be five (5) marker lamps on the front of the vehicle designating identification and clearance. There shall be five (5) face mounted lights integrated into the scene light.

HEADLIGHT AND MARKER LIGHT ACTIVATION

The headlights and marker lights shall be controlled through a rocker switch within easy reach of the driver. There shall be a dimmer switch within easy reach of the driver to adjust the brightness of the dash lights. The headlamps shall be equipped with the "Daytime Running" light feature, which shall illuminate the headlights when the ignition switch is in the "On" position and the parking brake is released.

INTERIOR OVERHEAD LIGHTS

The cab shall include a LED dome lamp located over each door. The lights shall include push switches on each lamp to activate both the clear and red portions of the light individually.

INTERIOR OVERHEAD LIGHTS ACTIVATION

The clear portion of each lamp shall be activated by opening the respective door and via the multiplex display.

LIGHTBAR PROVISION

There shall be one (1) light bar installed on the cab roof. The light bar shall be provided and installed by the chassis manufacturer. The light bar installation shall include mounting and wiring to a control switch on the cab dash.

CAB FRONT LIGHTBAR MODEL

The cab shall be provided with one (1) Whelen model F4N92 light bar. The light bar shall be 92.00 inches in length and feature twenty-two (22) customizable pods.

See the light bar layout for specific details.

LIGHTBAR SWITCH

The light bar shall be controlled through a virtual button on the vehicle display and control screen. There shall be an additional button located on the vehicle display and control screen to control the clear lights.

FRONT SCENE LIGHTS

The front of the cab shall include one (1) HiViz model FireTech FT-B-72-ML-W LED scene light installed on the brow of the cab. The light shall feature (5) five integrated marker lights.

The housing shall be powder coated white.

FRONT SCENE LIGHT LOCATION

There shall be one (1) scene light mounted center on the front brow of the cab.

FRONT SCENE LIGHTS ACTIVATION

The front scene lighting shall be activated by two (2) lighted momentary rocker switches located in the overhead switch panel. Either switch shall have the ability to activate the front scene lighting.

SIDE SCENE LIGHTS

The side of the cab shall include two (2) Firetech model FT-GESM Guardian Elite LED scene lights, one (1) each side which shall be surface mounted with a chrome bezel.

SIDE SCENE LIGHT LOCATION

The scene lighting located on the left and right sides of the cab shall be mounted rearward of the cab "B" pillar in the 10.00 inch raised roof portion of the cab between the front and rear crew doors.

SIDE SCENE ACTIVATION

The scene lights shall be activated by four (4) lighted momentary rocker switches located in the overhead switch panel(s), two (2) for each light. Each switch shall have the ability to activate its respective side scene light.

GROUND LIGHTS

Each door shall include a Tecniq T44 LED ground light mounted to the underside of the cab step below each door. The lights shall include a polycarbonate lens, a housing which is vibration welded and LEDs which shall be shock mounted for extended life.

GROUND LIGHTS

The ground lighting shall be activated when the parking brake is set, by the opening of the door on the respective cab side, and through a virtual button on the vehicle display and control screen.

LOWER CAB STEP LIGHTS

The middle step located at each door shall include a Tecniq T44 LED light which shall activate with the opening of the respective door. The lights shall include a polycarbonate lens, a housing which is vibration welded and LEDs which shall be shock mounted for extended life.

INTERMEDIATE STEP LIGHTS

The intermediate step well area at each door shall include a TecNiq D06 LED light within a chrome housing. The egress step lights shall provide visibility to the step well area for the first step exiting the vehicle. The egress step lights shall activate with entry step lighting.

CAB SPOTLIGHTS

The cab shall include two (2) Golight model 20204GT white remote controlled LED spotlights. Each spotlight shall be mounted on a raised bracket on the flat surface of the cab roof as far rearward and outboard as possible. Each spotlight shall feature an LED lamp, capable of 370-degree rotation and 135-degree vertical adjustment. Each spotlight shall include a remote control installed on the switch panel.

ENGINE COMPARTMENT LIGHT

There shall be a LED NFPA compliant light mounted under the engine tunnel for area work lighting on the engine. The light shall activate automatically when the cab is tilted.

DO NOT MOVE APPARATUS LIGHT

The front headliner of the cab shall include a flashing red TecNiq K50 LED light clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible alarm shall be included which shall sound while the light is activated.

The flashing red light shall be located centered left to right for greatest visibility.

The light and alarm shall be interlocked for activation when either a cab door is not firmly closed, or an apparatus compartment door is not closed, and the parking brake is released.

MASTER WARNING SWITCH

A master switch shall be included, as a virtual button on the Vista display and control screen which shall be labeled “E Master” for identification. The button shall feature control over all devices wired through it. Any warning device switches left in the “ON” position when the master switch is activated shall automatically power up.

HEADLIGHT FLASHER

An alternating high beam headlight flashing system shall be installed into the high beam headlight circuit which shall allow the high beams to flash alternately from left to right.

Deliberate operator selection of high beams will override the flashing function until low beams are again selected. Per NFPA, these clear flashing lights will also be disabled “On Scene” when the park brake is applied.

HEADLIGHT FLASHER SWITCH

The flashing headlights shall be activated through a virtual button on the Vista display and control screen.

INBOARD FRONT WARNING LIGHTS

The cab front fascia shall include two (2) Whelen 600 Series Super LED Rota-Beam front warning lights in the left and right inboard positions. The lights shall be mounted to the front fascia of the cab within a chrome bezel.

INBOARD FRONT WARNING LIGHTS COLOR

The warning lights mounted on the cab front fascia in the inboard positions shall be red.

OUTBOARD FRONT WARNING LIGHTS

The cab front fascia shall include two (2) Whelen M6 Super LED front warning lights in the left and right outboard positions. The lights shall feature multiple flash patterns including steady burn for solid colors and multiple flash patterns for split colors. The lights shall be mounted to the front fascia of the cab within a chrome bezel.

OUTBOARD FRONT WARNING LIGHTS COLOR

The warning lights mounted on the cab front fascia in the outboard position shall be red.

FRONT WARNING SWITCH

The front warning lights shall be controlled through a virtual control on the vehicle display and control screen. This switch shall be clearly labeled for identification.

INTERSECTION WARNING LIGHTS

The chassis shall include two (2) Whelen M6 series Super LED intersection warning lights, one (1) each side. The lights shall feature multiple flash patterns including steady burn.

INTERSECTION WARNING LIGHTS COLOR

The intersection lights shall be red.

INTERSECTION WARNING LIGHTS LOCATION

The intersection lights shall be mounted on the side of the bumper in the rearward position.

SIDE WARNING LIGHTS

The cab sides shall include two (2) Whelen M6 Super LED warning lights, one (1) on each side. The lights shall feature multiple flash patterns including steady burn for solid colors and multiple flash patterns for split colors. The lights shall be mounted to the sides of the cab within a chrome bezel.

SIDE WARNING LIGHTS COLOR

The warning lights located on the side of the cab shall be red.

SIDE WARNING LIGHTS LOCATION

The warning lights on the side of the cab shall be mounted behind the rear crew door in the lowest available position.

SIDE AND INTERSECTION WARNING SWITCH

The side warning lights shall be controlled through a virtual button on the vehicle display and control screen. This button shall be clearly labeled for identification.

TANK LEVEL LIGHTS

There shall be two (2) Whelen Strip-Light Plus XL tank lights surface mounted within a chrome bezel.

The light strips shall feature four (4) colors of LED lights to indicate the fluid level of a tank. The lights shall change in color to indicate the water level of the tank in ¼ tank increments, the colors shall change from green indicating a full tank to blue, amber, and red as the tank level drops.

TANK LEVEL LIGHTS ACTIVATION

The tank level lights shall be pre-wired and coiled at rear of the cab for connection to the apparatus by the body builder.

TANK LEVEL LIGHTS LOCATION

There shall be water level lights mounted on each side of the cab, behind the rear cab doors.

REAR WARNING LIGHTS

The cab shall be prewired and contain a cutout for a Whelen TACTL5 Traffic Advisor control head to be installed by the body builder. The prewire shall be coiled under the center dash panel.

Wiring provisions shall be provided routed to the rear of the frame for OEM installation of up to eight (8) individual traffic advisor warning lights rated at no more than one (1) amp each.

The power to the control head shall be ignition switched and activation dependent upon the state of the controllers switched position upon ignition.

SIREN CONTROL HEAD

A Code 3 V-Con model 3692 electronic siren control head shall be provided and recess mounted in the in the center switch panel in the lower left section of the panel. The siren shall feature 200-watt output, wail, yelp, hi-lo, air horn, radio broadcast, public address, a hard wired noise cancelling microphone, park kill, instant "ON", and adjacent backlighting.

STEERING WHEEL HORN BUTTON SELECTOR SWITCH

A virtual button on the Vista display and control screen shall be provided to allow control of either the electric horn or the air horn from the steering wheel horn button.

AUDIBLE WARNING LH FOOT SWITCH

A foot switch wired to actuate the mechanical siren(s) shall be supplied for installation in the front section of the cab for driver actuation.

MECHANICAL SIREN FOOT SWITCH LH

The mechanical siren foot switch shall be a Linemaster model 491-S.

MECHANICAL SIREN FOOT SWITCH LH LOCATION

The mechanical siren foot switch shall be located on the left hand side accessible to the driver between the steering column and the door.

MECHANICAL SIREN FOOT SWITCH LH POSITION

The mechanical siren foot switch shall be positioned outboard of any other foot switch, if applicable.

AUDIBLE WARNING LH FOOT SWITCH BRACKET

A 30.00 degree angled foot switch bracket, wide enough to accommodate (2) foot switches, shall be installed outboard of the steering column for specified driver accessible foot switch activations.

AUDIBLE WARNING RH FOOT SWITCH

Two (2) foot actuated switches shall be supplied for installation in the front section of the cab for officer actuation. One (1) switch shall be wired to actuate the air horn(s) and one (1) switch the mechanical siren(s).

AIR HORN FOOT SWITCH RH

The air horn foot switch shall be a Linemaster model 491-S.

AIR HORN FOOT SWITCH RH LOCATION

The air horn foot switch shall be temporarily tied up with a coiled wire drop at the firewall inboard for installation by the customer on the right hand side accessible to the officer.

MECHANICAL SIREN FOOT SWITCH RH

The mechanical siren foot switch shall be a Linemaster model 491-S.

MECHANICAL SIREN FOOT SWITCH RH LOCATION

The mechanical siren foot switch shall be temporarily tied up with a coiled wire drop at the firewall inboard for installation by the customer on the right hand side accessible to the officer.

AUDIBLE WARNING RH FOOT SWITCH BRACKET

An individual 30.00 degree angled bracket shall be shipped loose with the chassis for installation of each officer accessible foot switch by the customer.

MECHANICAL SIREN BRAKE/AUXILIARY ACTIVATION

Two (2) red momentary siren brake rocker switches shall be provided in the overhead switch panel.

MECHANICAL SIREN INTERLOCK

The siren shall only be active when master warning switch is on to prevent accidental engagement.

BACK-UP ALARM

A Preco-Matic model 1040 backup alarm shall be installed at the rear of the chassis with an output level of 107 dB. The alarm shall automatically activate when the transmission is placed in reverse.

INSTRUMENTATION

An ergonomically designed instrument panel shall be provided. Each gauge shall be backlit with LED lamps. Stepper motor movements shall drive all gauges. The instrumentation system shall be multiplexed and shall receive ABS, engine, and transmission information over the J1939 data bus to reduce redundant sensors and wiring.

A twenty eight (28) icon lightbar message center with integral LCD odometer/trip odometer shall be included. The odometer shall display up to 999,999.9 miles. The trip odometer shall display 9,999.9 miles. The LCD message center screen shall be capable of custom configuration by the users for displaying certain vehicle status and diagnostic functions.

The instrument panel shall contain the following gauges:

One (1) three-movement gauge displaying vehicle speed, fuel level, and Diesel Exhaust Fluid (DEF) level. The primary scale on the speedometer shall read from 0 to 100 MPH, and the secondary scale on the speedometer shall read from 0 to 160 KM/H. The scale on the fuel and DEF level gauges shall read from empty to full as a fraction of full tank capacity. Red indicator lights in the gauge and an audible alarm shall indicate low fuel or low DEF at $1/8^{th}$ tank level.

One (1) three-movement gauge displaying engine RPM, and primary and secondary air system pressures shall be included. The scale on the tachometer shall read from 0 to 3000 RPM. The scale on the air pressure gauges shall read from 0 to 150 pounds per square inch (PSI) with a red line zone indicating critical levels of air pressure. Red indicator lights in the gauge and an audible alarm shall indicate low air pressure.

One (1) four-movement gauge displaying engine oil pressure, coolant temperature, voltmeter, and transmission temperature shall be included. The scale on the engine oil pressure gauge shall read from 0 to 100 pounds PSI with a red line zone indicating critical levels of oil pressure. A red indicator light in the gauge and audible alarm shall indicate low engine oil pressure. The scale on the coolant temperature gauge shall read from 100 to 250 degrees Fahrenheit (°F) with a red line zone indicating critical coolant temperatures. A red indicator light in the gauge and audible alarm shall indicate high coolant temperature. The scale on the voltmeter shall read from 9 to 18 volts with a red line zone indicating critical levels of battery voltage. A red indicator light in the gauge and an audible alarm shall indicate high or low system voltage. The low voltage alarm shall indicate when the system voltage has

dropped below 11.8 volts for more than 120 seconds in accordance with the requirements of NFPA 1901. The scale on the transmission temperature gauge shall read from 100 to 300 degrees °F with a red line zone indicating critical temperatures. A red indicator light in the gauge and an audible alarm shall indicate a high transmission temperature.

The light bar portion of the message center shall include twenty-eight (28) LED backlit indicators. The lightbar shall be split with fourteen (14) indicators on each side of the LCD message screen. The lightbar shall contain the following indicators and produce the following audible alarms when supplied in conjunction with applicable configurations:

RED INDICATORS

Stop Engine - indicates critical engine fault
Air Filter Restricted - indicates excessive engine air intake restriction
Park Brake - indicates parking brake is set
Seat Belt - indicates a seat is occupied and corresponding seat belt remains unfastened
Low Coolant - indicates critically low engine coolant
Cab Tilt Lock - indicates the cab tilt system locks are not engaged.

AMBER INDICATORS

Malfunction Indicator Lamp (MIL) - indicates an engine emission control system fault
Check Engine - indicates engine fault
Check Transmission - indicates transmission fault
Anti-Lock Brake System (ABS) - indicates anti-lock brake system fault
High exhaust system temperature – indicates elevated exhaust temperatures
Water in Fuel - indicates presence of water in fuel filter
Wait to Start - indicates active engine air preheat cycle
Windshield Washer Fluid – indicates washer fluid is low
DPF restriction - indicates a restriction of the diesel particulate filter
Regen Inhibit-indicates regeneration of the DPF has been inhibited by the operator
Range Inhibit - indicates a transmission operation is prevented and requested shift request may not occur.
SRS - indicates a problem in the supplemental restraint system
Check Message - indicates a vehicle status or diagnostic message on the LCD display requiring attention.

GREEN INDICATORS

Left and Right turn signal indicators
ATC - indicates low wheel traction for automatic traction control equipped vehicles, also indicates mud/snow mode is active for ATC system
High Idle - indicates engine high idle is active.
Cruise Control - indicates cruise control is enabled
OK to Pump - indicates the pump is engaged and conditions have been met for pump operations
Pump Engaged - indicates the pump transmission is currently in pump gear
Auxiliary Brake - indicates secondary braking device is active

BLUE INDICATORS

High Beam indicator

AUDIBLE ALARMS
Air Filter Restriction
Cab Tilt Lock
Check Engine
Check Transmission
Open Door/Compartment
High Coolant Temperature
High or Low System Voltage
High Transmission Temperature
Low Air Pressure
Low Coolant Level
Low DEF Level
Low Engine Oil Pressure
Low Fuel
Seatbelt Indicator
Stop Engine
Water in Fuel
Extended Left/Right Turn Signal On
ABS System Fault

BACKLIGHTING COLOR

The instrumentation gauges and the switch panel legends shall be backlit using red LED backlighting.

CAMERA RIGHT HAND

One (1) Audiovox Voyager heavy duty rearview teardrop shaped chrome plated housing camera shall be mounted on the officer side of the cab below the windshield ahead of the front door at approximately the same level as the cab door handles. The camera display shall activate when the right side turn signal is activated.

CAMERA REAR

One (1) Audiovox Voyager heavy duty box shaped HD camera shall be shipped loose for OEM installation in the body to afford the driver a clear view to the rear of the vehicle.

The camera system shall include a one-way communication device that shall be an integral part of the rear camera for the use of voice commands directly to the driver. The rear camera display shall activate when the vehicle's transmission is placed in reverse.

CAMERA DISPLAY

The camera system shall be wired to a single vehicle display and control screen located on the driver's side dash. The camera system display can be activated through the vehicle display and control screen.

CAMERA SPEAKER

The rear camera shall be wired to speaker(s) in the cab and shall audible to the driver and officer. There shall be a virtual button provided on the Vista display and control panel to deactivate the speaker(s).

FIRE EXTINGUISHER

A 2.50 pound D.O.T approved fire extinguisher with BC rating shall be shipped loose with the cab.

ROAD SAFETY KIT

The cab and chassis shall include one (1) emergency road safety triangle kit.

DOOR KEYS

The cab and chassis shall include a total of four (4) door keys for the manual door locks.

WARRANTY

Purchaser shall receive a Custom Chassis Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0102. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

CHASSIS OPERATION MANUAL

There shall be two (2) digital copies of the chassis operation manual provided with the chassis. The digital data shall include a parts list specific to the chassis model.

ENGINE AND TRANSMISSION OPERATION MANUALS

The following manuals specific to the engine and transmission models ordered will be included with the chassis in the ship loose items:

(1) Hard copy of the Engine Operation and Maintenance manual with digital copy

(1) Digital copy of the Transmission Operator's manual

(1) Digital copy of the Engine Owner's manual

CAB/CHASSIS AS BUILT WIRING DIAGRAMS

The cab and chassis shall include two (2) digital copies of wiring schematics and option wiring diagrams.

SALES TERMS

The sale of the chassis shall be governed by the terms contained on the Sales Terms – Acceptance of Purchase Order document, a copy of which is attached to this option.

DRIVELINE LAYOUT CONFIRMATION

During the design phase of the chassis the Spartan Chassis driveline engineer shall submit the driveline layout to an OEM engineer to review the chassis design for any potential problems integrating the OEM body to the chassis. This shall also include review and approval of requested clear areas. The OEM engineer shall provide approval to the driveline engineer prior to driveline bills of materials being released.

Quote Summary with Notes

Customer: Rialto FD

Dealership: Fire Apparatus Solutions
1762 S Sycamore Ave

Rialto, CA 92376

Quote No: 0024338 **Quote Name:** Rialto FD
S.O.#: **Unit Type:**

Option ID	Description
General Info	**General Info Section**
911099	**Custom Pumper**
	Shop Note: *Chassis Change Order A, B, C, D, E, F, G, I Incorporated. Chassis CO H, J, K Incorporated*
911085	Destination, United States
901181	Safety Warning Labels Verbiage, English
911059	Bidding Prerequisites, United States
911069	Intent of Specifications, Pumper
901160	Engine Availability
911060	Standards Version, NFPA
911064	Inspection Certificate, NFPA Compliance
911070	Documentation, NFPA
980016	Owner's Manuals, Electronic, (1) USB Drive
911081	Misc. Equipment Allowance, 2,500 Lb.
901080	Tilt Table Test, Not Required, Chassis ESC
980012	Pump Certification, Independent Third Party
911066	Pump Certification Measure, U.S. GPM
911304	Apparatus Production Photos
911073	Pre-Construction Meeting, OEM Factory
911074	Final Inspection, OEM Factory, Required
900476	Overall Height, 128" (10'-8")
	Shop Note: *Try to keep the truck under 10' 8" but we can go to 10' 10" if need be*
900137	Overall Length, 382" (31'-10")
901074	Wheelbase, 178" (14'-10")
900653	Angle of Approach, 8 Degrees
	Shop Note: *Should be able to get 11 degrees*
900676	Angle of Departure, 10 Degrees
Chassis	**Chassis Section**
910014	**Custom Chassis, Spartan, Metro Star**
910019	Axles, Single

Option ID	Description
001360	OEM Chassis Preparations, Spartan Metro Star/Gladiator
UPO0048612	Exhaust Plymovent Device, Chassis Supplied, OEM Installed
001200	Mud Flaps, Front Chassis Provided, Rear OEM Provided
910021	Cab Electrical, Multiplex
007487	Extend Chassis Air Tank Drains, Outside of Body
001379	***OBSOLETE***Heat Exchanger, Chassis Supplied and Installed
100965	Relocate Cab Tilt Pendant, Special Location
	Shop Note: *Install in compartment R1 on front wall up high.*
910156	Front Bumper, Chassis Supplied and Installed
111567	Front Bumper Storage Well Flooring, Black Dri-Dek, (1) Storage Well
UPO0050266	Map Console, Custom, Gray Line-x, (Redlands CA)
	Shop Note: *See photo in P:drive. An approval drawing is to be provided to the customer. SFA needs to send LTI the final drawing so they can build the same compartment*
911113	Map Console Location, Engine Tunnel Mounted, Drop-In
911284	Battery Charger, Chassis Supplied and Installed
000366	Door Open Warning Circuit, Wired to Light in Cab
110020	Mounting Plate, On Engine Tunnel, Aluminum, Bedliner Coating, Gray
	Shop Note: *SFA needs to send LTI the final drawing so they can build the same plate*
UPO0050267	Shelves, Top of EMS Boxes, Line-X Aluminum
	Shop Note: *See photo in P:drive SFA needs to send LTI the final drawing so they can build the same shelves*
110045	Receptacle, 120V, 5-15R Household, Duplex, Wired to Shoreline
UPO0048872	Outlet Location, Center Shelf Between EMS Boxes
	Shop Note: *The outlet will be mounted to the lip of the shelf*
UPO0048615	Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel
910044	Outlet Location, Engine Tunnel, Driver's Side
UPO0048616	Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel
910045	Outlet Location, Engine Tunnel, Officer's Side
Water/Foam Tanks	**Water/Foam Tanks Section**
110103	Water Tank, UPF, 500 U.S. Gallons
910157	Water Tank Mounting, Pumpers
000350	Water Tank Drain, 1-1/2" Valve, Pumpers
910160	Water Tank Fill Tower, UPF, Black
010072	Water Tank Level Gauge, FRC Tankvision Pro 300 (WLA300-A00), Pump Operator's Panel, Slave in Cab (WLA205-A00)
	Shop Note: *Slave will be in the spare rocker switch slot in the center dash panel*
008171	Water Tank Level Display, Chassis Supplied 4-Light, Cab Sides, OEM Supplied and Installed FRC Driver

Option ID	Description
004096	Water Tank Overflow, UPF, 6", Pumpers w/o EHL
UPO0050480	Cover, Above Tank Towers, Tread Plate
	Shop Note: *The cover will be installed rearward of the dunnage area enclosing the deckgun. Tank towers will be under the cover*
000251	**Foam Cell, UPF, 20 U.S. Gallon**
	Shop Note: *Foam tank drain to have a 1" FNST x 1" Female Pipe Thread. The hose and fitting will terminate under the pumphouse.*
910172	Foam Cell Type, Class A
910169	Foam Cell Fill Tower, UPF, Black
003110	Foam Cell Level Gauge, FRC Tankvision Pro 300, WLA360-A00, Class A Foam
010052	Direct Tank Fill, 2-1/2", Officer's Side Rear, Akron 8825 Valve, TSC Handle, FNH Swivel
010060	Direct Tank Fill Fittings, Plug with Chain 2-1/2" NH (HPC3008AC), South Park, Chrome
Hose Bed	**Hose Bed Section**
110129	***OBSOLETE***Hose Bed, Aluminum, Standard, Abraded Finish, (2) 9" On-Scene Night Axe Lights
910379	Hose Load, Double-Jacket Hose, 200' of 1-3/4"
	Shop Note: *These are (2) 100' 1 3/4" Hi Rise Packs*
910381	Hose Load, Double-Jacket Hose, 200' of 2-1/2"
	Shop Note: *Single stack*
910419	Hose Load, Double-Jacket Hose, 1000' of 2-1/2"
	Shop Note: *triple stack*
910421	Hose Load, Double-Jacket Hose, 1000' of 4"
	Shop Note: *triple stack*
009340	Hose Bed Doors, Tread Plate, Power Operated, Independent, On-Scene Night Axe 36" LED Lighting (2)
	Shop Note: *Use cast products switch box for switches*
100004	Hose Bed Rear Restraint, Vinyl, Top C-Rail, Bottom Footman Loop / J-Hook, Black
009343	Hose Bed Dividers (3), 1/4" Alum., Adjustable, Abraded
901233	NO Hose Bed Loading Lights
Body / Pump Module	**Body / Pump Module**
002630	**Body, 100" Wide, Custom Pumper, Single-Axle, Aluminum, 1/8"**
121763	Side Compartment Doors, Roll-Up Doors, ROM, Painted Doors and Trim
120861	Side Compartment Doors, Roll-Up Doors, ROM, Painted Doors and Trim (6)
UPOxxxxxxx	Compartment Door Handles, Roll-up Doors, All Locking, Offset Lock (5) Power locking R3 compartment

Option ID	Description
UPO0049501	Rear Compartment Door, Double, Painted Lap Door, Manual Locking
901195	Inner Door Face, (1) Rear Door, Painted Main Body Color
121079	Compartment Lighting, On-Scene, Access Series LED (14)
000934	Compartment Finish, Bedliner Coating, Gray
000474	Air Release and Drain Holes, All Compartments
000440	Sill Protectors, Anodized Aluminum Side Lap Doors, SST Rear Lap Door Compartments
	Shop Note: *Roll up door has painted sill*
900966	Fuel Fill, Included with Triangle Air Bottle Compartment, Driver's Side
901151	Wheel Well Storage Design, Single Axle, Standard
120709	**Driver's (Left) Body Style, Single Axle, L1 Full, L2 Upper, L3 Full**
L1	**L1 Components**
Height	Height - 58"
Width	Width - 41"
Upper Depth	Upper Depth - 26"
Lower Depth	Lower Depth - 26"
Divide Height	Intermediate Divide Height - "
UPO0038502	Painted ROM Roll-Up Door
002745	Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating
	Shop Note: *Behind Vertical Divide*
002500	Tray (1), Adjustable-Height Roll Out, Austin Hardware, 300#, 100% Extension, Bedliner Coating, With Front Drawer Release
	Shop Note: *To rear of vertical divide*
120785	Compartment Struts, Vertical, Welded Aluminum
000471	Vertical Partition, Bolt-In, Full Height
	Shop Note: *To the rear of the pump controls*
Cmpt. Layout	
L2	**L2 Components**
Height	Height - 31"
Width	Width - 62"
Upper Depth	Upper Depth - 25"
Lower Depth	Lower Depth - 25"
Divide Height	Intermediate Divide Height - "
UPO0048622	Lap Door Hinge, Double Vertically Hinged
	Shop Note: *D-rings will be in a low position for easier reach. Do not use a chain for the secondary door. Use secondary door latch*
002745	Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating
	Shop Note: *locate to rear of partition*
120785	Compartment Struts, Vertical, Welded Aluminum
	Shop Note: *located on the partition and the rear sidewall of the compartment*

Option ID	Description
006176	Partition, Vertical, Bolt-In, Standard Height Compartment *Shop Note:* *Partition to be installed 24" from the usable front door opening*
Cmpt. Layout	
L3	**L3 Components**
Height	Height - 63"
Width	Width - 46"
Upper Depth	Upper Depth - 25"
Lower Depth	Lower Depth - 25"
Divide Height	Intermediate Divide Height - "
002745	Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating
002749	Shelf (1), Permanent, Aluminum, Full Depth, Matching Compartment Finish *Shop Note:* *The fixed shelf shall be installed 26" from the pan of the roll out tray to the bottom of the fixed shelf*
002502	Tray (1), Floor-Mounted Roll Out, Austin Hardware, 300#, 100% Extension, Bedliner Coating, With Front Drawer Release
120785	Compartment Struts, Vertical, Welded Aluminum *Shop Note:* *Struts installed on back side of vertical partition and rear side wall of L3 above the fixed shelf*
006176	Partition, Vertical, Bolt-In, Standard Height Compartment *Shop Note:* *The partition shall be 15" from the front door opening to the partition. Partition to be installed on the fixed shelf. Partition to be designed to as tall as practical*
Cmpt. Layout	
009390	WL1, Air Bottle Compartment, OEM Polished SS Door, Triple (Triangle) *Shop Note:* *Utilize the round type pull latches*
009413	WL3, Air Bottle Compartment with Fuel Fill, OEM Polished SS Door, Double (Triangle) *Shop Note:* *Utilize the round type pull latches*
120727	**Officer's (Right) Body Style, Single Axle, R1 Full, R2 Upper, R3 Full**
R1	**R1 Components**
Height	Height - 63"
Width	Width - 44"
Upper Depth	Upper Depth - 14"
Lower Depth	Lower Depth - 25"
Divide Height	Intermediate Divide Height - 27"
002748	Shelf (1), Permanent, Aluminum, Shallow Depth, Matching Compartment Finish *Shop Note:* *Installed at intermediate divide height*
120785	Compartment Struts, Vertical, Welded Aluminum
006176	Partition, Vertical, Bolt-In, Standard Height Compartment

Option ID	Description
	Shop Note: *Center in opening below the fixed shelf*
Cmpt. Layout	
R2	**R2 Components**
Height	Height - 31"
Width	Width - 62"
Upper Depth	Upper Depth - 14"
Lower Depth	Lower Depth - 14"
Divide Height	Intermediate Divide Height - "
UPO0048623	Lap Door Hinge, Double Vertically Hinged
	Shop Note: *D-rings will be in a low position for easier reach. Do not use a chain for the secondary door. Use secondary door latch*
002743	Shelf (1), Adjustable, Aluminum, Shallow Depth (2 Struts), Bedliner Coating
120785	Compartment Struts, Vertical, Welded Aluminum
Cmpt. Layout	
R3	**R3 Components**
Height	Height - 63"
Width	Width - 48"
Upper Depth	Upper Depth - 14"
Lower Depth	Lower Depth - 25"
Divide Height	Intermediate Divide Height - 27"
120304	Shelves (2), Adjustable, Aluminum, Shallow Depth (2 Struts), Bedliner Coating
120785	Compartment Struts, Vertical, Welded Aluminum
Cmpt. Layout	
UPO0049104	WR1, Extinguisher/Water Can Compartment, OEM Polished SS Door, Double, Triangle Door (Up to 9" Diameter)
	Shop Note: *Utilize the round type pull latches*
009451	WR3, Air Bottle Compartment, OEM Polished SS Door, Triple (Triangle) 8"
UPO0048874	Rear Body Style, Flat Back, Standard Hose Bed, One Compartment
T1	**T1 Components**
Height	Height - 25"
Width	Width - 42"
Depth	Depth - 26.5"
Cmpt. Layout	Compartment depth is to be 26-1/2" deep
005119	Sub-Frame, GS-36, Hot-Dip Galvanized, Custom Pumpers, Aluminum and Galvaneal Bodies
UPO0048875	Hatch Compartment, Driver's Side, 2-Door, Centered Bulkhead, On-Scene Access LED Lighting
	Shop Note: *Each hatch compartment shall have an opening of 18" wide x 70" long and a usable depth of 17". The rear hatch shall be shortened to create a landing area at the top of the rear hosebed access ladder*

Option ID	Description
120758	Hatch Compartment Flooring, Driver's Side, Black Dri-Dek, (2) Hatch Sections
009194	**Hatch Compartment, Officer's Side, 2-Door, Centered Bulkhead, On-Scene Access LED Lighting**
	Shop Note: *Each hatch compartment shall have an opening of 18" wide x 78" long and a usable depth of 17".*
120766	Hatch Compartment Flooring, Officer's Side, Black Dri-Dek, (2) Hatch Sections
900963	Walkways/Overlays/Stepping Surfaces, Tread Plate, NFPA
UPO0049506	Rear Deck, Bolt-On, Flat Back, Tread Plate, 16", Mitre Cut
005118	Rub Rails, "C" Channel Design (No Rubber Inserts)
010080	Tow Option, Rear, Tow Eye, One (1), Underbody Subframe
002432	Receiver Tube, (1), Rear
	Shop Note: *Recess into rear step to meet angle of departure.*
UPO0048627	Storage Compartment, Long Handle Tools, Officer's Side Rear of Body, Painted Door
	Shop Note: *A stop to be set at 78" deep. Pike poles customer supplied and installed*
002186	Wheel Wells, Rear, Single Axle
003559	Fenderettes, (2), Single Axle, Stainless Steel
120489	Exhaust Heat Deflector Shield, 4"
004929	Access Panel for Fuel Tank Gauge, Pumpers
002427	License Plate Bracket
005155	Stainless Steel Screws, Pumper
001210	Bag of Bolts
000505	Overlay, Tread Plate, Vertical Areas of Both Front Compartments
100989	Rear Steps with Hansen White LED Handrails, OEM Access Ladder (Alum.) with 2-Step Drop Down, Driver's Side-Rear
	Shop Note: *A Grote light shall be installed above the ladder in addition to the lighted handrails*
900960	Handrail Material, Knurled Aluminum
	Shop Note: *Engineering note: there is a mix of handrail brands and material on this truck.*
005158	Handrail, Body (Rear), Rear Face, Vertical, Officer's Side, Knurled Aluminum
	Shop Note: *Installed next to ladder rack*
120690	Handrail, Body (Rear), Below Hose Bed, Horizontal, Knurled Aluminum
UPO0048629	Handrail, Horizontal,/Vertical Rear Landing Area, Driver's Side, Top, Hansen White Backlit Knurled ALuminum
006164	Handrails, Body (Rear), Hose Bed Cover, Horizontal, Knurled Aluminum

Option ID	Description
002714	**Ladder Storage, Inside Body, Side of Water Tank, Officer's Side, Painted Aluminum Door**
001296	Ladder (1), Duo-Safety, 24' Aluminum Two-Section Extension, 900-A
001293	Ladder (1), Duo-Safety, 14' Aluminum Roof, 775-A
001291	Ladder (1), Duo-Safety, 10' Aluminum Folding Attic, 585-A
009219	**Pike Pole Tubes (2), In Ladder Storage Compartment**
005236	Pike Pole (1), Nupla, 6' Fiberglass, Standard Hook, YPD-6
005237	Pike Pole (1), Nupla, 8' Fiberglass, Standard Hook, YPD-8
900951	**Wheel Chock Storage, Under Front of Body, Driver's Side**
001204	Wheel Chocks, (1) Pair, Zico SAC-44 and Bracket, OEM Installed *Shop Note:* *Insure these are the SAC-44-E*
110168	***OBSOLETE***Pump Module, Side Mount, Integral, CORE, Aluminum, 1/8"
101261	***OBSOLETE***Sub Frame, Hot Dip Galvanized, Front Frame Extension Sub-Assembly, Core/Uni-Body
004731	Pump Compartment Internal Lighting, LED, On-Scene Night Axe
009890	Running Board, Driver's Side, Integral, Tread Plate
010132	Running Board, Officer's Side, Integral, Tread Plate
009941	Dunnage Compartment, Tread Plate, Above CORE Pump Module ,NO Cover *Shop Note:* *This is the area around the deckgun. The floor of this area will be used to stand on while operating the deckgun*
009947	Storage Compartment, Transverse, CORE
UPO0050839	***OBSOLETE***Inspection Panel, Pump, Front Pump Module, Removable, Tread Plate, Compression Latches, Side Mounts, RMA's
UPO0048642	Transverse Storage Divider (1), Gray Line-X Aluminum
UPO0038507	Pump Panels, CORE, Controls in L1, Stainless Panels, IC Bezels/Trim Rings/Labels, Extended Below Cab Extension
009950	Pump Panel Lighting, Side Panels, LED, On-Scene Night Axe, L1 Rollup Door, CORE
910612	Pump Panel Lighting Activation, Automatic with Park Brake Engaged
Pump / Foam System	**Pump / Foam System**
UPO0048630	Pump, Waterous, Single-Stage (PTO), 1500 GPM, CSUPA-1500 Standard Impellers *Shop Note:* *All plumbing and Foam Schematics to be on the Forward wall of the compartment L1*
000090	Mechanical Seals, Waterous
002792	Anodes, Waterous, Magnesium, 2 Discharge, 2 Intake
UPO0048631	Pump Rating, 1500 GPM
910641	Pump Mounting, Inside Front of Body
UPO0048877	Hot Shift PTO Connection, Pump In Motion
101812	Governor, Pump Boss Max, FRC
111109	Intake Relief Valve, Pump, Akron, #53, Factory Preset

Option ID	Description
	Shop Note: *Set to 150 psi*
006588	Primer, Trident, AirPrime (3-Barrel), Air-Operated Valve (31.001.7)
000112	Master Drain Valve, Trident
910645	Pump Color Primed Black - Intakes Unpainted
901166	Pump Manuals Waterous, (2)
111071	***OBSOLETE***Pump and Engine Cooling System, Inn. Cntrls, 3/8" I.D., Hose, Controls in L1
000243	Foam System, FoamPro, 2002, Single System, Class A Foam, NO Optional Flush System
004931	Refill System, FoamPro, Power-Fill, Single System
UPO0050481	Overboard Foam Fill Kit, Foam Pro 3435-0184
	Shop Note: *The foam flush on overboard foam fill kit will also be plumbed so that it can flush the foam manifold*
980014	Foam System Testing, Single System
UPO0050838	Manifold, Waterous, Side Mounts, Foam (Redlands)
910503	Akron 8800/8600 - Push/Pull Discharges (RC-10 on 3" or Larger) - Manual Intakes
910550	Gauge Brand, Class 1, 2-1/2" Liquid Filled (No Bezel) - PSI 0-400
004105	Master Gauges, Class 1, 4-1/2", Liquid Filled (No Bezel), PSI -30-0-400
111067	Test Ports, Pressure/Vacuum, Inn. Cntrls, Operators Panel
910527	Hardware Brand, South Park, NH Intake Swivels, NH Discharges, TFT Storz
100377	Drains, Innovative Controls, Manual Lift Handle
901248	Water Line Fittings, Push On Fittings
Tank/Pump Plumbing Labels	Tank/Pump Plumbing Labels - See label order form (required)
100349	**Pump to Tank Fill, 2", Akron 8800 2" Manual Valve, IC Push-Pull Handle**
100334	**Tank to Pump, 4", Akron 8800 3" Manual Valve, IC Push-Pull Handle**
	Shop Note: *Pull to Close*
Intakes	**Intakes**
100381	**Main Intake, Driver Side, 6", Short Tube, Full-Body Pump, MNST**
UPO0048879	No Cap
	Shop Note: *SOE will be signed*
002588	**Auxiliary Intake, Driver-Side, 2-1/2", Fully Recessed**
007059	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle
001246	Plug, NH, 2-1/2", South Park, HPC3008AC
100385	**Main Intake, Officer Side, 6", Short Tube, Full-Body Pump, MNST**
UPO0048880	No Cap
	Shop Note: *SOE will be signed*
002587	**Auxiliary Intake, Officer-Side, 2-1/2", Fully Recessed**

Option ID	Description
007059	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle
001246	Plug, NH, 2-1/2", South Park, HPC3008AC
Intake Labels	Intake Labels - See label order form (required)
Discharges	**Discharges**
002545	**Discharge, Driver-Side, 2-1/2", NST (250 GPM NFPA Rated)**
007059	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle
	Shop Note: *Handle to the left when closed*
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100527	Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park
002545	**Discharge, Driver-Side, 2-1/2", NST (250 GPM NFPA Rated)**
007059	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle
	Shop Note: *Handle to the left when closed*
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100527	Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park
002538	**Discharge, Officer-Side, 2-1/2", NST (250 GPM NFPA Rated)**
UPO0048633	Valve, 2-1/2", Akron, Electric, 8625, Stainless Ball, 9327 Mini Navigator Pro Controller (Valve Only)
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100527	Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park
002553	**Discharge, Officer-Side, 4", NST (625 GPM NFPA Rated)**
UPO0048634	Valve, 4", Akron, Electric, 8840, Bronze Flat Ball, 9327 Navigator Pro Controller (Valve Only)
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100609	Elbow (30 Deg.) 4" FNH x 4" MNH (SE393040AC) - NH Cap (HCC2814AC), Chrome, South Park
121828	**Discharge, Front Bumper Driver-Side, 1-1/2", Chassis Installed Plumbing, Above Gravelshield, NST**
910534	Foam Capable Discharge
UPO0048881	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
910526	Preconnect Discharge
100496	**Discharge, Rear Driver-Side, 2-1/2", NST, 3" Plumbing**
910534	Foam Capable Discharge
UPO0050042	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)
	Shop Note: *Controller is a Sidemount Bezel Pistol Grip controller*
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100527	Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park
100496	**Discharge, Rear Driver-Side, 2-1/2", NST, 3" Plumbing**

Option ID	Description
910534	Foam Capable Discharge
UPO0050043	Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)
	Shop Note: Controller is a Sidemount Bezel Pistol Grip controller
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
100527	Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park
UPO0049503	Speedlays in Lift Out Trays, Ahead of Pump Panel, (2) 1-1/2", Black Poly, Side-By-Side
	Shop Note: Make trays 1" wider than standard
007013	Pre-connect Hose Bed Housing Coating, Abraded Finish
UPO0049504	Speedlay Flooring, Slots Integrated Into Black Poly Hose Load Trays
	Shop Note: Slots are fabricated into the poly trays.
009943	Speedlay Rollers
000139	Speedlay End Covers, Webbing, Sides Over Rollers with Velcro Center, 1 Cover on Each Side
901232	NO Crosslay Hose Bed Loading Lights
910701	**Pre-connect, Crosslay/Speedlay, 1-1/2", NST**
910679	Speedlay Load, 200' of 1-3/4" Hose, Double Stack
910534	Foam Capable Discharge
UPO0050044	Valve, 2", Akron, Manual, 8820, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)
	Shop Note: Controller is a Sidemount Bezel Pistol Grip controller
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
910526	Preconnect Discharge
910701	**Pre-connect, Crosslay/Speedlay, 1-1/2", NST**
910679	Speedlay Load, 200' of 1-3/4" Hose, Double Stack
910534	Foam Capable Discharge
UPO0050045	Valve, 2", Akron, Manual, 8820, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)
	Shop Note: Controller is a Sidemount Bezel Pistol Grip controller
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
910526	Preconnect Discharge
100783	**Booster Reel, Hannay, Steel, Hannay Silver, Electric Rewind, 150' of 3/4" Hose Capacity**
910703	Booster Reel Location, Dunnage, Above the Pump
910534	Foam Capable Discharge
100648	Valve, 1-1/2", Akron, Manual, 8815, Stainless Ball, Innovative Controls Push Pull Controller
100796	Booster Hose, 3/4", 800 lb Test, 150', (1) 100' Section, (1) 50' Section
100830	Rewind Switches, Booster Reel, (1) Driver's Side Pump Panel, (1) Foot Switch Below Running Board
100451	Chassis Air, Blow-Out, Booster Reel, Driver's Side Pump Panel

Option ID	Description
100763	**Booster Reel, Hannay, Aluminum, Polished, Electric Rewind, 100' of 3/4" Hose Capacity**
910703	Booster Reel Location, Dunnage, Above the Pump
100648	Valve, 1-1/2", Akron, Manual, 8815, Stainless Ball, Innovative Controls Push Pull Controller
UPOxxxxxxx	Booster Hose, 3/4", 800 lb Test, 150', (1) 100' Section (1) 50' section
100831	Rewind Switches, Booster Reel, (1) Officer's Side Pump Panel, (1) Foot Switch Below Running Board
100513	**Deluge, Center, 3", Victaulic**
UPO0048884	Valve, 3", Akron, Electric, 8630, Stainless Ball, 9327 Navigator Pro Controller (Valve Only)
000368	Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400
005367	Extend-A-Gun, Manual, TFT, 18", XG18VL-XL, For Crossfire Monitor
006634	Deck Gun, Manual, TFT Crossfire XFT-NJ, 3" NH Inlet
100417	Monitor Color, TFT Red, Powder Coat
002593	Stacked Tips (Quad) and Stream Shaper, TFT, MST-4NJ, XF-SS10 (2-1/2" NH)
UPO0049106	Portable Ground Base, TFT, (1) 4 " Inlet, XFH-1NP
Discharge Labels	Discharge Labels - See label order form (required)
Low Voltage	**Low Voltage**
002955	Electrical System, Pumper, Weldon V-MUX Multiplex, QL-12 Harnesses, Sealed Switches
911058	Electrical System Test, 12 Volt
100105	Tail Lights, LED, Whelen, M6 Series, Stop-Tail (Combination) (M62BTTC)/Turn (M62TC)/Backup (M62BU), 3-Light Vertical Individual Bezels (Clear Lenses)
002192	Switch, Rear Work Light, At Rear/Reverse
008730	Turn Signals, (2) in Rub Rail, LED, Truck-Lite, Model 21
100958	Ground Lights, LED, T44, Tecniq, Activation by Park Brake
	Shop Note: *mount lights so the do not interfere with angle of departure*
006261	Clearance Lights, LED, Grote (65282), Red, Pumper
004882	Camera System, Back-Up, Chassis Supplied, OEM Installed
000621	Alarm, Door Open Warning Circuit
100043	Intercom System, David Clark 3800, 4 Cab Position, Wired Driver/Officer (H3442), 2 Wired Crew (H3442)
	Shop Note: *See dealer provided schematic for the David Clark system in the P:drive. Head sets and head set plugs to placed at SFA standard positions*
UPO0050041	David Clark Dual Radio Interface Motorola XTL 5000/Bendix King GMH-R
911317	Upper Zone A, Chassis Supplied and Installed
UPO0048645	Upper Zone C, Warning Lights (4), Whelen, LED, 500 Series (2) Per Side/Top Pair L/R, Surface Mounted
Upper Zone C Light/Lens Color	Light/Lens Color - The driver's and officer's side lights shall both have red LED and red lenses
UPO0038176	Upper Zone B/D, Warning Lights (2), Whelen, LED, 500 Series TIR6

Option ID	Description
Upper Zone B/D Light/Lens Color	Light/Lens Color - Red lights/red lenses
110487	Lower Zone Warning Lights (4 OEM Provided), A (0), B (1), C (2), D (1), Whelen, LED, M6 Series *Shop Note:* *Two to be mounted at the rear in the lower zone C, and one each side in the rear wheel wells.*
Lower Zone Light/Lens Color	Light/Lens Color - The lower zone warning lights shall all have red LED's and red lenses unless otherwise specified.
003120	Traffic Advisor, Whelen, 6-Light, 5mm LED Low-Profile, TAL65, TACTL5 Controller
910738	Traffic Directional Light Location, Rear Body Face, Recess Mounted
007111	Air Horns (2), Chassis Supplied, OEM Installed
910990	Air Horn Locations, Recessed in Front Bumper, (1) Driver's Side / (1) Officer's Side, Inboard
000890	Air Horn Activation, Push Button on Pump Panel, Driver's Side *Shop Note:* *This is to be a rocker switch*
010221	Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel *Shop Note:* *A disconnect switch will be located adjacent to the lead.*
900021	Power Lead Location, In R3 Cmpt *Shop Note:* *Located on the forward bulkhead.*
UPO0045878	Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM
910851	Lighting Location, Rear Face of Body, Both Sides
000869	Lighting Activation, In Cab and On Pump Panel, 'REAR SCENE', Rocker Switches
UPO0045879	Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM
910854	Lighting Location, Side Face of Body, Forward, Both Sides
110848	Lighting Activation, Pair, In Cab and On Pump Panel, 'LEFT SCENE' and 'RIGHT SCENE', Rocker Switches
UPO0045880	Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM
910853	Lighting Location, Side Face of Body, Rearward, Both Sides
110848	Lighting Activation, Pair, In Cab and On Pump Panel, 'LEFT SCENE' and 'RIGHT SCENE', Rocker Switches
Line Voltage	**Line Voltage**
Paint / Striping / Decals	**Paint / Striping / Decals**
900717	**Chassis Paint, Chassis Manufacturer Painted, Single Tone**
009171	Body Paint, Single Tone, Pumper, Aluminum Material
UPO0048646	Body Paint Color, Pumper, Single Tone, Red, AkzoNobel, FLNA30194
901234	Overlays, Pump Module Structure, Match Pump Panel, Side Mount
001170	Under Body Finish, Two-Step Undercoating Process

Option ID	Description
006089	Corrosion Protection, Electrolysis Corrosion Kontrol (ECK)
001033	Sample Paint Card with Paint Formula
UPO0048647	Reflective Lettering, Gold With White Outline and Black Shadow
120211	3" Lettering (40), Reflective, With Outline
120221	4" Lettering (40), Reflective, With Outline
120229	6" Lettering (10), Reflective, With Outline
UPO0048648	16 - Lettering, Reflective, With Outline, 5"
120254	10" Lettering (15), Reflective, With Outline
120142	18" Lettering (10), Reflective
900879	**Front Cab Striping, Wrap to Grill**
004522	Rub Rail Striping, 2", Silver, Reflective, Pumper
008673	Body Striping, Pumper, 1"-4"-1", Z Transition
900883	Upper Stripe Color, Gold
900906	Main Stripe Color, White
900919	Lower Stripe Color, Gold
007893	Chevron Color, Red / Yellow, 3M 1172EC and 3991
006009	Chevron Layout, Rear Body Surface, Painted Storage Doors
000861	Chevron, Front Bumper, Match Rear Chevron
	Shop Note: *T-1 door will not be Chevron*
UPO0048649	Decals (4), Reflective, Custom on Door, Customer Supplied, OEM Installed
Warranties	**Warranties**
RFW0002	General Two (2) Years or 36,000 Miles Limited Warranty
RFW0502	Body Structure (Aluminum) Ten (10) Years or 100,000 Miles Limited Warranty
RFW0202	Electrical Two (2) Years or 36,000 Miles Limited Warranty
RFW0800	Plumbing and Piping (Stainless Steel) Ten (10) Years or 100,000 Miles Limited Warranty
WLF800	Warranty, Water Tank, UPF, Standard Lifetime
RFW0515	Body Substructure (Galvanized) Twenty(20) Years or 100,000 Miles Limited Warranty
RFW0710	Paint and Finish (Exterior Clear coated) Ten (10) Years Limited Warranty
W05810-A	Warranty, Pump, Waterous, Standard 7 Year

Option ID:911059 **QTY:**1
Bidding Prerequisites, United States

PREREQUISITE BIDDING REQUIREMENTS

Any manufacturer submitting a proposal or bid, to these specifications, shall meet the following conditions:

- The manufacturer of the apparatus herein specified, shall be wholly owned (100%) and managed by a Company, Corporation, and/or Parent Company that is wholly based and permanently resides in the United States of America.
- The Company, Corporation, and/or Parent Company, and all assets belonging to such, shall be wholly owned and managed (100%) by the entities specified above.

Any proposal, bid, or response to these specifications by any foreign based, owned, or managed (in part or in whole) Company, Corporation, and/or Parent Company shall be cause for immediate rejection. Any proposal, bid, or response to these specifications by any Company, Corporation, and/or Parent Company, that is owned, operated, managed, or held in contract, in part or wholly by a partnership or other agreement, shall be cause for immediate rejection.

Exceptions to these conditions will not be allowed under any circumstances.

Option ID:911069 **QTY:**1
Intent of Specifications, Pumper

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the purchaser of a complete apparatus equipped as herein specified. With a view to obtaining the best results and the most acceptable apparatus for service in the fire department, these specifications cover the general requirements as to the type of construction, together with certain details as to finish, equipment, and appliances with which the successful bidder must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features.

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 50 years.

Each bidder shall furnish satisfactory evidence of his ability to construct the apparatus specified. The bidder shall also show that they are in a position to render prompt service and furnish replacement parts for said apparatus.

CONTRACTOR'S SPECIFICATIONS

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract shall conform.

These specifications shall indicate size, type, model, and make of all component parts and equipment.

TIMELY PROPOSALS

It is the bidder's responsibility to see that their proposals arrive on time. Late proposals, facsimiles, e-mails, telegram, or telephone bids shall not be considered.

DRAWINGS

All bid drawings shall be stamped PROPOSAL.

- A total of six (6) drawings shall be supplied. The provided drawings can be printed to any paper size, but the scale will only be valid when printed to the paper size listed in the title block

- Drawings shall show five (5) views: left (drivers), right (officers), front, rear, and top

- OAL (overall length) in feet and inches. The estimated length shall be rounded up to the nearest inch

- OAH (overall height) in feet and inches. The estimated height shall be rounded up to the nearest inch

- Wheelbase in inches

- Pump house width in inches

- Front of the body to the centerline of the rear axle in inches

- Front and rear overhang in inches

- Angle of Approach and Departure

- Roll up doors will be shown in open position. Lap doors will be shown in the closed position

Compartment dimensions shall be shown in a table on the drawing.

The table shall display:

Clear door opening - The width/height of the clear door opening

Interior dimensions - The interior compartment dimensions excluding any accessories or pockets (i.e. roll up door drums, hard suction hose pans, suspension pockets, etc.)

Divide heights - The measurement where the compartment changes from full depth to shallow depth

Ground ladders shall be labeled with a letter designation referring to the table for an explanation of the ladder

- No pump panel or instrument panel controls, discharges or inlets shall be shown. The panel space is to be left blank and labeled "Pump Panel"

- Rear plumbing, such as 2-1/2" discharges, rear steamers, and direct tank fills, shall be

shown

- Water tank outline

- Fill towers

- Generator outline

- Warning lights

- D.O.T. lights

Text Block Items

- Chassis make/model

- Fire pump make/model

- Water tank capacity

- Foam cell capacity

- Body material

- Hose bed capacity in cubic feet

- Total compartment cubic feet

- Utilize an unique bid number

- Drawings shall be printed on white paper with black ink

PURCHASER'S OBLIGATIONS

The purchaser reserves the right to accept or reject any or all bids on such basis as the purchaser deems to be in its best interest. All bidders shall be advised that the purchaser is not bound in any manner to automatically accept the lowest bid. The purchaser shall only be obligated to purchase the lowest bid that meets these detailed specifications as closely as possible

SAFETY REQUIREMENTS

It is required that the bidder shall meet all State and Federal safety standards and laws that are in effect on the date of the bid for the item(s) that are being specified and the particular use for which they are meant.

ACQUAINTANCE WITH SPECIFICATIONS

It is the responsibility of the bidder to review all of the bidding requirements. Failure of a bidder to be acquainted with this information shall not relieve them from any obligations of the bid requirements.

QUALITY AND WORKMANSHIP

The design of the apparatus shall embody the latest approved automotive engineering practices. Experimental designs and methods shall not be acceptable.

The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: accessibility of the various units that require periodic maintenance, ease of operation (including both pumping and driving), and symmetrical proportions.

GENERAL CONSTRUCTION

The complete apparatus, assemblies, subassemblies, component parts, and so on, shall be designed and constructed with due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subjected when placed in service.

All parts of the apparatus shall be strong enough to withstand the general service under full load. The apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair.

The apparatus shall be designed and constructed, and the equipment so mounted, with due consideration to distribution of the load between the front and rear axles, and side to side loading that all specified equipment, including a full complement of specified ground ladders, full water tank, loose equipment, and firefighters; shall be carried without overloading or damaging the apparatus as per requirements defined in NFPA, current edition.

LIABILITY

The bidder, if their bid is accepted, shall defend any and all suits and assume all liability for the use of any patented process, device or article forming a part of the apparatus or any appliance furnished under the contract.

WARRANTY

A copy of the warranties for the chassis, pump, body, paint, and water tank shall be furnished with each bidder's proposal.

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BID FORMS / SPECIFICATIONS

All bid forms shall be submitted on the attached bid form. The bid form and/or these specifications shall be filled out by checking either the "YES" or "NO" column for each and every section/paragraph. Failure to use this form and/or these specifications shall be cause for immediate rejection of any bid.

EXCEPTION TO SPECIFICATIONS

The following chassis, pump, and body specifications shall be strictly adhered to.

Exceptions shall be allowed if they are equal to or superior to that specified (as judged by the customer), and provided they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS". Exception lists shall refer to the specification page number. Each check in the "NO" column shall be listed and fully explained. Where no check is made in a particular paragraph with either "YES" or "NO", it shall be assumed the bidder is taking exception to that paragraph. If a paragraph contains an empty column, where the bidder neglected to check the proper "YES" or "NO" column, it is assumed the bidder is not conforming to the requirements of this paragraph. If no explanation is given in the "EXCEPTIONS TO SPECIFICATIONS" document, the bid is subject to immediate rejection.

PROPOSALS TAKING TOTAL EXCEPTION TO THESE SPECIFICATIONS WILL BE IMMEDIATELY REJECTED.

The buyer is aware that all bidders shall have to take some exceptions therefore; BIDDERS THAT TAKE NO EXCEPTIONS shall BE REQUIRED TO MEET EVERY PARAGRAPH TO THE FULLEST EXTENT SHOULD THEIR BID BE ACCEPTED. It is the intent of the purchaser to receive bids that do not require telephone calls or other communications to ascertain what a bidder is intending to supply.

Upon delivery, the apparatus shall be inspected against THESE specifications and not those supplied by the bidder with their proposal. Deviations shall not be acceptable unless they were noted as exceptions at the time of bid and the apparatus shall be rejected until said deviations are corrected to the satisfaction of the buyer.

Decisions regarding equal to or better than, shall be the sole responsibility of the recipient of the bids rather than those companies submitting bids. All deviations, regardless of significance must be explained in the "EXCEPTIONS TO SPECIFICATIONS" section of the bid.

When exceptions are not taken but inconsistencies are noted in the submitted detailed specifications, the bid may be subject to rejection.

ROADABILITY

The apparatus, when fully equipped and loaded, shall be capable of the following performance while on dry paved roads that are in good condition.

- Accelerating from 0 to 35 mph within 25 seconds on a 0 percent grade
- Attaining a speed of 50 mph on 0 percent grade
- Maintaining a speed of at least 20 mph on any grade up to and including 6 percent
- The maximum top speed of the apparatus shall not exceed the tire manufacturer's maximum speed rating for the tires installed on the apparatus.

FAILURE TO MEET TESTS

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the bidder within 30 days of the date of the first trials.

Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes as required to conform to any clause of the specifications within 30 days after notice is given to the bidder of such

changes, shall be cause for rejection of the apparatus.

Permission to keep or store the apparatus in any building owned or occupied by the Department during the specified period, with the permission of the bidder, shall not constitute acceptance. No Exceptions

PROPOSAL SEQUENCE

Bid specifications shall be submitted in the same sequence as these specifications for ease of checking compliance. There shall be no exceptions allowed to this requirement. The apparatus committee intends to be thorough during the evaluation of bids process. In order to maximize efficiency and minimize the time it takes to thoroughly evaluate all received bids this requirement must be strictly adhered to.

AWARD OF CONTRACT

All bids submitted shall be good for a minimum of 30 days during which time bid securities submitted with the proposals shall be held by the purchaser. Criteria for the award shall include, but not be limited to, the following:

- Apparatus Performance And Safety Levels / Considerations
- Completeness of proposal
- Accuracy of accompanying data
- Past performance of bidder
- Compliance with the detailed specifications
- Compliance with purchasers request(s) for personnel qualifications or certifications
- Exceptions and clarifications
- Financial stability of bidder
- Local representation of the manufacturer
- Serviceability of the proposed apparatus
- Service capabilities of the bidder's local representative
- Compliance with NFPA, current edition
- Any other factor the purchaser deems relevant

After the evaluation and award process is complete, all bidders shall be notified of the results and securities shall be returned.

Option ID:901160 **QTY:**1
Engine Availability

ENGINE AVAILABILITY

If an L9 engine is NOT available or cannot be provided for that specific quote or build slot at time of production, the engine will automatically be upgraded and charged for an X12 (or the X10 engine) with all costs associated with the upgrade being passed on to the end user. No exceptions.

If a pre-2027 emission engine is NOT available at the time of build (starting production on January 1, 2026) the order will automatically be upgraded and charged for either the 2027 engine compliant Cummins X-10 or X-15, with all associated costs being passed on to the end user. No exceptions.

Option ID:911060 **QTY:**1
Standards Version, NFPA

NFPA

The National Fire Protection Association "Standard for Automotive Fire Apparatus", is hereby adopted and made a part of these specifications, the same as if it were written out in full detail, with the exception of the section dealing with "Equipment Recommended for Various Types of Apparatus". Bidders shall provide the equipment requested herein and the buyer shall supply the rest before the apparatus is put into service. It is the intent of the purchaser to purchase an apparatus that meets 100% of the minimum standards defined and outlined in NFPA latest edition. There are to be no exceptions to this requirement.

Option ID:911064 **QTY:**1
Inspection Certificate, NFPA Compliance

INSPECTION CERTIFICATE - NFPA COMPLIANCE

An OEM inspection certificate for the apparatus shall be furnished upon delivery. The purpose of this NFPA compliance inspection shall be to serve as proof to the customer that all applicable standards have been met or exceeded by the responsible manufacturer.

The following objectives shall be achieved as a result (this listing shall not be construed as being all inclusive):

- Ensure that understanding of all parties respective responsibilities have been addressed by the actual referencing of NFPA and the amendments in these specifications and the purchase contract and documentation.
- Ensure that only structural materials complying with appropriate standards and codes are used for construction.
- Ensure the applicable standards of design and manufacturing have been met or exceeded.
- Ensure that safety factors have been met or exceeded where required.
- Ensure that applicable standards for testing and inspection have been met or exceeded by personnel with the appropriate qualifications, experience, and certifications.
- Ensure that where applicable components, equipment, and loose equipment carry the appropriate characteristics, classifications, and/or certifications.
- Ensure that in general and as a whole, all applicable requirements set forth in NFPA, and those codes, standards, and specifications referenced by said parties are met, exceeded, and/or addressed.

Option ID:911070 **QTY:**1
Documentation, NFPA

CONSTRUCTION DOCUMENTATION

The contractor shall supply, at the time of delivery, at least one (1) copy of the following documents:

1. The manufacturer's record of apparatus construction details, including the following information:

- Owners name and address
- Apparatus manufacturer, model, and serial number
- Chassis make, model, and serial number
- GAWR of front and rear axles
- Front tire size and total rated capacity in pounds or kilograms
- Rear tire size and total rated capacity in pounds or kilograms
- Chassis weight distribution in pounds with water and manufacturer mounted equipment (front and rear)
- Engine make, model, serial number, rated horsepower, related speed, and governed speed
- Type of fuel and fuel tank capacity
- Electrical system voltage and alternator output in amps
- Battery make, model, and capacity in cold cranking amps (CCA)
- Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio
- If applicable, the pump make, model, rated capacity in gallons or liters per minute, and serial number
- Pump transmission make, model, serial number, and gear ratio, if unit is equipped with a pump
- If applicable, the auxiliary pump make, model, rated capacity in gallons or liters per minute, and serial number
- Water tank certified capacity in gallons or liters
- On aerial apparatus, the device type, rated vertical height in feet or meters, rated horizontal reach in feet or meters, and rated capacity in pounds or kilograms
- Paint manufacturer and paint number(s)
- Company name and signature of responsible company representative

2. Certification of slip resistance of all stepping, standing, and walking surfaces

3. If the apparatus has a fire pump, a copy of the following shall be provided: pump manufacturers certification of suction capability, apparatus manufacturers approval for stationary pumping applications, engine manufacturers certified brake horsepower curve showing the maximum governed speed, pump manufacturers certification of the hydrostatic test, and the certification of inspection and test for the fire pump

4. If the apparatus has an aerial device, the certification of inspection and test for the aerial device, and all the technical information required for inspections to comply with NFPA 1914, Standard for Testing Fire Department Aerial Devices

5. If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source

6. If the apparatus is equipped with an air system, test results of the air quality, the SCBA fill station, and the air system installation

7. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)

8. Written load analysis and results of the electrical system performance tests

9. When the apparatus is equipped with a water tank, the certification of water tank capacity

OPERATION AND SERVICE DOCUMENTATION

The contractor shall supply at the time of delivery, at least two (2) sets of complete operation and service documentation covering the completed apparatus as delivered and accepted. The documentation shall address at least the inspection, service, and operations of the fire apparatus and all major components thereof. The contractor shall also provide documentation of the following items for the entire apparatus and each major operating system or major component of the apparatus:

- Manufacturers name and address
- Country of manufacturer
- Source of service and technical information
- Parts and replacement information
- Descriptions, specifications, and ratings of the chassis, pump, and aerial device
- Wiring diagrams for low voltage and line voltage systems to include the following information: representations of circuit logic for all electrical components and wiring, circuit identification, connector pin identification, zone location of electrical components, safety interlocks, alternator-battery power distribution circuits, and input/ output assignment sheets or equivalent circuit logic implemented in multiplexing systems
- Lubrication charts
- Operating instructions for the chassis, any major components such as a pump or aerial device, and any auxiliary systems
- Precautions related to multiple configurations of aerial devices, if applicable
- Instructions regarding the frequency and procedure for recommended maintenance
- Overall apparatus operating instructions
- Safety considerations
- Limitations of use
- Inspection procedures
- Recommended service procedures
- Troubleshooting guide
- Apparatus body, chassis, and other component manufacturers warranties
- Special data required by this standard
- Copies of required manufacturer test data or reports, manufacturer certifications, and independent third-party certifications of test results
- A material safety data sheet (MSDS) for any fluid that is specified for use on the apparatus
- One (1) copy of the FAMA Safety Guide

The contractor shall deliver with the apparatus all manufacturers operations and service documents supplied with components and equipment that are installed or supplied by the contractor.

STATEMENT OF EXCEPTIONS

The proposed apparatus as described in this specification document and all related material with the bid package shall meet or exceed all applicable sections for the category of apparatus as defined by NFPA unless specifically noted within this specification or other official documents associated with this bid.

Should any area, section or portion of the apparatus not meet the intent and applicable requirements, a clearly defined listing or explanation of what and why compliance was not achieved shall be provided to the purchaser at the time of delivery.

Option ID:980016 **QTY:**1
Owner's Manuals, Electronic, (1) USB Drive

OWNER'S MANUAL

An owner's manual containing the construction, operation, and service documentation shall be provided on a USB Drive. One (1) copy of the USB shall be provided with the apparatus.

ELECTRICAL MANUAL

A complete electrical manual for the apparatus shall also be provided on the USB Drive. This manual shall be specifically prepared for this individual unit rather than a generic schematic manual designed to accommodate all apparatus. The electrical manual shall also include electrical schematics, harness layouts, V-Mux specifications (including Node Input/output Spreadsheet and Node Relationship Spreadsheet), and Master Wire Listing. A contact letter shall also be provided by the electrical engineer, who built the manual, with instructions on using the manual and contact information for assistance with electrical manual questions.

ELECTRICAL SCHEMATICS

A section of the electrical manual shall include schematics of the electrical system and components on the apparatus. These schematics shall be specifically prepared for this individual unit rather than a generic schematic designed to accommodate all apparatus.

PUMP PLUMBING SCHEMATICS (if applicable)

A section of the electrical manual shall include a schematic of the pump plumbing. This schematic shall be specifically prepared for this individual unit rather than a generic schematic designed to accommodate all apparatus.

HYDRAULIC SCHEMATICS (if applicable)

A section of the electrical manual shall include schematics of the hydraulic components on the apparatus including but not limited to:

- Ladder Rack(s) and Hose Bed Door(s) (if applicable)
- Aerial - Retraction/Extension (if applicable)
- Aerial - Rotation (if applicable)
- Tiller - HVAC Hydraulics System (if applicable)

FIRE APPARATUS SAFETY GUIDE

One (1) printed copy of the FAMA Fire Apparatus Safety Guide shall be provided with the apparatus. This guide provides safety instructions for operations of the fire apparatus.

Option ID:911081 **QTY:**1
Misc. Equipment Allowance, 2,500 Lb.

MISCELLANEOUS EQUIPMENT ALLOWANCE

The Gross Axle Weight Rating (GAWR) and the Gross Combined Weight Rating (GCWR) or Gross Vehicle Weight Rating (GVWR) of the chassis shall be adequate to carry the weight of the unequipped apparatus with the water tank and other tanks full, specified hose load, unequipped personnel weight, ground ladders, and miscellaneous equipment allowance of 2,500 pounds.

Option ID:901080 **QTY:**1
Tilt Table Test, Not Required, Chassis ESC

TILT TABLE TESTING NOT REQUIRED

The chassis of the apparatus is equipped with Electronic Stability Control (ESC), which is in accordance with NFPA, current edition. requirement of maintaining a stability of 26.5 degrees in both directions.

VEHICLE STABILITY

The apparatus shall comply with the requirements of NFPA, current edition as it applies to vehicle stability. The particular apparatus as described in the specification provided within the bid package shall be classified into one of the following categories:

- The apparatus shall go through actual tilt table testing which shall be determined by the apparatus manufacturer.
- The apparatus shall be equipped with a rollover stability control system as defined in section 4.13.1.2 of NFPA, current edition.
- The apparatus shall be deemed a similar apparatus and meeting the intent of section 4.13.1.1.2 of NFPA, current edition.

Option ID:980012 **QTY:**1
Pump Certification, Independent Third Party

INDEPENDENT THIRD PARTY PUMP CERTIFICATION

The fire pump shall be tested and certified by an independent third party testing company. Tests shall be conducted so that the pump performs as listed below:

- 100% of rated capacity at 150 pounds net pressure
- 70% of rated capacity at 200 pounds net pressure
- 50% of rated capacity at 250 pounds net pressure
- 100% of rated capacity at 165 pounds net pressure

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer’s factory to the performance spots as outlined in accordance with NFPA, current edition. The pump shall be free from objectionable pulsation and vibration.

Option ID:911066 **QTY:**1
Pump Certification Measure, U.S. GPM

PUMP CERTIFICATION

The pump shall be certified in U.S. gallons per minute (GPM).

Option ID:911304 **QTY:**1
Apparatus Production Photos

ONLINE CUSTOMER INTERACTION

Smeal Holding LLC. shall provide the capability for online access.

The fire department shall be able to view digital photos of their apparatus in the specified phases of construction.

The following phases will be captured and displayed:

- Chassis arrival to the OEM
- Fabrication
- Pump and Plumbing
- Paint
- Assembly
- Completion of production

The photos shall be uploaded to a secure website, only accessible to the customer and representatives of the OEM.

Option ID:911073 **QTY:**1
Pre-Construction Meeting, OEM Factory

PRE-CONSTRUCTION MEETING

A pre-construction meeting shall be held at the apparatus manufacturer's factory. Fire department personnel, dealer representative(s) and factory representative(s) shall be present during the pre-construction meeting process. The purpose of conducting this meeting at the factory is to allow the fire department personnel to see various features of or similar components on other apparatus that may be found on the production floor. The pre-construction meeting is the most important meeting during the after-sale production process. The purpose of this meeting is to finalize all aspects of the specifications, discuss and clarify all design details of the apparatus, and to share or provide all information so all parties are in agreement on the apparatus being constructed. The ultimate goal of the pre-construction meeting is for the fire department officials, dealer representative(s), and factory representative(s) to discuss and clarify all aspects of the proposed apparatus and to provide all necessary information to the apparatus manufacturer that will ensure the apparatus is built to the satisfaction of all parties involved.

The apparatus manufacturer shall create and forward to the dealer a "Pre-construction" document containing the following items:

- Complete specifications of the apparatus including the chassis
- Detailed amp draw report
- Listing of clarifications or questions from the manufacturer that require attention (shelf locations, lettering details, etc.)
- A pre-construction drawing shall be provided that encompasses all views on a single page

During this pre-construction meeting, any changes or clarifications must be documented on a manufacturer issued change order. The change order shall be signed by the customer and dealership and ultimately by the apparatus manufacturer. The change order becomes an extension of the contract with the official signatures of all three parties. All change order items resulting from the pre-construction meeting shall be implemented into the official shop order document.

Option ID:911074 **QTY:**1
Final Inspection, OEM Factory, Required

FINAL INSPECTION

The department/dealer representative will inspect the final apparatus prior to it leaving the apparatus body manufacturer's facility. This will allow any changes that may be required, to be done so in a timely manner. After leaving the facility, all repairs or alterations will be performed by either the dealer or an OEM-approved service center.

Option ID:900476 **QTY:**1
Overall Height, 128" (10'-8")

MAXIMUM OVERALL HEIGHT

The overall height of the apparatus shall not exceed 128” (10'-8”) from the ground. This measurement shall be taken with the tires properly inflated and with the apparatus in the unloaded condition to ensure a maximum overall height. In order to provide the maximum overall height, proposed units using calculated weight as a means to achieve a lower overall height shall not be accepted. The measurement shall be taken at the highest point of the apparatus.

Shop Note: Try to keep the truck under 10' 8" but we can go to 10' 10" if need be

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Option ID:900137 **QTY:**1
Overall Length, 382" (31'-10")

MAXIMUM OVERALL LENGTH

The overall length of the apparatus shall not exceed 382” (31’-10”).

Option ID:901074 **QTY:**1
Wheelbase, 178" (14'-10")

WHEELBASE

The wheelbase of the apparatus shall not exceed 178".

Option ID:900653 **QTY:**1
Angle of Approach, 8 Degrees

ANGLE OF APPROACH

The angle of approach of the apparatus shall be a minimum of 8 degrees.

Shop Note: Should be able to get 11 degrees

Option ID:900676 **QTY:**1
Angle of Departure, 10 Degrees

ANGLE OF DEPARTURE

The angle of departure of the apparatus shall be a minimum of 10 degrees.

Option ID:910014 **QTY:**1
Custom Chassis, Spartan, Metro Star

SPARTAN METRO STAR CHASSIS

The chassis shall be a Spartan Metro Star.

Option ID:UPO0048612 **QTY:**1
Exhaust Plymovent Device, Chassis Supplied, OEM Installed

EXHAUST PLYMOVENT DEVICE

The chassis supplied exhaust plymovent device shall be installed by the apparatus body manufacturer.

Option ID:001200 **QTY:**1
Mud Flaps, Front Chassis Provided, Rear OEM Provided

MUD FLAPS

In addition to the chassis supplied front mud flaps, two (2) mud flaps shall be provided rearward of the rear axles on the apparatus.

Option ID:007487 **QTY:**1
Extend Chassis Air Tank Drains, Outside of Body

EXTEND AIR TANK DRAIN CABLES

The chassis air tank drain cables shall be extended to the outside of the body for ease of maintenance.

Option ID:001379 **QTY:**1
OBSOLETEHeat Exchanger, Chassis Supplied and Installed

The chassis supplied and installed heat exchanger shall be attached to the pump by the OEM manufacturer.

Option ID:100965 **QTY:**1
Relocate Cab Tilt Pendant, Special Location

RELOCATE CAB TILT

The cab tilt pendant shall be located:(please add to the clarification note)

Shop Note: Install in compartment R1 on front wall up high.

Option ID:111567 **QTY:**1
Front Bumper Storage Well Flooring, Black Dri-Dek, (1) Storage Well

One (1) front bumper storage well shall utilize Dri-Dek interlocking squares. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

Option ID:UPO0050266 **QTY:**1
Map Console, Custom, Gray Line-x, (Redlands CA)

MAP BOX

The map box shall have two cup holders at the front of the map on the front outboard corners. A storage slot shall be installed between the cup holders. Three drop in slots shall be behind the cup holders. Slot are front to back. At the rear of the map box there shall be an open slot from left to right. A drawing shall be provided for approval. The map box shall be shipped loose.

The map box will be constructed of 0.125" aluminum and will be gray line-x.

Shop Note: See photo in P:drive. An approval drawing is to be provided to the customer. SFA needs to send LTI the final drawing so they can build the same compartment

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Option ID:911113 **QTY:**1
Map Console Location, Engine Tunnel Mounted, Drop-In

The map console shall be mounted on the engine tunnel. The map console shall be mounted upright, utilizing a "drop-in" style so the maps are accessible from the top.

Option ID:000366 **QTY:**1
Door Open Warning Circuit, Wired to Light in Cab

A hazard warning circuit shall be tied to the circuit for the "open door" warning light in the chassis in addition to the Vista display to alert the driver of an unsafe condition for moving the apparatus. The Vista display shall have a specific screen to show the displayed alert. The screen shall show the apparatus in full driver's side, officer's side and rear views. The door, component or device that is not properly closed or stowed will be shown on the screen in the appropriate view. The light shall be illuminated

automatically when the parking brake is not fully engaged and any of the following conditions exist:

- Any equipment compartment door that is not closed (excluding compartments with 4 cubic foot (0.1 cubic meter) or less of volume; or have an opening of 144 square inches (92,000 square mm) or less; or doors that do extend sideways beyond the mirrors or up above the top of the fire apparatus);
- Any ladder or equipment rack that is not in the stowed position;
- Any device or component that is permanently attached to the apparatus that is open, extended, or deployed in a manner that is likely to cause damage to the apparatus that has been specified as being tied to the hazard warning circuit.

A warning placard shall be near the warning light that reads "DO NOT Move Apparatus When Light Is On."

Option ID:110020 **QTY:**1
Mounting Plate, On Engine Tunnel, Aluminum, Bedliner Coating, Gray

ALUMINUM MOUNTING PLATE ON ENGINE TUNNEL

A 3/16" aluminum mounting plate shall be on the top of the chassis engine tunnel for the mounting of equipment. The plate shall be mounted on 3/4" spacers and will be on the flat portion of the engine tunnel only. The mounting plate shall have a gray Bedliner Coating finish.

Shop Note: SFA needs to send LTI the final drawing so they can build the same plate

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Option ID:UPO0050267 **QTY:**1
Shelves, Top of EMS Boxes, Line-X Aluminum

EMS BOX ALUMINUM SHELVES

Two (2) aluminum Line-X shelf shall be installed on top of the chassis supplied and installed EMS boxes. All shelves will have 1" lips bent upward.

The shelf on the officers side will be full width and depth of the ems box.

The shelf on the drivers side will be full width but the depth will be shorter to leave room for the chassis supplied and installed battery conditioner.

An additional shelf will be installed between the two EMS box shelves.

Shelves to be gray line-x.

Shop Note: See photo in P:drive SFA needs to send LTI the final drawing so they can build the same shelves

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Option ID:110045 **QTY:**1
Receptacle, 120V, 5-15R Household, Duplex, Wired to Shoreline

120V RECEPTACLE

One (1) NEMA 5-15R, 120-volt, duplex, 3-wire, straight blade (household type), receptacle shall be installed on the apparatus. The receptacle shall have a 15-amp rating and shall include a spring loaded weather resistant cover if mounted in an exterior location. The receptacle shall be wired to the shoreline power supply.

Option ID:UPO0048872 **QTY:**1
Outlet Location, Center Shelf Between EMS Boxes

The outlet shall be located on the center shelf between the EMS boxes. It shall be installed horizontally in the forward driver's side corner of the shelf. Outlet will face to the officers side.

Shop Note: The outlet will be mounted to the lip of the shelf

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Option ID:UPO0048615 **QTY:**1
Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel

12V POWER LEAD DROP

One (1) 12-volt power lead drop with a 6-position Blue Sea Systems ATO style fuse block with cover shall be provided. The power lead drop shall consist of one (1) hot and one (1) ground wire run from the batteries to the specified location. The power lead drop shall be wired battery direct and have a minimum of a 30 amp fuse provided with the power circuit. The distribution panel shall be designed with a grounding pad and compact, lightweight construction. The distribution panel shall be capable of using ATC/ ATO blade fuses or ATC style DC circuit breakers.

Option ID:910044 **QTY:**1
Outlet Location, Engine Tunnel, Driver's Side

The outlet shall be located inside the chassis cab, on the driver's side of the engine tunnel.
The exact location will be determined by the apparatus manufacturer, unless a specific location is clarified in the shop note.

Option ID:UPO0048616 **QTY:**1
Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel

12V POWER LEAD DROP

One (1) 12-volt power lead drop with a 6-position Blue Sea Systems ATO style fuse block with cover shall be provided. The power lead drop shall consist of one (1) hot and one (1) ground wire run from the batteries to the specified location. The power lead drop shall be wired battery direct and have a minimum of a 30 amp fuse provided with the power circuit. The distribution panel shall be designed with a grounding pad and compact, lightweight construction. The distribution panel shall be capable of using ATC/ ATO blade fuses or ATC style DC circuit breakers.

Option ID:910045 **QTY:**1
Outlet Location, Engine Tunnel, Officer's Side

The outlet shall be located inside the chassis cab, on the officer's side of the engine tunnel.
The exact location will be determined by the apparatus manufacturer, unless a specific location is clarified in the shop note.

Option ID:110103 **QTY:**1
Water Tank, UPF, 500 U.S. Gallons

WATER TANK

The apparatus shall be equipped with a United Plastic Fabricating (UPF) 500 U.S. gallon water tank. Certification of the tank capacity shall be recorded on the manufacturer's record of construction and shall be provided to the purchaser upon delivery of the apparatus. The water tank shall be constructed of polypropylene sheet stock, a non-corrosive stress relieved thermoplastic material, black in color, and UV-stabilized for maximum protection. The tank shall be of a specific configuration and shall be designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the tank shall be fitted with removable lifting eyes designed with a 3:1 safety factor to facilitate easy removal.

TANK BAFFLES

The swash partitions shall be manufactured of natural color 3/8" PT2E polypropylene, with the transverse partitions extending from approximately 4" off the floor to just under the cover and the longitudinal partitions extending to the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow, interlock with one another, and be welded to each other and the walls of the tank.

TANK SUMP

One (1) sump shall be provided in the bottom of the water tank, constructed of polypropylene, and located in the drivers side front quarter of the tank. Tanks requiring a front suction shall incorporate a 4" schedule 40 polypropylene pipe with a dip tube from the front of the tank to the sump location. The sump shall be used as a combination clean-out and drain. An anti-swirl plate shall be located approximately 2" above the sump.

TANK FILL CONNECTION

All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and shall be capable of withstanding sustained fill rates of up to 1,000 GPM.

TANK LID

The tank lid shall be constructed of polypropylene and incorporate a three-piece locking

design allowing for individual removal and inspection if necessary. The tank lid shall be recessed 3/8" from the top of the tank and welded to the sides and the longitudinal partitions for maximum integrity. The lid shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers, ensuring the covers remain rigid under fast filling conditions. A minimum of two lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.

Option ID:910157 **QTY:**1
Water Tank Mounting, Pumpers

WATER TANK MOUNTING

The water tank cradle shall be an integral part of the body subframe and allow the tank to rest on the subframe cross members spaced as required by the tank manufacturer.

The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum Rockwell hardness of 60 durometers. The tank shall be supported around the entire perimeter and captured front and rear as well as side to side to prevent the tank from shifting during vehicle operations.

Although the tank shall be designed on a free floating suspension principle, it shall be required that the tank have adequate hold down restraints to minimize movement during vehicle operations.

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

Option ID:000350 **QTY:**1
Water Tank Drain, 1-1/2" Valve, Pumpers

WATER TANK DRAIN

A 1-1/2" drain valve shall be provided under the sump of the water tank. The valve shall include a locking lever to prevent accidental draining of the water tank.

Option ID:910160 **QTY:**1
Water Tank Fill Tower, UPF, Black

WATER TANK FILL TOWER

The tank shall have a combination vent and manual fill tower, marked "Water Fill", located at the driver’s side front corner of the tank. The fill tower shall be constructed of black 1/2" PT2E polypropylene and be a minimum dimension of 8" x 8" at the outer perimeter. The tower shall have a 1/4" thick removable polypropylene screen and a PT2E polypropylene hinged-type cover.

Option ID:010072 **QTY:**1
Water Tank Level Gauge, FRC Tankvision Pro 300 (WLA300-A00), Pump Operator's Panel, Slave in Cab (WLA205-A00)

WATER TANK LEVEL GAUGE

One (1) Fire Research, model WLA300-A00, TankVision Pro 300 water tank level gauge shall be provided on the pump operator's control panel.

The gauge shall have nine (9) easy to see super bright RGB LEDs to show the tank volume. The display shall use a two-dimensional, two-element lens to refract the light from the LEDs to provide full 180° visibility for the level indication. The gauge shall start to flash when the tank volume is at 1/4 tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.

WATER TANK LEVEL GAUGE IN CAB

One (1) remote mounted Fire Research, model WLA205-A00, mini TankVision water tank level gauge shall be provided in the chassis cab. The additional water tank level gauge shall be connected to the master water tank gauge on the pump panel.

Shop Note: Slave will be in the spare rocker switch slot in the center dash panel

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Option ID:008171 **QTY:**1
Water Tank Level Display, Chassis Supplied 4-Light, Cab Sides, OEM Supplied and Installed FRC Driver

WATER TANK LEVEL DISPLAYS

Two (2) sets of 4-light LED water level displays shall be provided, one (1) mounted on the driver's side of the chassis cab and one (1) mounted on the officer's sides of the chassis cab.

A Fire Research driver module shall be provided to power the four (4) light displays. The module shall receive data from the master water tank level gauge and mimic the master display.

The color of the LED lights shall be green, blue, amber and red.

Option ID:004096 **QTY:**1
Water Tank Overflow, UPF, 6", Pumpers w/o EHL

6" WATER TANK OVERFLOW

The tank shall be equipped with a minimum of a 6" schedule 40 polypropylene overflow/ air vent pipe installed in the fill tower extending through the tank and dumping behind the rear axle.

Option ID:UPO0050480 **QTY:**1
Cover, Above Tank Towers, Tread Plate

TREADPLATE COVER

A hinged cover shall be provided over the area above the water and foam tank towers . The cover shall be constructed from anti-slip tread plate material, have push pop latches

with gas springs to hold the cover open. The cover shall be tied into the door open circuit.

Shop Note: The cover will be installed rearward of the dunnage area enclosing the deckgun. Tank towers will be under the cover

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Option ID:000251 **QTY:**1
Foam Cell, UPF, 20 U.S. Gallon

FOAM CELL

One (1) United Plastic Fabricating (UPF) 20 U.S. gallon foam cell shall be incorporated into the water tank. One (1) pressure/vacuum vent shall be installed and one (1) drain hose shall be connected to the foam cell. The drain shall have a quarter-turn valve installed inside the pump compartment and it shall drain below the frame rail of the chassis.

Shop Note: Foam tank drain to have a 1" FNST x 1" Female Pipe Thread. The hose and fitting will terminate under the pumphouse.

Option ID:910172 **QTY:**1
Foam Cell Type, Class A

The foam cell shall be designed for use with Class "A" foam.

Option ID:910169 **QTY:**1
Foam Cell Fill Tower, UPF, Black

The foam cell shall have a manual fill tower constructed of 1/2" PT3 polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The foam fill tower shall be black in color, indicating the type of foam to be utilized and located on the officer’s side front corner of the water tank. The capacity of the cell shall be engraved on the top of the fill tower lid. The tower shall have a 1/4" thick removable polypropylene screen and a stainless steel hinged-type cover. Inside the fill tower, approximately 1.5” down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the cell. A pressure vacuum vent shall be provided in the lid of the fill tower.

Option ID:003110 **QTY:**1
Foam Cell Level Gauge, FRC Tankvision Pro 300, WLA360-A00, Class A Foam

FOAM CELL LEVEL GAUGE

One (1) Fire Research, model WLA360-A00, TankVision Pro 300 foam tank level gauge shall be provided on the pump operator's control panel.

The gauge shall have nine (9) super bright RGB LEDs to show the tank volume. The display shall use a two-dimensional, two-element lens to refract the light from the LEDs to provide full 180° visibility for the level indication. The gauge shall use a pressure transducer installed near the bottom of the foam tank to determine the correct volume in the tank. The gauge shall be self-calibrating by filling the tank at a steady flow rate. Self-diagnostics capabilities shall be standard on the gauge. The gauge shall start to flash

when the tank volume is at 1/4 tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.

The gauge shall have a label that indicates it is for the foam cell that contains Class "A" foam.

Option ID:010052 **QTY:**1
Direct Tank Fill, 2-1/2", Officer's Side Rear, Akron 8825 Valve, TSC Handle, FNH Swivel

2-1/2” REAR DIRECT TANK FILL

One (1) 2-1/2" direct tank fill shall be located on the officer's side rear of the apparatus.

The tank fill shall be equipped with an Akron Brass, model 8825, 2-1/2" Swing-Out valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be actuated by an Akron Brass, model TSC, manual actuator installed directly on the valve allowing the operator to control the valve at the tank fill connection. A flange shall be mounted to the rear face of the valve body that shall extend out and down at a 30 degree angle. The flange shall terminate in a female NH swivel and include a strainer.

There shall be a 3/4" Male NPT bleeder valve on the underside of the valve body to provide relief on pressurized lines.

Option ID:010060 **QTY:**1
Direct Tank Fill Fittings, Plug with Chain 2-1/2" NH (HPC3008AC), South Park, Chrome

One (1) 2-1/2" NH thread rocker lug chrome plated vented plug, complete with cable or chain, shall be provided.

Option ID:110129 **QTY:**1
OBSOLETEHose Bed, Aluminum, Standard, Abraded Finish, (2) 9" On-Scene Night Axe Lights

HOSE BED

The hose bed shall be located above the water tank. The inside of the hose bed shall be constructed of smooth aluminum. Hose shall be accessible from the rear, and the opening shall be free of obstructions that might interfere with the deployment and loading of hose. A 1" stainless steel body trim piece shall be at the rear-bottom of the hose bed, to protect the chevron striping when deploying hose.

The interior of the hose bed shall have an abraded aluminum finish.

The floor of the hose bed shall be constructed of Dura-Dek fiber reinforced plastic material to prevent the accumulation of water and to allow ventilation to aid in drying hose. The flooring shall be fabricated of "T" beam pultrusions in parallel connected with cross slats that are first mechanically bonded and then epoxied, forming a large sheet. The top portion of each "T" cross section shall measure 1-1/4" wide and 3/16" thick with beaded ends. The vertical portion shall be 3/8" thick, beading out at the bottom to a thickness of 1/2" and tall enough to result in an overall height of 1". The "T" sections

shall be spaced 3/4" apart to allow for drainage and ventilation.

Each "T" beam shall be constructed utilizing a core of 250,000 continuous glass fiber strands that are high in resistance to tension, compression and bending. An outer sheath consisting of a continuous strand mat to prevent linear splitting and slipping shall surround the core. The sheath shall also serve to draw the protective resin to the bar surface. Both reinforcements shall be pulled through an isophthalic polyester resin, treated with antimony trioxide for fire resistance, to form a solid length.

The flooring shall then be protected with a polyurethane coating to screen out ultraviolet rays. The bright white coating shall be baked on.

There shall be (2) 9" On-Scene Night Axe lights with housings in the hosebed area to provide adequate lighting to meet requirements. The lights will be activated when the park brake is set.

The hose bed shall contain the following hose load:

Option ID:910379 **QTY:**1
Hose Load, Double-Jacket Hose, 200' of 1-3/4"

The Hose Bed shall have a capacity of 200' of 1-3/4" double jacket hose.

All hose load calculations are estimated using Snap-Tite standard hose.

Shop Note: These are (2) 100' 1 3/4" Hi Rise Packs

Option ID:910381 **QTY:**1
Hose Load, Double-Jacket Hose, 200' of 2-1/2"

The Hose Bed shall have a capacity of 200' of 2-1/2" double jacket hose.

All hose load calculations are estimated using Snap-Tite standard hose.

Shop Note: Single stack

Option ID:910419 **QTY:**1
Hose Load, Double-Jacket Hose, 1000' of 2-1/2"

The Hose Bed shall have a capacity of 1000' of 2-1/2" double jacket hose.

All hose load calculations are estimated using Snap-Tite standard hose.

Shop Note: triple stack

Option ID:910421 **QTY:**1
Hose Load, Double-Jacket Hose, 1000' of 4"

The Hose Bed shall have a capacity of 1000' of 4" double jacket hose.

All hose load calculations are estimated using Snap-Tite standard hose.

Shop Note: triple stack

Option ID:009340 **QTY:**1
Hose Bed Doors, Tread Plate, Power Operated, Independent, On-Scene Night Axe 36" LED Lighting (2)

POWER OPERATED HOSE BED DOORS

The hose bed storage area shall be covered with two (2) hinged aluminum doors. The doors shall be hinged on the outside edges, utilizing full-length stainless steel piano hinges. The doors shall lift up and out towards the outside of the body. The doors shall be fabricated with 14 gauge aluminum inner panel for superior strength. The outside sheet shall be constructed of anti-slip tread plate.

The hose bed doors shall be power-operated utilizing a self-contained hydraulic system. The pressure of the hydraulic system shall be factory set to a pressure that will smoothly power the doors upward and downward. The system shall be designed to keep the doors firmly open, without the requirements of mechanical safety locks, when reloading hose as well as to secure the doors firmly in the travel position.

The hydraulic cylinders shall be located at the front of the hose bed and shall only allow movement of one (1) door at a time. The cylinders, when the doors are in the closed position, shall lower into a separate compartment from the stored hose to ensure unobstructed hose deployment operations. The cylinder pins attached to the doors shall be designed to be removable with the doors in the closed position without having to climb inside the hose storage area.

Self-contained switches shall be utilized to raise and lower the cover doors independently. The switches shall be located at the rear of the apparatus in a convenient location allowing the operator to view the hose bed cover doors while operating the mechanism from ground level. The switches shall be the momentary type that requires the operator to hold the switch until the desired movement of the cover doors is achieved.

The power unit shall be interlocked with the parking brake and shall only be operable when the parking brake is applied. The doors shall be connected to the open door warning system. An audible alarm shall be located towards the front of the hose bed area designed to warn personnel that door movement is occurring.

HOSE BED COVER LIGHTING

Hose bed lighting shall be provided by two (2) 36” On Scene Night Axe LED lights recessed in the inside of the hose bed cover doors, one (1) in each door. The lights shall be enclosed within a tough waterproof Lexan tube enclosure. Night Axe shall offer 200 lumens per 18 inches of light and an adjustable beam angle. The lights shall be activated when the doors are opened.

Shop Note: Use cast products switch box for switches

Option ID:100004 **QTY:**1

Hose Bed Rear Restraint, Vinyl, Top C-Rail, Bottom Footman Loop / J-Hook, Black

A heavy-duty restraint shall be located on the end of the hose bed. The top of the restraint shall be connected to the tread plate hose bed cover through a C-Rail channel. The bottom of the restraint shall be connected using footman loop and J-Hooks with an adjustable buckle. The restraint color shall be black.

Option ID:009343 **QTY:**1
Hose Bed Dividers (3), 1/4" Alum., Adjustable, Abraded

HOSE BED DIVIDERS

Three (3) hose bed dividers, fabricated from 1/4" smooth aluminum plate and an aluminum extrusion, shall be installed in the hose bed. Each divider shall have an abraded finish and shall be mounted on hot-dipped galvanized slide rails at the front and rear of the hose bed. The slide rails shall allow full movement of the dividers along the width of the hose bed where no obstructions, such as fill towers, are present. Each divider shall have an oval-shaped handhold slot to assist in relocating the divider.

Option ID:901233 **QTY:**1
NO Hose Bed Loading Lights

No hose bed loading lights shall be installed on this unit.

Option ID:002630 **QTY:**1
Body, 100" Wide, Custom Pumper, Single-Axle, Aluminum, 1/8"

ALUMINUM BODY CONSTRUCTION

The apparatus body shall be fabricated from 1/8" 5052-H32, smooth aluminum sheet. The total outside width of the apparatus body shall not exceed 100 inches. The width measurement of the sidewalls shall be made from the outside wall of the two opposite sides of the body. The body shall be designed for a single axle chassis.

The complete apparatus body shall be fabricated utilizing the break and bend techniques in order to form a strong, yet flexible, uni-body structure. The body shall be constructed with holding fixtures to ensure proper dimensioning. Each apparatus body is specific in design in order to meet the unique requirements of the purchasing fire department.

The main body compartments on each side, as well as the rear center compartment if applicable, shall contain a sweep out floor design. Each compartment shall be made to the most practical dimensions in order to provide maximum storage capacity for the fire department's equipment. The door opening threshold shall be positioned lower than the compartment floor permitting easy cleaning of the compartments.

Continuous, solid welded seams shall be located at the upper front and upper rear corners of the apparatus body. The flooring of all lower, main body compartmentation shall also have solid weld seams. All door jambs, on both the top and the bottom, shall be solid welded as well. Each main door jamb shall consist of a double jam design; this is comparable to a double struck frame design, which provides superior strength and durability. All double door jams are to be welded together utilizing the plug weld

technique. All remaining compartment walls shall be stitch welded.

The compartment floors, specifically L1 and R1, shall have a minimum of two (2) 2" x 1/4" angles welded to the entire width of the compartment floor. The two (2) rear side compartments as well as the rear center compartment, if applicable, shall be welded to the rear deck support structure. This rear deck support structure is specially designed for the galvanized apparatus body substructure. A minimum of two (2) angles, which are 1/4" x 3" x 3", shall run the entire width of the body from sidewall to sidewall. Each lower, rear compartment shall be adequately stitch welded to the cross angles providing strength and durability to the entire apparatus body.

The body design shall include a "false wall" design in the lower portion of each lower, rear compartment. This "false wall" is required in order to allow for easy accessibility to the rear electrical components found in the rear tail light cluster area.

On the upper area of the apparatus body, directly above the side compartment door openings, a header is to be fabricated from smooth, aluminum sheet. This area shall be free of body seams and shall be painted the same color as the apparatus body. The height of the header may vary depending on the following factors: apparatus design, lettering requirements, scene lights and warning light requirements as well as various other options. A "J" channel shall be incorporated into the body design in order to provide a rain gutter to further assist in preventing excessive moisture from getting into the compartments.

Option ID:120861 **QTY:**1
Side Compartment Doors, Roll-Up Doors, ROM, Painted Doors and Trim (6)

SIDE COMPARTMENT DOORS

ROM roll-up doors shall be installed on each side body compartment, six (6) total. Each door shall be a shutter type with slats that roll onto a spool at the top of the compartment. Each slat shall be equipped with nylon end shoes to assure operation without the need for constant lubrication. The door slats and tracks shall be wet painted by the door manufacturer to match the apparatus body.

Each ROM roll-up door shall be supplied with a full-width lift bar and finger pull handle integrated into the bottom rail for easy one hand operation.

Option ID:UPOxxxxxxx **QTY:**1
Compartment Door Handles, Roll-up Doors, All Locking, Offset Lock (5) Power locking R3 compartment

Compartment Door Handles, Roll-up Doors, All Locking, Offset Lock (5) Power locking R3 compartment

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Option ID:UPO0049501 **QTY:**1
Rear Compartment Door, Double, Painted Lap Door, Manual Locking

REAR COMPARTMENT DOOR

One (1) vertically hinged lap type compartment double door shall be installed on the T1

compartment face. The lap door shall be a double panel construction with the outer panel fabricated of .190" 3003-H14 aluminum and the inner panel of .125" 3003-H14 aluminum. Rubber molding shall be installed in the overlap area of the door to ensure a weatherproof seal and prevent water from collecting in the door sills. Weep holes shall be installed at the bottom of the doors to drain moisture from between the door panels. The compartment door shall have a polished stainless steel continuous hinge with a rubber seal installed between the hinge and the aluminum door to separate the dissimilar metals. The hinge pin shall be stainless steel with a minimum diameter of 1/4".

The compartment door handle shall be a stainless steel recessed locking "D" ring type handle. There shall be a safety latch with a striker plate included with the door handle assembly.

A Cleveland-style spring loaded door holder shall be furnished on the vertically hinged compartment door to hold the door in either the fully open or partially closed position. The spring-loaded door holder shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released. On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened.

Option ID:901195 **QTY:**1
Inner Door Face, (1) Rear Door, Painted Main Body Color

The inner door face shall be painted the primary body color. The panels shall have a grade "B" paint finish, therefore it will not be buffed and may be subject to imperfections.

Option ID:121079 **QTY:**1
Compartment Lighting, On-Scene, Access Series LED (14)

BODY COMPARTMENT LIGHTING

A total of fourteen (14) On-Scene Access Series LED compartment lights shall be installed in the body compartments. Each light shall be enclosed within a tough waterproof Lexan tube enclosure and offer 400 lumens per 18" of light and an adjustable beam angle. The lights shall have a five (5) year replacement warranty.

Option ID:000934 **QTY:**1
Compartment Finish, Bedliner Coating, Gray

COMPARTMENT COATING

The interior of the body compartments shall be coated with gray Bedliner Coating unless otherwise specified. The coating shall be durable enough to withstand the everyday wear and tear of equipment removal and shifting.

Option ID:000474 **QTY:**1
Air Release and Drain Holes, All Compartments

COMPARTMENT AIR RELEASE

Each compartment shall be vented to help remove trapped air when closing the

compartment door. The vent shall be a rubber gasket in the area of the outboard corners of the compartment. Wiring may also be run through these areas.

COMPARTMENT DRAIN HOLES

Each body compartment shall be equipped with drain holes to allow standing water to exit underneath the apparatus.

Option ID:000440 **QTY:**1
Sill Protectors, Anodized Aluminum Side Lap Doors, SST Rear Lap Door Compartments

SILL PROTECTORS

An anodized aluminum angle sill protector shall be installed on the bottom sill area of the side compartments with lap style doors to aid in reducing paint damage from equipment.

A stainless steel angle sill protector shall be installed on the bottom sill of the rear compartment. The sill protectors shall be attached using permanent-bonding double-sided tape.

Shop Note: Roll up door has painted sill

Option ID:900966 **QTY:**1
Fuel Fill, Included with Triangle Air Bottle Compartment, Driver's Side

FUEL FILL

The fuel fill pocket shall be located in the rear triangular shaped SCBA air bottle compartment on the driver's side of the apparatus. The cap of the fuel fill shall be a click-type plastic cap with lanyard. The interior of the compartment will be divided into individual storage areas to accommodate air bottle(s) and shall house the fuel fill.

Fuel Tank Vent Line

The fuel fill vent line shall be attached to the hose barb using a hose clamp.

Option ID:901151 **QTY:**1
Wheel Well Storage Design, Single Axle, Standard

STANDARD WHEEL WELL STORAGE

The wheel well area of the apparatus shall be designed to additional components.

Option ID:120709 **QTY:**1
Driver's (Left) Body Style, Single Axle, L1 Full, L2 Upper, L3 Full

DRIVER'S (LEFT) SIDE BODY COMPARTMENTS

COMPARTMENT L1
A full height compartment shall be located ahead of the rear wheels on the driver's side

of the apparatus body. This compartment shall be designated as L1 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 58"
- Width: 41"
- Depth: 26" Upper and 26" Lower
- Intermediate Divide Height: "

COMPARTMENT L2
A standard height compartment shall be located above the rear wheels on the driver's side of the apparatus body. This compartment shall be designated as L2 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 31"
- Width: 62"
- Depth: 25" Upper and 25" Lower
- Intermediate Divide Height: "

COMPARTMENT L3
A full height compartment shall be located behind the rear wheels on the driver's side of the apparatus body. This compartment shall be designated as L3 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 63"
- Width: 46"
- Depth: 25" Upper and 25" Lower
- Intermediate Divide Height: "

Option ID:L1 **QTY:**1
L1 Components

L1 Components

Option ID:UPO0038502 **QTY:**1
Painted ROM Roll-Up Door

Painted ROM Roll-Up Door

Option ID:002745 **QTY:**1
Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating

ADJUSTABLE SHELF

One (1) aluminum adjustable full-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf shall be coated with Bedliner Coating and shall be designed in such a manner that will

allow liquids to readily drain.

Shop Note: Behind Vertical Divide

Option ID:002500 **QTY:**1
Tray (1), Adjustable-Height Roll Out, Austin Hardware, 300#, 100% Extension, Bedliner Coating, With Front Drawer Release

ADJUSTABLE ROLL OUT TRAY

One (1) roll out equipment tray shall be installed in the compartment. The tray shall be equipped with an Austin Hardware drawer slide. The roller assembly shall have a rated capacity of 300 lbs. distributed load and shall have 100% extension capability. The roller assembly shall be bolted to two (2) sets of vertical struts to allow for height adjustment of the tray. The tray shall be constructed of 3/16" aluminum sheet with 3" lips. The tray shall be coated with Bedliner Coating and shall be equipped with a locking slide in order to hold the tray in either a fully extended or closed position. The tray shall be equipped with the Austin Hardware front drawer release system which allows for one handed operation of the system.

Shop Note: To rear of vertical divide

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Option ID:000471 **QTY:**1
Vertical Partition, Bolt-In, Full Height

VERTICAL PARTITION

One (1) bolt-in vertical partition shall be installed in the full height compartment. The partition finish shall match the compartment interior.

Shop Note: To the rear of the pump controls

Option ID:L2 **QTY:**1
L2 Components

L2 Components

Option ID:UPO0048622 **QTY:**1
Lap Door Hinge, Double Vertically Hinged

Lap Door Hinge, Double Vertically Hinged

Shop Note: D-rings will be in a low position for easier reach. Do not use a chain for the secondary door. Use secondary door latch

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Option ID:002745 **QTY:**1
Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating

ADJUSTABLE SHELF

One (1) aluminum adjustable full-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf shall be coated with Bedliner Coating and shall be designed in such a manner that will allow liquids to readily drain.

Shop Note: locate to rear of partition

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Shop Note: located on the partition and the rear sidewall of the compartment

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Option ID:006176 **QTY:**1
Partition, Vertical, Bolt-In, Standard Height Compartment

One (1) bolt-in vertical partition shall be installed in the standard height compartment. The partition shall match the compartment interior.

Shop Note: Partition to be installed 24" from the usable front door opening

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Option ID:L3 **QTY:**1
L3 Components

L3 Components

Option ID:002745 **QTY:**1
Shelf (1), Adjustable, Aluminum, Full Depth (4 Struts), Bedliner Coating

ADJUSTABLE SHELF

One (1) aluminum adjustable full-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf shall be coated with Bedliner Coating and shall be designed in such a manner that will allow liquids to readily drain.

Option ID:002749 **QTY:**1

Shelf (1), Permanent, Aluminum, Full Depth, Matching Compartment Finish

PERMANENT SHELF

One (1) aluminum permanent full-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf finish shall match the compartment interior finish coating and shall be designed in such a manner as to allow liquids to readily drain.

Shop Note: The fixed shelf shall be installed 26" from the pan of the roll out tray to the bottom of the fixed shelf

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Option ID:002502 **QTY:**1
Tray (1), Floor-Mounted Roll Out, Austin Hardware, 300#, 100% Extension, Bedliner Coating, With Front Drawer Release

FLOOR MOUNTED ROLL OUT TRAY

One (1) roll out equipment tray shall be installed on the floor of the compartment. The tray shall be equipped with an Austin Hardware drawer slide. The roller assembly shall have a rated capacity of 300 lbs. distributed load and shall have 100% extension capability. The tray shall be constructed of 3/16" aluminum sheet with 3" lips. The tray shall be coated with a bedliner finish and shall be equipped with a locking slide in order to hold the tray in either a fully extended or closed position. The tray shall be equipped with the Austin Hardware front drawer release system which allows for one handed operation of the system.

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Shop Note: Struts installed on back side of vertical partition and rear side wall of L3 above the fixed shelf

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Option ID:006176 **QTY:**1
Partition, Vertical, Bolt-In, Standard Height Compartment

One (1) bolt-in vertical partition shall be installed in the standard height compartment. The partition shall match the compartment interior.

Shop Note: The partition shall be 15" from the front door opening to the partition. Partition to be installed on the fixed shelf. Partition to be designed to as tall as practical

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Option ID:009390 **QTY:**1
WL1, Air Bottle Compartment, OEM Polished SS Door, Triple (Triangle)

DRIVER'S SIDE REAR WHEEL WELL POSITION - WL1

A three (3) air bottle compartment shall be installed in the forward portion of the rear wheel well area, on the driver's side. The compartment shall be a triangle design. The compartment door, flange, and hinges shall be constructed of stainless steel material. The door shall have a rubber gasket to create a 100% seal to protect the interior of the compartment. The storage compartment shall be a molded component that is assembled to the door and flange. The door shall have a polished stainless steel finish.

Shop Note: Utilize the round type pull latches

Option ID:009413 **QTY:**1
WL3, Air Bottle Compartment with Fuel Fill, OEM Polished SS Door, Double (Triangle)

DRIVER'S SIDE REAR WHEEL WELL POSITION - WL3

A two (2) air bottle compartment shall be installed in the rearward portion of the rear wheel well area, on the driver's side. The compartment shall be a triangle design.The compartment door, flange, and hinges shall be constructed of stainless steel material. The door shall have a rubber gasket to create a 100% seal to protect the interior of the compartment. The storage compartment shall be a molded component that is assembled to the door and flange. The door shall have a polished stainless steel finish.

Shop Note: Utilize the round type pull latches

Option ID:120727 **QTY:**1
Officer's (Right) Body Style, Single Axle, R1 Full, R2 Upper, R3 Full

OFFICER'S (RIGHT) SIDE BODY COMPARTMENTS

COMPARTMENT R1
A full height compartment shall be located ahead of the rear wheels on the officer's side of the apparatus body. This compartment shall be designated as R1 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 63"
- Width: 44"
- Depth: 14" Upper and 25" Lower
- Intermediate Divide Height: 27"

COMPARTMENT R2
A standard height compartment shall be located above the rear wheels on the officer's side of the apparatus body. This compartment shall be designated as R2 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 31"
- Width: 62"
- Depth: 14" Upper and 14" Lower
- Intermediate Divide Height: "

COMPARTMENT R3
A full height compartment shall be located behind the rear wheels on the officer's side of the apparatus body. This compartment shall be designated as R3 within these specifications and any ensuing paperwork or drawings after contract execution.

The dimensions of the compartment shall be:

- Height: 63"
- Width: 48"
- Depth: 14" Upper and 25" Lower
- Intermediate Divide Height: 27"

Option ID:R1 **QTY:**1
R1 Components

R1 Components

Option ID:002748 **QTY:**1
Shelf (1), Permanent, Aluminum, Shallow Depth, Matching Compartment Finish

PERMANENT SHELF

One (1) aluminum permanent shallow-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf finish shall match the compartment interior finish coating and shall be designed in such a manner as to allow liquids to readily drain.

Shop Note: Installed at intermediate divide height

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Option ID:006176 **QTY:**1
Partition, Vertical, Bolt-In, Standard Height Compartment

One (1) bolt-in vertical partition shall be installed in the standard height compartment. The partition shall match the compartment interior.

Shop Note: Center in opening below the fixed shelf

Option ID:R2 **QTY:**1
R2 Components

R2 Components

Option ID:UPO0048623 **QTY:**1
Lap Door Hinge, Double Vertically Hinged

Lap Door Hinge, Double Vertically Hinged

Shop Note: D-rings will be in a low position for easier reach. Do not use a chain for the secondary door. Use secondary door latch

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Option ID:002743 **QTY:**1
Shelf (1), Adjustable, Aluminum, Shallow Depth (2 Struts), Bedliner Coating

ADJUSTABLE SHELF

One (1) aluminum adjustable shallow-depth shelf shall be installed in the compartment. The shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelf shall be coated with Bedliner Coating and shall be designed in such a manner that will allow liquids to readily drain.

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Option ID:R3 **QTY:**1
R3 Components

R3 Components

Option ID:120304 **QTY:**1
Shelves (2), Adjustable, Aluminum, Shallow Depth (2 Struts), Bedliner Coating

ADJUSTABLE SHELVES

Two (2) aluminum adjustable shallow-depth shelves shall be installed in the compartment. Each shelf shall be constructed of 3/16" aluminum sheet with a minimum of 2" lips. The shelves shall be coated with Bedliner Coating and shall be designed in such a manner as to allow liquids to readily drain.

Option ID:120785 **QTY:**1
Compartment Struts, Vertical, Welded Aluminum

COMPARTMENT STRUTS

Aluminum vertical strut channels shall be welded in the compartment. Two (2) struts shall be provided for any full depth portion and one (1) strut shall be provided for any shallow depth portion.

Option ID:UPO0049104 **QTY:**1
WR1, Extinguisher/Water Can Compartment, OEM Polished SS Door, Double, Triangle Door (Up to 9" Diameter)

DRIVER'S SIDE REAR WHEEL WELL POSITION - WR1

A double extinguisher/water can compartment shall be installed in the forward portion of the rear wheel well area, on the driver's side. The compartment shall be large enough to hold two (2) extinguisher/water cans up to 9" in diameter, with sufficient space for the discharge tube. The compartment door, flange, and hinges shall be constructed of stainless steel material. The door shall have a rubber gasket to create a 100% seal to protect the interior of the compartment. The storage compartment shall be fabricated out of aluminum. The door shall have a polished stainless steel finish.

Shop Note: Utilize the round type pull latches

Option ID:009451 **QTY:**1
WR3, Air Bottle Compartment, OEM Polished SS Door, Triple (Triangle) 8"

OFFICER'S SIDE REAR WHEEL WELL POSITION - WR3

A three (3) air bottle compartment shall be installed in the rearward portion of the rear wheel well area, on the officer's side. The compartment shall be a triangle design. The compartment door, flange, and hinges shall be constructed of stainless steel material. The door shall have a rubber gasket to create a 100% seal to protect the interior of the compartment. The storage compartment shall be a molded component that is assembled to the door and flange. The door shall have a polished stainless steel finish.

Option ID:UPO0048874 **QTY:**1
Rear Body Style, Flat Back, Standard Hose Bed, One Compartment

Rear Body Style, Flat Back, Standard Hose Bed, One Compartment

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Option ID:T1 **QTY:**1
T1 Components

T1 Components

Option ID: Cmpt. Layout **QTY:**1
Compartment depth is to be 26-1/2" deep

Compartment depth is to be 26-1/2" deep

Option ID:005119 **QTY:**1

Sub-Frame, GS-36, Hot-Dip Galvanized, Custom Pumpers, Aluminum and Galvaneal Bodies

GS-36 GALVANIZED STEEL BODY SUB FRAME

To assure proper body alignment and clearance, the body sub frame shall be constructed in a jig and fitted directly on the chassis. The sub frame shall be constructed of 36,000 PSI galvanized steel.

The chassis frame rails shall be fitted with fiber reinforced rubber to isolate the body frame members from direct contact with chassis frame rails.

The main body sub frame shall be constructed from steel tubing. The sub frame shall run the full length of the body and shall be spaced the same width as the chassis frame rails. The main sub frame shall also be the integral support for the water tank. Vertical drop tubes shall be welded to the sub frame. From these vertical drop tubes shall extend cross members constructed of steel angle. These cross members shall extend out to support the compartments. Cross members shall be located at the front and rear of the body and in front and rear of the wheel well opening.

A drop frame, fabricated of steel tube and steel angles, shall support the compartment area behind the rear. The rear drop frame shall be constructed using vertical drop tubes, welded to the main sub frame. All drop frame structures shall be welded directly to the body sub frame to allow the body to be a completely separate structure from the chassis.

After fabrication the sub frame shall be hot dip galvanized for maximum protection against corrosion.

BODY MOUNTING

The body sub frame shall be fastened to the chassis frame with a minimum of two (2) spring loaded body mounts. Each mount shall be configured using a two-piece bracket. The two (2) brackets shall be fabricated of steel plates. The plates shall be galvanized to prevent any corrosion. Each mounting assembly shall utilize two (2) plated bolts and a heavy duty spring. The assembly design shall allow the body and sub frame to act as one (1) component, separate from the chassis. As the chassis frame twists under driving conditions, the spring mounting system shall limit any stress from being transferred into the body. The spring loaded body mounts shall also prevent frame side rail or body damage caused by unevenly distributed stress and strains due to load and chassis movement.

Body mountings that do not allow relief from chassis movement shall not be acceptable.

TANK MOUNTING

The water tank shall rest on the sub frame cross members which are spaced as required by the tank manufacturer.

The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum Rockwell hardness of 60 durometer. Additionally, the tank shall be supported around the entire perimeter and captured front and rear as well as side to side to prevent the tank from shifting during vehicle operations.

Although the tank shall be designed on a free floating suspension principle, it shall be required that the tank have adequate hold down restrains to minimize movement during vehicle operations.

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

Option ID:UPO0048875 **QTY:**1
Hatch Compartment, Driver's Side, 2-Door, Centered Bulkhead, On-Scene Access LED Lighting

DRIVER'S SIDE HATCH COMPARTMENTS WITH REAR LANDING

There shall be a hatch compartment located on top of the driver's side compartments. The compartment shall be constructed as an integral part of the apparatus body. There shall be bulkhead centered in the hatch compartment, separating the full-length compartment into two (2) separate compartments, one (1) forward and one (1) rearward.

There shall be two (2) independent tread plate doors covering the compartment. Each compartments door handle shall be non-locking stainless steel recessed "D" ring type handle. There shall be a safety latch with striker-plate included with each door handle assembly. Gas props shall be utilized to aid in opening and to hold the door in the open position.

Lighting shall be provided by two (2) 36" LED On Scene Access Series lights installed on the upper inside portion of the compartments, one (1) per door. The lighting shall be enclosed within a tough waterproof Lexan tube enclosure. The lights shall activate when the door is opened.
The rearward portion of the upper shall be shortened to allow for a step landing. The landing shall be recessed into the top of the body and allow the department to reach the top of the body more safely.

Shop Note: Each hatch compartment shall have an opening of 18" wide x 70" long and a usable depth of 17". The rear hatch shall be shortened to create a landing area at the top of the rear hosebed access ladder

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Option ID:120758 **QTY:**1
Hatch Compartment Flooring, Driver's Side, Black Dri-Dek, (2) Hatch Sections

Two (2) driver's side hatch compartment sections shall utilize Dri-Dek interlocking squares. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

Option ID:009194 **QTY:**1
Hatch Compartment, Officer's Side, 2-Door, Centered Bulkhead, On-Scene Access LED Lighting

OFFICER'S SIDE HATCH COMPARTMENTS

A hatch compartment shall be located on top of the officer's side compartments. The compartment shall be constructed as an integral part of the apparatus body. A bulkhead

shall be centered in the hatch compartment, separating the full-length compartment into two (2) separate compartments, one (1) forward and one (1) rearward.

Two (2) independent tread plate doors shall be covering the compartment. Each compartments door handle shall be non-locking stainless steel recessed "D" ring type handle. A safety latch with striker plate shall be included with each door handle assembly. Gas props shall be utilized to aid in opening and to hold the door in the open position.

Lighting shall be provided by two (2) 36" LED On Scene Access Series lights installed on the upper inside portion of the compartments, one (1) per door. The lighting shall be enclosed within a tough waterproof Lexan tube enclosure. Night Axe lights shall offer 400 lumens per 18 inches of light and an adjustable beam angle. The lights shall activate when the door is opened.

Shop Note: Each hatch compartment shall have an opening of 18" wide x 78" long and a usable depth of 17".

Option ID:120766 **QTY:**1
Hatch Compartment Flooring, Officer's Side, Black Dri-Dek, (2) Hatch Sections

Two (2) officer's side hatch compartment sections shall utilize Dri-Dek interlocking squares. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

Option ID:900963 **QTY:**1
Walkways/Overlays/Stepping Surfaces, Tread Plate, NFPA

WALKWAYS AND OVERLAYS

All exterior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be overlaid with 3003 H22 bright tread plate to provide a slip resistant surface, even when the surface is wet. All interior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be slip resistant when the surface is dry. The degree of slip resistance shall be in accordance with NFPA, current edition.

Horizontal walkways shall have .080" aluminum tread plate overlays installed and vertical surfaces shall have .125" aluminum tread plate overlays. Overlays shall be installed that are totally insulated from the apparatus with nylon shoulder washers that extend into holes in the body. Stainless steel cap nuts shall be employed where bolt ends may damage equipment or cause injury. After the apparatus is painted and the overlays are reinstalled, they shall be additionally sealed at the edges with a caulking compound. The exterior top tread plate overlay shall be mounted flush with the outer edges of the apparatus body.

Any designated horizontal standing or walking surface higher than 48" from the ground and not guarded by a railing, or structure at least 12" high shall have a "safety yellow line" marking the outside perimeter of the designated standing or walking surface area. Yellow reflective SCENEdots shall be used to create the line along the outside edges of standing and walking surfaces. Steps and ladders shall not be required to have the yellow line.

STEPPING SURFACES

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds. Steps shall be provided at any area that personnel may need to climb and shall be adequately lit.

Option ID:UPO0049506 **QTY:**1
Rear Deck, Bolt-On, Flat Back, Tread Plate, 16", Mitre Cut

REAR DECK WITH GRIP STRUT INSERT

A modular bolt-on deck shall be installed on the rear of the apparatus to form a full-width step area. The rear deck shall be constructed of anti-slip bright tread plate. The outside edge of the rear deck shall be flush with the rub rail that is installed on the body to maintain a uniform appearance. The depth of the rear deck will be 16”. The rear deck shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.

The outboard corners shall be mitre cut 45 degrees.

Option ID:005118 **QTY:**1
Rub Rails, "C" Channel Design (No Rubber Inserts)

BODY RUB RAILS

Rub rails shall be installed beneath the compartment doors to protect the apparatus body from damage should the body be brushed or rubbed against another object. The rub rails shall be 2-1/2" x 1" , 3/16" aluminum channel. The rub rails shall be highly polished and then bright dip anodized.

The rub rails shall be installed on the body utilizing non-corrosive nylon spacers and secured with stainless steel bolts. The outside edge of the rub rails shall be even with the fenderettes and bolt-on steps to prevent snagging.

Option ID:010080 **QTY:**1
Tow Option, Rear, Tow Eye, One (1), Underbody Subframe

REAR UNDERBODY TOW EYE

One (1) rear tow eye shall be installed directly below the rear of the chassis frame rails, mounted to the subframe. The tow eye shall be capable of a 15,000 lb. straight pull rating.

Option ID:002432 **QTY:**1
Receiver Tube, (1), Rear

RECEIVER TUBE FOR PORTABLE WINCH

One (1) square receiver tube shall be provided for use with a portable winch. An electrical connection shall be provided near the receiver tube for use with the portable winch.

The receiver shall be located on the rear of the apparatus.

The rear receiver shall have a straight pull rating of 5,000#.

Shop Note: Recess into rear step to meet angle of departure.

Option ID:UPO0048627 **QTY:**1
Storage Compartment, Long Handle Tools, Officer's Side Rear of Body, Painted Door

LONG-HANDLED TOOL COMPARTMENT ON RIGHT REAR

A tool compartment shall be on the officer's side rear of the apparatus with a painted door that hinges outward. The compartment shall have trough type storage for long handled tools.

Shop Note: A stop to be set at 78" deep. Pike poles customer supplied and installed

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Option ID:002186 **QTY:**1
Wheel Wells, Rear, Single Axle

REAR WHEEL WELLS

The fenders shall be integral with the body sides and compartments with a seamless appearance. The fenders shall be fitted with bolt-in removable full circular inner liners in the wheel well area for ease of cleaning and maintenance. The liners shall match the material used to build the body. A sufficient clearance shall be provided in the wheel well to allow the use of tire chains when the apparatus fully loaded.

Option ID:003559 **QTY:**1
Fenderettes, (2), Single Axle, Stainless Steel

STAINLESS STEEL FENDERETTES

Two (2) stainless steel fenderettes shall be installed at the outboard edge of the rear wheel well area, one (1) on each side. The fenderettes shall be bolted to the apparatus body using nylon washers to space them slightly away from the body to reduce the build-up of road grime. The fenderettes shall be constructed of stainless steel that has been polished to a high-quality finish.

Option ID:120489 **QTY:**1
Exhaust Heat Deflector Shield, 4"

EXHAUST HEAT DEFLECTOR SHIELD

A 4" heat deflector shield shall be installed over the exhaust to aid in dissipating the heat to prevent exhaust heat from adversely affecting contents stored in the body.

Option ID:004929 **QTY:**1
Access Panel for Fuel Tank Gauge, Pumpers

FUEL TANK GAUGE ACCESS PANEL

A removable panel shall be provided in the rear compartment to allow for access to the fuel tank gauge without removing the fuel tank.

Option ID:002427 **QTY:**1
License Plate Bracket

LICENSE PLATE BRACKET

A license plate bracket shall be mounted on the rear of the apparatus. A clear LED light shall be incorporated into the bracket.

Option ID:005155 **QTY:**1
Stainless Steel Screws, Pumper

TRIMRITE STAINLESS STEEL FASTENERS

TrimRite stainless steel fasteners shall be provided for all exposed and unpainted fasteners throughout the body in locations such as overlays, pump panels, and other numerous hardware mounting locations. TrimRite stainless is a hardenable martensitic stainless steel that provides a high level of corrosion resistance, hardness up to Rockwell C 51, good cold formability and ease of heat treatment, all of which combine to provide an alloy which has been used for many applications. TrimRite stainless is tested to salt spray standard ASTM B117, which is a 200-hour salt spray test. The OEM shall use TrimRite stainless with an added blue patch which provides improved vibration resistance for the fasteners.

Option ID:001210 **QTY:**1
Bag of Bolts

ADDITIONAL HARDWARE

A bag of stainless steel nuts, bolts, and washers shall be supplied with the apparatus for mounting of equipment.

Option ID:000505 **QTY:**1
Overlay, Tread Plate, Vertical Areas of Both Front Compartments

FRONT TREAD PLATE OVERLAYS

A tread plate overlay shall be located on the front vertical areas of each side of the apparatus body. The overlays shall be located on the front of the body compartments.

Option ID:100989 **QTY:**1
Rear Steps with Hansen White LED Handrails, OEM Access Ladder (Alum.) with 2-Step Drop Down, Driver's Side-Rear

REAR ACCESS LADDER

One (1) aluminum access ladder shall be located on the driver-side rear face of the apparatus in order to provide access to the top of the apparatus

The ladder shall have straight steps with two (2) fold-down steps. The number of straight steps and the width of the ladder shall be determined by engineering to be as large as possible based on the rear body style/components. The stepping height between steps and from the ground shall be in accordance with NFPA, current edition. compliance. The ladder steps shall be fabricated with bar grating and a minimum depth of 4-1/4".

The ladder shall have railing to assist in climbing installed on each side of the ladder.

The access ladder shall be adequately lit with Hansen White LED handrails.

Shop Note: A Grote light shall be installed above the ladder in addition to the lighted handrails

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Option ID:900960 **QTY:**1
Handrail Material, Knurled Aluminum

HANDRAILS

All handrails, unless otherwise stated, shall be constructed of knurled aluminum of not less than 1-1/4" in diameter. All railing shields and brackets shall be chrome plate and bolted to the body with stainless steel bolts. The lower bracket on all vertical handrails shall have a drain hole at the lowest point.

The following handrails shall be provided on the apparatus:

Shop Note: Engineering note: there is a mix of handrail brands and material on this truck.

Option ID:005158 **QTY:**1
Handrail, Body (Rear), Rear Face, Vertical, Officer's Side, Knurled Aluminum

A vertical handrail shall be installed on the officer's side rear of the apparatus.

Shop Note: Installed next to ladder rack

Option ID:120690 **QTY:**1
Handrail, Body (Rear), Below Hose Bed, Horizontal, Knurled Aluminum

A horizontal handrail shall be installed below the hose bed.

Option ID:UPO0048629 **QTY:**1
Handrail, Horizontal,/Vertical Rear Landing Area, Driver's Side, Top, Hansen White Backlit Knurled ALuminum

There shall be a handrail installed rearward on the top of the body, Driver's side for the rear landing area. There shall also be two vertical handrails mounted above the access ladder. The handrail shall be Hansen white backlit knurled aluminum

Option ID:006164 **QTY:**1
Handrails, Body (Rear), Hose Bed Cover, Horizontal, Knurled Aluminum

A handrail shall be installed on the rear of each hose bed cover door.

Option ID:002714 **QTY:**1
Ladder Storage, Inside Body, Side of Water Tank, Officer's Side, Painted Aluminum Door

GROUND LADDER STORAGE

The ground ladders shall be stored beneath the hose bed, on the officer's side of the water tank. The ladders shall be stored vertically on their beam in an aluminum rack with poly scuff strips. The ladders shall be accessible through a hinged painted aluminum door on the rear of the body.

The following ground ladders shall be supplied with the apparatus:

Option ID:001296 **QTY:**1
Ladder (1), Duo-Safety, 24' Aluminum Two-Section Extension, 900-A

One (1) Duo-Safety, model 900-A, 24' aluminum two-section extension ladder shall be provided.

Option ID:001293 **QTY:**1
Ladder (1), Duo-Safety, 14' Aluminum Roof, 775-A

One (1) Duo-Safety, model 775-A, 14' aluminum roof ladder with folding roof hooks shall be provided.

Option ID:001291 **QTY:**1
Ladder (1), Duo-Safety, 10' Aluminum Folding Attic, 585-A

One (1) Duo-Safety, model 585-A, 10' aluminum folding ladder shall be provided.

Option ID:009219 **QTY:**1
Pike Pole Tubes (2), In Ladder Storage Compartment

PIKE POLE STORAGE

Two (2) aluminum tubes for the storage of pike poles shall be installed in the ground ladder storage compartment.

The following pike poles shall be supplied with this location on the apparatus:

Option ID:005236 **QTY:**1
Pike Pole (1), Nupla, 6' Fiberglass, Standard Hook, YPD-6

One (1) Nupla, model YPD-6, 6' fiberglass pike pole with a standard hook and butt-style handle shall be provided.

Option ID:005237 **QTY:**1
Pike Pole (1), Nupla, 8' Fiberglass, Standard Hook, YPD-8

One (1) Nupla, model YPD-8, 8' fiberglass pike pole with a standard hook and butt-style handle shall be provided.

Option ID:900951 **QTY:**1
Wheel Chock Storage, Under Front of Body, Driver's Side

WHEEL CHOCK STORAGE

The wheel chocks shall be stored in locations that are easily accessible under the front of the body on the driver's side of the apparatus.

Option ID:001204 **QTY:**1
Wheel Chocks, (1) Pair, Zico SAC-44 and Bracket, OEM Installed

WHEEL CHOCKS

One (1) pair of Zico, model SAC-44, wheel chocks shall be provided with the apparatus. The wheel chocks shall be mounted in Zico model, SQCH-44-H, mounting brackets.

Shop Note: Insure these are the SAC-44-E

Option ID:110168 **QTY:**1
OBSOLETEPump Module, Side Mount, Integral, CORE, Aluminum, 1/8"

CORE INTEGRATED PUMP MODULE

The pump module shall be the CORE side mount design, shall be fabricated from 1/8" smooth aluminum sheet, and shall be integrated into the body module. The integrated pump module shall be constructed with holding fixtures to ensure proper dimensioning.

Option ID:101261 **QTY:**1
OBSOLETESub Frame, Hot Dip Galvanized, Front Frame Extension Sub-Assembly, Core/Uni-Body

GS-36 CORE/UNI-BODY FORWARD FRAME EXTENSION

To assure proper body alignment and clearance, the body sub frame shall be constructed in a jig and fitted directly on the chassis. The sub frame shall be constructed of 36,000 PSI galvanized steel.

Ahead of the front compartment supports, there shall be a subframe extension to support the pump module and pump. This shall include additional channels and tubes. Pump mounts shall be integral to the substructure to ensure that the pump and pump module/

body move in unison.

The chassis frame rails shall be fitted with fiber reinforced rubber to isolate the body frame members from direct contact with chassis frame rails.

After fabrication the sub frame extension shall be hot dip galvanized for maximum protection against corrosion.

Option ID:004731 **QTY:**1
Pump Compartment Internal Lighting, LED, On-Scene Night Axe

PUMP COMPARTMENT LIGHTS

Two (2) 9" On-Scene Night Axe LED lights shall be installed in the pump compartment. The lights shall be rated at 100,000 hours of service. The lights shall be waterproof and magnesium chloride resistant. The lights shall be enclosed in tough 5/8" Lexan tube.

Option ID:009890 **QTY:**1
Running Board, Driver's Side, Integral, Tread Plate

DRIVER'S SIDE RUNNING BOARD

An integral running board shall be installed on the driver's side of the pump module. The running board shall be constructed of aluminum and overlaid with anti-slip tread plate. The outside edge of the running board shall be covered by a rub rail and shall be flush with the rub rail that is installed on the body to maintain a uniform appearance.

Option ID:010132 **QTY:**1
Running Board, Officer's Side, Integral, Tread Plate

OFFICER'S SIDE RUNNING BOARD

An integral running board shall be installed on the officer's side of the pump module. The running board shall be constructed of aluminum and overlaid with anti-slip tread plate. The outside edge of the running board shall be covered by a rub rail and shall be flush with the rub rail that is installed on the body to maintain a uniform appearance.

Option ID:009941 **QTY:**1
Dunnage Compartment, Tread Plate, Above CORE Pump Module ,NO Cover

TREAD PLATE DUNNAGE COMPARTMENT

A dunnage compartment shall be located above the CORE pump module. The dunnage compartment floor shall be constructed of tread plate.

Shop Note: This is the area around the deckgun. The floor of this area will be used to stand on while operating the deckgun

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Option ID:009947 **QTY:**1
Storage Compartment, Transverse, CORE

TRANSVERSE STORAGE COMPARTMENT

A transverse storage compartment shall be located above the speedlays. The compartment shall be adequately lit by two (2) 9" On-Scene Night Axe LED lights. The lights shall be located in the upper portion of the compartment, one (1) on each side.

The compartment shall be accessible from both the driver's and officer's sides of the apparatus. Each door enclosing the compartment shall be painted smooth aluminum and shall positively latch using D-Ring style latches. The doors shall also be connected to the door-open warning circuit.

Option ID:UPO0050839 **QTY:**1
OBSOLETEInspection Panel, Pump, Front Pump Module, Removable, Tread Plate, Compression Latches, Side Mounts, RMA's

FRONT PUMP INSPECTION PANEL

A tread plate inspection panel shall be provided on the front of the pump compartment. The panel shall be of the single pan design and shall be positively latched in the closed position utilizing compression latches. An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching. This area shall be accessible when the cab is tilted.

Option ID:UPO0048642 **QTY:**1
Transverse Storage Divider (1), Gray Line-X Aluminum

DIVIDER

One (1) divider shall be in the transverse area. The divider shall be fabricated of 3/16" aluminum and shall be mounted in a channel on each end for adjustability. The divider shall be coated with Line-X. The coating shall be durable enough to withstand the abuse of flying hose couplings without chipping or cracking.

Option ID:UPO0038507 **QTY:**1
Pump Panels, CORE, Controls in L1, Stainless Panels, IC Bezels/Trim Rings/Labels, Extended Below Cab Extension

CONTROL/INSTRUMENT PANEL

The control/instrument panel shall be in the L1 compartment. It shall be located in the forward portion of the compartment.

SIDE DISCHARGE AND INTAKE PANELS

A panel shall be on each side of the apparatus where the discharges and intakes are located at the front of the integrated pump module.

The side discharge/intake panels shall be stainless steel.

GARNISH RING BEZEL ASSEMBLIES

Innovative Controls intake and/or discharge garnish rings shall be mounted to the apparatus with mounting bolts. These bezel assemblies shall be used to identify intake and/or discharge ports with color and verbiage. The garnish rings shall be designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies shall feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be subsurface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive, which meets UL969 and NFPA standards.

VERBIAGE TAG BEZEL ASSEMBLIES

Innovative Controls verbiage tag bezels shall be installed. The bezel assemblies shall be used to identify apparatus components. These tags shall be designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The verbiage tag bezel assemblies shall include a chrome-plated panel-mount bezel with durable easy-to-read UV resistant polycarbonate inserts featuring the specified verbiage and color coding. These UV resistant polycarbonate verbiage and color inserts shall be subsurface screen printed to eliminate the possibility of wear and protect the inks from fading. Both the insert labels and bezel shall be backed with 3M permanent adhesive which meets UL969 and NFPA standards.

SAFETY MESSAGE BEZEL ASSEMBLIES

Innovative Controls safety message bezels shall be installed. The bezel assemblies shall be used to identify, instruct, or warn the operators. These tags shall be designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The safety message bezel assemblies shall include a chrome-plated panel-mount bezel with durable easy-to-read UV resistant polycarbonate inserts featuring ANSI safety standard graphics or custom graphics. These UV resistant polycarbonate graphic inserts shall be subsurface screen printed to eliminate the possibility of wear and protect the inks from fading. Both the graphic insert labels and bezel shall be backed with 3M permanent adhesive which meets UL969 and NFPA standards.

Option ID:009950 **QTY:**1
Pump Panel Lighting, Side Panels, LED, On-Scene Night Axe, L1 Rollup Door, CORE

PUMP PANEL LIGHTING

The pump operator's driver's side stationary control panel and OMNI Pump Control System shall be lit by the integral roll-up door lighting. The lights in each compartment shall become energized when the door is opened.

The driver's and officer's exterior side panels shall each be illuminated by On-Scene LED Night Axe lighting. The panel lights shall become energized upon setting the parking brake. Each light shall be in a protective burnished-cast aluminum housing.

Option ID:910612 **QTY:**1
Pump Panel Lighting Activation, Automatic with Park Brake Engaged

The pump panel lighting shall become energized automatically upon setting the park brake so the gauge information may be consulted at any time the apparatus is parked.

Option ID:UPO0048630 **QTY:**1
Pump, Waterous, Single-Stage (PTO), 1500 GPM, CSUPA-1500 Standard Impellers

MIDSHIP MOUNT FIRE PUMP

The pump shall be a Waterous CSUPA 1500 U.S. GPM PTO-driven fire pump. The pump shall be a single stage centrifugal class "A" rated fire pump, designed specifically for the fire service.

The pump body shall be cast as two (2) horizontally split pieces. The body shall be made of high tensile, close-grained gray iron with a minimum tensile strength of 40,000 PSI.

An interlock system shall be provided to prevent the pump drive system from being shifted out of the "pump engaged" pumping mode of operation when the chassis transmission is in pump gear.

IMPELLERS

The pump impellers shall be bronze, specifically designed for the fire service and accurately balanced for vibration free running. The stripping edges shall be located on opposite sides of the impellers to reduce shaft deflection.

The impeller shaft shall be stainless steel, accurately ground to size and supported at each end by oil or grease lubricated anti-friction ball bearings for rigid, precise support. The bearings used on the impeller shaft shall be automotive type bearings, easily cross-referenced and readily available at normal parts or bearing stores.

IMPELLER WEAR RINGS

The pump shall be equipped with replaceable bronze wear rings for increased pump life and minimum maintenance cost. The wear rings shall be designed to fit into a groove in the face of the impeller hubs forming a labyrinth that, as the clearance increases with age, directs water from the discharge side in several directions eventually exiting outward, away from the eye of the impeller hub.

LUBRICATION SYSTEM

An internal lubrication system shall deliver lubricant directly to the drive chain. This unique design shall eliminate the need for an external lubrication pump and auxiliary cooling. Oil shall be supplied with the lubrication system.

PUMP TRANSMISSION

The pump shall have a Waterous PA series transmission. The PA transmission is designed to drive Waterous midship pumps off the ten bolt, power-takeoffs (PTO) available on the left side of an Allison MD or HD automatic transmission. The PA transmission body is made entirely of light-weight cast aluminum alloy. The shafts, sprockets, and chain are steel. It utilizes the same proven chain design used in the dependable, Waterous C10 series pump transmissions. This design provides the

smoothest and quietest transfer of power. The chain is lubricated by means of a passive oil system as well as the splash oil system. Ball bearings are used on the two shafts to provide smooth, long-lasting service. The input shaft has a 1-1/2-10 SAE spline. The driven shaft of the PA transmission uses the same design as our C10 series transmission. This special design consists of a two-piece impeller shaft that is separable between the pump and pump transmission, allowing for individual repair of either pump or transmission and keeping down time to a minimum.

Shop Note: All plumbing and Foam Schematics to be on the Forward wall of the compartment L1

Option ID:000090 **QTY:**1
Mechanical Seals, Waterous

MECHANICAL SEALS

The pump shall be equipped with self-adjusting, maintenance free mechanical shaft seals that shall not require manual adjustment. These seals shall be designed in a manner such that they shall remain functional enough to permit continued use of the pump in the unlikely event of a seal failure.

Option ID:002792 **QTY:**1
Anodes, Waterous, Magnesium, 2 Discharge, 2 Intake

ANODES

Four (4) Waterous Magnesium anodes shall be provided with the fire pump. The anodes shall aid in preventing galvanic corrosion within the water pump and be easily replaceable. The anodes shall be installed as follows:

- Two (2) on the intake side of the pump
- Two (2) in the discharge manifold of the fire pump.

Option ID:UPO0048631 **QTY:**1
Pump Rating, 1500 GPM

The pump shall be rated at 1500 gallons per minute.

Option ID:910641 **QTY:**1
Pump Mounting, Inside Front of Body

FIRE PUMP MOUNTING

The fire pump shall be mounted within the front of the apparatus body. The pump shall be frame mounted; therefore minimizing the likelihood of the pump casing cracking in the event of a collision. The pump module shall be mounted to the frame in four (4) locations and shall be reinforced appropriately in order to carry the expected load for the life of the apparatus.

Option ID:UPO0048877 **QTY:**1

Hot Shift PTO Connection, Pump In Motion

Hot Shift PTO Connection, Pump In Motion

Option ID:101812 **QTY:**1
Governor, Pump Boss Max, FRC

PRESSURE GOVERNOR

A Fire Research Pump Boss Max pressure governor and control module kit shall be installed. The system shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 7-1/2" high by 3-5/8" wide. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 2" from the front of the control module. The control LCD shall be 3.5" in size with a minimum brightness of 1000 nits and optically bonded to 3mm Borofloat Glass. Inputs for monitored engine information shall be a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific signal wiring. Inputs to the control module from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:

- Engine RPM; shown on LCD screen
- Check engine and stop engine warning; shown on LCD screen
- Engine Oil pressure; shown on LCD screen
- Engine coolant temperature; shown on LCD screen
- Transmission Temperature; shown on LCD screen
- Battery voltage; shown on LCD screen
- Pressure and RPM operating mode LEDs
- Pressure / RPM setting; shown on LCD screen
- Throttle ready / Ok to Pump LEDs

The screen (LCD) message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. LCD Screen and LED's intensity shall be automatically adjusted for day and night time operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. The kit shall monitor inputs and support audible and visual warning alarms for the following conditions:

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

The program features shall be accessed via push-buttons located on the front of the control module. A USB port shall be located at the rear of the control module to upload future firmware enhancements.

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

The pressure governor control module shall be programmed at installation for a specific engine.

Option ID:111109 **QTY:**1
Intake Relief Valve, Pump, Akron, #53, Factory Preset

INTAKE RELIEF VALVE

An Akron Brass, model #53, intake relief valve shall be installed on the suction side of the pump. The valve shall be the preset type, adjustable from 50 to 250 PSI, and shall be designed to prevent vibration from altering the setting. The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NH connection. The discharge shall be away from the pump operator and labeled "Do Not Cap".

Shop Note: Set to 150 psi

Option ID:006588 **QTY:**1
Primer, Trident, AirPrime (3-Barrel), Air-Operated Valve (31.001.7)

TRIDENT PRIMING PUMP

The priming pump shall be a Trident Emergency Products three-barrel, compressed air powered, high efficiency, multi-stage, venturi based AirPrime System. All wetted metallic parts of the priming system are to be of brass and stainless steel construction. A pressure protection valve shall be installed with the priming pump. A single panel mounted control shall activate the priming pump and open the priming valve to the pump.

Option ID:000112 **QTY:**1
Master Drain Valve, Trident

MASTER DRAIN VALVE

A Trident manifold drain valve assembly shall be supplied. This drain shall provide the capability to drain the entire pump by turning a single control. The valve assembly shall consist of a stainless steel plate and shaft in a bronze body with multiple ports. The drain valve control shall be mounted on the driver's side pump panel and labeled "Master Drain".

Option ID:910645 **QTY:**1

Pump Color Primed Black - Intakes Unpainted

PUMP PRIMED BLACK BY PUMP MANUFACTURER

The pump shall be primed black by the pump manufacturer.

The main intake(s) shall be unpainted and any auxiliary intake(s) shall be the same color as they arrived from the valve manufacturer.

Option ID:901166 **QTY:**1
Pump Manuals Waterous, (2)

PUMP MANUALS

Two (2) Pump Operation and Maintenance manuals shall be provided in digital format with the apparatus.

Option ID:111071 **QTY:**1
OBSOLETEPump and Engine Cooling System, Inn. Cntrls, 3/8" I.D., Hose, Controls in L1

PUMP AND ENGINE COOLING SYSTEM

A pump and engine cooling system shall be provided on the apparatus. The cooling system shall keep the engine cool when running for long periods of time and the pump cool during long periods of pumping when water is not being discharged. The cooling system shall also be setup in a way that the cooling system lines can be easily drained through the master pump drain.

The cooling system lines shall consist of high-temperature 3/8" (inside diameter) hose. The engine cooling lines shall be installed with one (1) line going from the discharge side of the water pump through an Innovative Controls, model 3008220-2-2, 3/8" in-line quarter turn ball valve assembly and continuing on to the chassis heat exchanger. The return line from the heat exchanger shall then run into the suction side of the pump. The pump cooling lines shall be installed with one (1) line going from the discharge side of the water pump through an Innovative Controls, model 3008220-2-2, 3/8" in-line quarter-turn ball valve assembly up to the water tank. At the water tank, the pump cooling line shall be plumbed into a 3/8" check valve on the "Tank Fill" valve. The check valve shall prevent tank water from back flowing into the pump when the cooling system is not in use. A return line from the water tank shall be plumbed into the water pump.

The engine cooling system valve shall be controlled on the operator's panel, and shall be clearly labeled, "Engine Cooler".

The pump cooling system valve shall be controlled on operators panel, and shall be clearly labeled, "Pump Cooler".

Option ID:000243 **QTY:**1
Foam System, FoamPro, 2002, Single System, Class A Foam, NO Optional Flush System

FOAM SYSTEM

A FoamPro 2002 single foam system shall be installed on the apparatus. The system shall be an electronic, fully automatic, variable speed, direct injection, and discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrates and most Class B foam concentrates. The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows and pressures. The system shall be equipped with a digital electronic control display, suitable for installation on the pump panel. Incorporated within the control display shall be a microprocessor that receives input from the system flow meter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator's preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A paddlewheel type flow meter shall be installed in a manifold for the specified foam capable discharges.

The digital computer control display shall enable the pump operator to perform the following control and operation functions for the foam proportioning system:

- Provide push-button control of foam proportioning rates from 0.1% to 9.9% in 0.1% increments.
- Show current gallon-per-minute water flow rate.
- Show total gallons of water discharged, during and after foam operations are completed. -Show total gallons of foam concentrate consumed.
- Simulate flow rates for manual operation.
- Perform set-up and diagnostic functions for the computer control microprocessor.
- Flash a "low concentrate" warning when the foam concentrate tank(s) run(s) low.
- Flash a "no concentrate" warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank(s) empty.

A 12-volt electric motor driven positive displacement foam concentrate pump, rated up to 5 GPM , with operating pressures up to 400 PSI, shall be installed in a suitable compartment near the apparatus pump house. A pump motor electronic driver (mounted to the base of the pump) shall receive signals from the computer control display, and power the 3/4 horsepower electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate preset by the pump operator is injected into the water stream.

System capacity shall be as follows:

- 0.2% Foam Concentrate / 2500 Maximum GPM
- 0.5% Foam Concentrate / 1000 Maximum GPM
- 1.0% Foam Concentrate / 500 Maximum GPM
- 3.0% Foam Concentrate / 166 Maximum GPM

A full flow check valve shall be provided to prevent foam contamination of fire pump and water tank or water contamination of foam tank.

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

- Operator control and display
- One (1) Paddlewheel flow meter
- Pump and electric motor/motor driven
- Wiring harnesses
- Foam injection check valve

One (1) low-level foam tank switchman installation and operation manual shall be provided for the unit, along with a one (1) year limited warranty. A system-schematic-placard and a system-rating-placard shall be supplied and installed in accordance with NFPA, current edition.

Option ID:004931 **QTY:**1
Refill System, FoamPro, Power-Fill, Single System

FOAM REFILL SYSTEM

The apparatus shall be equipped with a FoamPro single foam, electronic, automatic concentrate refill system. It shall be separate from the proportioning system to allow for simultaneous operations. The system shall be capable of handling Class A or Class B foam concentrate. The apparatus shall be plumbed from the externally accessed intake/flush port to the foam cell. The external intake/flush connection shall be quick connect, cam-lock type and incorporated a check valve to prevent back flow. The refill line shall be positioned in the lower portion of the foam cell to minimize agitation. The refill operation shall be based on direct measurement of the concentrate level in the cell and the refill pump intake performance. The system must be capable of automatically stopping when the foam cell is full and warn the operator when the concentrate source is empty or any other conditions preventing flow occurs. The system shall be equipped and electronic control suitable for installation on the pump panel. Incorporated within the control shall be a microprocessor that receives input from the system while also monitoring foam concentrate pump output. An all bronze three-way valve shall be included to allow that operator to flush the system after use.

A 12-volt electric motor driven positive concentrate pump, with a minimum of 10 U.S. GPM @ 20 PSI rating, with concentrate viscosity exceeding 5500 CPS, shall be installed per manufacturer recommendations. A pump motor electronic driver shall receive signals from the computer control display and power the electric motor directly coupled to the concentrate pump. The system shall receive readings when the concentrate tank is full and stop operation to prevent overfill. The system shall terminate operations when flow is not detected on the intake side for twelve (12) seconds.

Option ID:UPO0050481 **QTY:**1
Overboard Foam Fill Kit, Foam Pro 3435-0184

FOAM PRO OVERBOARD FOAM PICK-UP

A Foam Pro overboard foam pick-up model 3435-0184 shall be provided with the foam system. The overboard foam pick-up shall provide foam from an off truck supply source. A foam pick-up hose shall be supplied with the system.

Shop Note: The foam flush on overboard foam fill kit will also be plumbed so that it can flush the foam manifold

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Option ID:980014 **QTY:**1
Foam System Testing, Single System

FOAM PROPORTIONING SYSTEM TESTING

The foam proportioning system shall be tested and certified after final installation in accordance with NFPA, current edition.

Option ID:UPO0050838 **QTY:**1
Manifold, Waterous, Side Mounts, Foam (Redlands)

PLUMBING MANIFOLD

The plumbing manifold shall consist of the inlet side manifold and the discharge side manifold. Galvanized Victaulic couplings shall be used wherever possible for ease of maintenance and superior corrosion protection.

The inlet side of the plumbing manifold shall utilize schedule 10, 304-grade stainless steel tubing and preformed elbows for inlets that are larger than 3”. Side auxiliary inlets that are 3” or smaller shall utilize schedule 10, 304-grade stainless steel threaded tubing and preformed elbows. The inlet manifold shall thread into the pump auxiliary inlet ports and each inlet valve shall thread onto the inlet manifold.

The discharge side of the plumbing manifold shall utilize schedule 10, 304-grade stainless steel tubing and preformed elbows to ensure the quality of the manifold where welds are required. The discharge manifold shall connect to the pump discharge ports using ½” stainless steel flanges that shall be machined to seat an O-ring to ensure a leak proof seal. Each discharge shall derive from a port on the manifold assembly connected to a discharge valve with 1/2” 304-grade stainless steel flanges. Discharges that terminate in a location other than the pump module (i.e. rear discharges) that do not require welding shall utilize a combination of high-pressure flex hose and schedule 10, 304-grade stainless steel tubing to allow flexibility between the body and the pump module.

A lift drain valve shall be included. A chrome plated rectangular handle shall be provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with a flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

Option ID:910550 **QTY:**1
Gauge Brand, Class 1, 2-1/2" Liquid Filled (No Bezel) - PSI 0-400

CLASS 1 DISCHAGE GAUGES - 2-1/2" - 0-400 PSI

The discharge gauges on the apparatus shall be 2-1/2” diameter Class 1 water pressure gauges. Each pressure gauge shall read pressure in PSI and shall be capable of reading 0 to 400 PSI. Each gauge shall be liquid filled to ensure proper operations to minus 40 degrees and to reduce lens condensation. Each gauge will have black markings on a white dial.

Option ID:004105 **QTY:**1
Master Gauges, Class 1, 4-1/2", Liquid Filled (No Bezel), PSI -30-0-400

MASTER PUMP GAUGES

The pump vacuum and pressure gauges shall be supplied by Class 1. Each gauge shall be interlube filled to insure proper operations to minus 40 degrees. Each gauge shall read -30 to 0 to 400 PSI and shall be a minimum of 4-1/2" in diameter. The dial shall have black markings on a white background.

Option ID:111067 **QTY:**1
Test Ports, Pressure/Vacuum, Inn. Cntrls, Operators Panel

The test port manifold shall be from Innovative Controls and feature solid one-piece cast brass manifold construction located on the pump operator's panel. Removable chrome plated plugs shall be in two test ports, which shall protrude through the surface of the apparatus pump panel or subpanel for easy removal during manual pressure testing.

Plumbing ports 1-4 shall be behind the panel after installation. Each of these four ports (two on vacuum side and two on pressure side) shall have SAE brass fittings or plugs and be plumbed as needed into the vacuum and pressure lines and gauges.

Pressure ports 5 and 6 shall accept 1/4" NH fittings, plugs, or pressure transducers for real-time vacuum and/or pressure readings from one or both sides of the manifold. Port 5 shall be on the vacuum side and Port 6 shall be on the pressure side of the manifold. The location of these ports shall allow the manifold to totally drain if desired.

The test port manifold may be assembled to a decorative chrome-plated die-cast zinc bezel. This bezel shall reside on the outside of the panel after installation and hold a sub-surface printed polycarbonate overlay that will label each of the two exposed test ports – one shall be labeled ‘Vacuum’ or ‘VAC’ and the other ‘Pressure’ or ‘PRES’. This label shall cover the mounting screws.

Option ID:910527 **QTY:**1
Hardware Brand, South Park, NH Intake Swivels, NH Discharges, TFT Storz

HARDWARE BRAND

The non-Storz discharge and intake fittings provided on this apparatus shall be South Park Corp. Brand. The adapter/cap/plug fittings shall be manufactured from high-quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

The Storz discharge and intake fittings provided on this apparatus shall be Task Force Tips Brand. For corrosion resistance, the adapter shall be constructed of hard coat anodized aluminum alloy and include a polymer bearing ring for prevention of galvanic corrosion.

The auxiliary intake(s) shall terminate with NH swivels, and the discharges shall terminate with male NH threads.

Option ID:100377 **QTY:**1
Drains, Innovative Controls, Manual Lift Handle

DISCHARGE, PRE-CONNECT, AND INTAKE DRAINS

An Innovative Controls 3/4" quarter turn drain valve shall be included on each discharge, gated intake, and steamer valve (if applicable). A side stem, long stroke chrome plated lift handle shall be provided on the drain valve to facilitate use with a gloved hand. The drain valve shall have a verbiage tag that angles upward so that it can easily be seen and read by the operator before opening. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with a flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

AUTOMATIC DRAINS

A Class 1 automatic drain shall be installed on the deluge valve (if applicable). The drains shall also be located in low laying areas (i.e., front discharge) The Drains will open whenever the pressure in the line drops below 6 PSI.

Option ID: Tank/Pump Plumbing Labels **QTY:**1
Tank/Pump Plumbing Labels - See label order form (required)

See label order form (required)

Option ID:100349 **QTY:**1
Pump to Tank Fill, 2", Akron 8800 2" Manual Valve, IC Push-Pull Handle

2" TANK FILL

A 2" tank fill shall be plumbed from the pump to the tank. Installation shall be completed with 2" rubber hose and stainless steel hose couplings.

An Akron Brass, model 8820, 2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer.

Option ID:100334 **QTY:**1
Tank to Pump, 4", Akron 8800 3" Manual Valve, IC Push-Pull Handle

4" TANK-TO-PUMP

A 4" tank-to-pump shall be plumbed with a flexible hose from the tank to the suction side of the pump. An Akron Brass, model 8830, 3" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall also include a necessary B3-SH

pump flange adapter, which shall be specifically used for the tank-to-pump line to properly adjust the plumbing based on the pitch of the pump. The valve shall carry a ten (10) year warranty by the valve manufacturer.

A check valve shall be between the pump suction and the booster tank valve. The check valve shall eliminate back flow into the water tank when the pump is connected to a pressurized source.

The valve shall be actuated by a manual actuator. The manual actuator shall be controlled by an Innovative Controls push/pull T-handle.

Shop Note: Pull to Close

Option ID:100381 **QTY:**1
Main Intake, Driver Side, 6", Short Tube, Full-Body Pump, MNST

6" DRIVER SIDE MAIN INTAKE

A 6" main intake shall be located on the driver's side of the pump module. The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion. A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width. The intake shall terminate male NH threads.

Option ID:UPO0048879 **QTY:**1
No Cap

No Cap

Shop Note: SOE will be signed

Option ID:002588 **QTY:**1
Auxiliary Intake, Driver-Side, 2-1/2", Fully Recessed

2-1/2" DRIVER'S SIDE AUXILIARY INTAKE

A 2-1/2" gated auxiliary intake with 2-1/2" plumbing shall be provided on the driver's side of the pump module. The auxiliary intake shall be fully recessed behind the panel in order to keep the valve protected from the elements.

Option ID:007059 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle

An Akron Brass, model 8825, 2-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass, model TS manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

Option ID:001246 **QTY:**1
Plug, NH, 2-1/2", South Park, HPC3008AC

One (1) 2-1/2" NH thread rocker lug chrome plated vented plug, complete with cable or chain, shall be provided.

Option ID:100385 **QTY:**1
Main Intake, Officer Side, 6", Short Tube, Full-Body Pump, MNST

6" OFFICER SIDE MAIN INTAKE

A 6" main intake shall be located on the officer's side of the pump module. The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion. A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width. The intake shall terminate male NH threads.

Option ID:UPO0048880 **QTY:**1
No Cap

No Cap

Shop Note: SOE will be signed

Option ID:002587 **QTY:**1
Auxiliary Intake, Officer-Side, 2-1/2", Fully Recessed

2-1/2" OFFICER'S SIDE AUXILIARY INTAKE

A 2-1/2" gated auxiliary intake with 2-1/2" plumbing shall be provided on the officer's side of the pump module. The auxiliary intake shall be fully recessed behind the panel in order to keep the valve protected from the elements.

Option ID:007059 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle

An Akron Brass, model 8825, 2-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass, model TS manual actuator installed

directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

Option ID:001246 **QTY:**1
Plug, NH, 2-1/2", South Park, HPC3008AC

One (1) 2-1/2" NH thread rocker lug chrome plated vented plug, complete with cable or chain, shall be provided.

Option ID: Intake Labels **QTY:**1
Intake Labels - See label order form (required)

See label order form (required)

Option ID:002545 **QTY:**1
Discharge, Driver-Side, 2-1/2", NST (250 GPM NFPA Rated)

2-1/2" DRIVER'S SIDE DISCHARGE

A 2-1/2" discharge with 2-1/2" plumbing shall be located on the driver's side of the pump compartment. The discharge shall terminate with male NH thread.

Option ID:007059 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle

An Akron Brass, model 8825, 2-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass, model TS manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

Shop Note: Handle to the left when closed

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100527 **QTY:**1
Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30 degree

chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:002545 **QTY:**1
Discharge, Driver-Side, 2-1/2", NST (250 GPM NFPA Rated)

2-1/2" DRIVER'S SIDE DISCHARGE

A 2-1/2" discharge with 2-1/2" plumbing shall be located on the driver's side of the pump compartment. The discharge shall terminate with male NH thread.

Option ID:007059 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, TS Handle

An Akron Brass, model 8825, 2-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass, model TS manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

Shop Note: Handle to the left when closed

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100527 **QTY:**1
Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30 degree chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:002538 **QTY:**1
Discharge, Officer-Side, 2-1/2", NST (250 GPM NFPA Rated)

2-1/2" OFFICER'S SIDE DISCHARGE

A 2-1/2" discharge with 2-1/2" plumbing shall be located on the officer's side of the pump compartment. The discharge shall terminate with male NH thread.

Option ID:UPO0048633 **QTY:**1
Valve, 2-1/2", Akron, Electric, 8625, Stainless Ball, 9327 Mini Navigator Pro Controller (Valve Only)

An Akron Brass, model 8625, 2-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass electric actuator installed on the valve. The electric actuator shall have a 16:1 gear ratio, which actuates from fully open to fully closed in five (5) seconds, a clutchless motor, and utilizes an electric controller with current limiting design.

The electric actuator shall be controlled by an Akron Brass, model 9327, Mini Navigator Pro electric valve controller. The electric controls shall be of true position feedback design, requiring no clutches in the motor or current limiting. The unit shall be completely sealed with momentary open and close. The unit shall carry a five (5) year warranty.

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100527 **QTY:**1
Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30 degree chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:002553 **QTY:**1
Discharge, Officer-Side, 4", NST (625 GPM NFPA Rated)

4" OFFICER'S SIDE DISCHARGE

A 4" large diameter discharge, with 4" plumbing, shall be located on the officer's side of the pump compartment. The discharge shall terminate with male NH thread.

Option ID:UPO0048634 **QTY:**1
Valve, 4", Akron, Electric, 8840, Bronze Flat Ball, 9327 Navigator Pro Controller (Valve Only)

Valve, 4", Akron, Electric, 8840, Bronze Flat Ball, 9327 Navigator Pro Controller (Valve Only)

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100609 **QTY:**1
Elbow (30 Deg.) 4" FNH x 4" MNH (SE393040AC) - NH Cap (HCC2814AC), Chrome, South Park

One (1) 4" female NH thread swivel rocker lug x 4" male NH thread 30 degree chrome plated elbow adapter shall be provided.

One (1) 4" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:121828 **QTY:**1
Discharge, Front Bumper Driver-Side, 1-1/2", Chassis Installed Plumbing, Above Gravelshield, NST

1-1/2" FRONT BUMPER DISCHARGE

A 1-1/2" discharge shall be located above the gravel shield on the driver's side of the front bumper. The discharge shall be plumbed with 2" chassis installed stainless steel plumbing and OEM installed stainless steel plumbing and high-pressure flex hose with stainless steel couplings. The discharge shall terminate with male NH thread.

The discharge shall have Class1 automatic drains installed in the low routed areas below the manual drain. The automatic drains shall open whenever the pressure in the line drops below 6 PSI.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:UPO0048881 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)

An Akron Brass, model 8825, 2-1/2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of

seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls Pistol Grip locking handle at the Side pump control panel. The centerline of the valve control shall be no more than 72" vertically above the platform that serves as the pump operator's position.

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:910526 **QTY:**1
Preconnect Discharge

The discharge shall be designated as a pre-connect so no cap and chain shall be required.

Option ID:100496 **QTY:**1
Discharge, Rear Driver-Side, 2-1/2", NST, 3" Plumbing

2-1/2" REAR DISCHARGE (DRIVER SIDE)

A 2-1/2" discharge, with 3" plumbing, shall be located on the driver's side rear of the apparatus. The discharge shall terminate in male NH thread.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:UPO0050042 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)

An Akron Brass, model 8825, 2-1/2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls Pistol Grip locking handle at the Side pump control panel. The centerline of the valve control shall be no more than 72"

vertically above the platform that serves as the pump operator's position.

Shop Note: Controller is a Sidemount Bezel Pistol Grip controller

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Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100527 **QTY:**1
Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30 degree chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:100496 **QTY:**1
Discharge, Rear Driver-Side, 2-1/2", NST, 3" Plumbing

2-1/2" REAR DISCHARGE (DRIVER SIDE)

A 2-1/2" discharge, with 3" plumbing, shall be located on the driver's side rear of the apparatus. The discharge shall terminate in male NH thread.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:UPO0050043 **QTY:**1
Valve, 2-1/2", Akron, Manual, 8825, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)

An Akron Brass, model 8825, 2-1/2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls Pistol Grip locking handle at the Side pump control panel. The centerline of the valve control shall be no more than 72"

vertically above the platform that serves as the pump operator's position.

Shop Note: Controller is a Sidemount Bezel Pistol Grip controller

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Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:100527 **QTY:**1
Elbow (30 Deg.) 2-1/2" FNH x 2-1/2" MNH (SE393010AC) - NH Cap (HCC2808AC), Chrome, South Park

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30 degree chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Option ID:UPO0049503 **QTY:**1
Speedlays in Lift Out Trays, Ahead of Pump Panel, (2) 1-1/2", Black Poly, Side-By-Side

SPEEDLAY CONFIGURATION

Two (2) 1-1/2" side-by-side speedlay pre-connects shall be located at the front of the body. Class1 high-pressure flex hose with stainless steel couplings shall be used in the plumbing.

A Trident 90º swivel elbow to keep the hose from kinking when pulled from either side of the apparatus. The swivel for each speedlay shall be located outboard for ease of making connections while changing hose.

Each preconnected speedlay shall be equipped with one (1) removable black poly tray to aid in loading the hose. The trays shall be set on removable slotted aluminum pans, which shall be sufficient for drainage and provide access to the pump.

The pre-connect hose beds shall be sized to accommodate the following hose load:

Shop Note: Make trays 1" wider than standard

Option ID:007013 **QTY:**1
Pre-connect Hose Bed Housing Coating, Abraded Finish

The interior of the pre-connect hose bed shall have a maintenance free abraded finish.

Option ID:UPO0049504 **QTY:**1
Speedlay Flooring, Slots Integrated Into Black Poly Hose Load Trays

The floor of the speedlay trays shall be slotted sufficiently for drainage.

Shop Note: Slots are fabricated into the poly trays.

Option ID:009943 **QTY:**1
Speedlay Rollers

Stainless steel rollers shall be provided at each end of the speedlay hose bed to facilitate deployment of hose. Vertical rollers shall be installed on each side of the hose bed opening, and a horizontal roller shall be installed under the opening.

Option ID:000139 **QTY:**1
Speedlay End Covers, Webbing, Sides Over Rollers with Velcro Center, 1 Cover on Each Side

A webbing restraint shall be located on each end of the preconnected speedlays. The webbing shall be a two-piece design and one (1) side of each piece shall be wrapped around the crosslay rollers. Each piece shall be attached to each other in the center of the speedlays using velcro.

Option ID:901232 **QTY:**1
NO Crosslay Hose Bed Loading Lights

No crosslay hose bed loading lights shall be installed on this unit.

Option ID:910701 **QTY:**1
Pre-connect, Crosslay/Speedlay, 1-1/2", NST

1-1/2" PRE-CONNECT

A 1-1/2" pre-connect with 2" plumbing shall be provided. The pre-connect shall terminate out a swivel male NST threads.

Option ID:910679 **QTY:**1
Speedlay Load, 200' of 1-3/4" Hose, Double Stack

The 1-1/2" speedlay pre-connect shall have a capacity of 200' of 1-3/4" double jacket fire hose stored in a double stack.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:UPO0050044 **QTY:**1
Valve, 2", Akron, Manual, 8820, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)

An Akron Brass, model 8820, 2" Swing-Out™ valve shall be provided. The valve shall

have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls Pistol Grip locking handle at the Side pump control panel. The centerline of the valve control shall be no more than 72" vertically above the platform that serves as the pump operator's position.

Shop Note: Controller is a Sidemount Bezel Pistol Grip controller

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Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:910526 **QTY:**1
Preconnect Discharge

The discharge shall be designated as a pre-connect so no cap and chain shall be required.

Option ID:910701 **QTY:**1
Pre-connect, Crosslay/Speedlay, 1-1/2", NST

1-1/2" PRE-CONNECT

A 1-1/2" pre-connect with 2" plumbing shall be provided. The pre-connect shall terminate out a swivel male NST threads.

Option ID:910679 **QTY:**1
Speedlay Load, 200' of 1-3/4" Hose, Double Stack

The 1-1/2" speedlay pre-connect shall have a capacity of 200' of 1-3/4" double jacket fire hose stored in a double stack.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:UPO0050045 **QTY:**1
Valve, 2", Akron, Manual, 8820, Stainless Ball, Innovative Controls Pistol Grip Swing Handle (Side Pump Panel Setup)

An Akron Brass, model 8820, 2" Swing-Out™ valve shall be provided. The valve shall

have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls Pistol Grip locking handle at the Side pump control panel. The centerline of the valve control shall be no more than 72" vertically above the platform that serves as the pump operator's position.

Shop Note: Controller is a Sidemount Bezel Pistol Grip controller

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Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:910526 **QTY:**1
Preconnect Discharge

The discharge shall be designated as a pre-connect so no cap and chain shall be required.

Option ID:100783 **QTY:**1
Booster Reel, Hannay, Steel, Hannay Silver, Electric Rewind, 150' of 3/4" Hose Capacity

BOOSTER REEL

A Hannay steel fabricated electric rewind booster reel, with a capacity of 150' of 3/4" booster hose, shall be installed on the apparatus. The booster reel shall be painted Hannay Silver. An automatic brake and an auxiliary manual rewind crank shall be supplied. One (1) set of rollers shall be installed.

Option ID:910703 **QTY:**1
Booster Reel Location, Dunnage, Above the Pump

The booster reel shall be mounted above the pump in the dunnage compartment.

Option ID:910534 **QTY:**1
Foam Capable Discharge

The discharge shall be foam capable.

Option ID:100648 **QTY:**1
Valve, 1-1/2", Akron, Manual, 8815, Stainless Ball, Innovative Controls Push Pull Controller

An Akron Brass, model 8815 1-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls push/pull T- handle.

Option ID:100796 **QTY:**1
Booster Hose, 3/4", 800 lb Test, 150', (1) 100' Section, (1) 50' Section

BOOSTER HOSE

One (1) section of 100' x 3/4" and one (1) section of 50' x 3/4" of 800 lb. test booster hose coupled with 1" NH thread pyrolite couplings shall be installed on the booster reel.

Option ID:100830 **QTY:**1
Rewind Switches, Booster Reel, (1) Driver's Side Pump Panel, (1) Foot Switch Below Running Board

One (1) rubber covered push button switch shall be installed on the driver's side pump panel and one (1) foot switch shall be located below the driver's side running board for the rewind control of the booster reel.

Option ID:100451 **QTY:**1
Chassis Air, Blow-Out, Booster Reel, Driver's Side Pump Panel

CHASSIS SUPPLIED AIR BLOW-OUT

A valve shall be installed on the driver's side pump panel for the booster hose reel. This shall allow air supplied by the chassis air tanks to be applied to the hose reel so any water can be blown out of the hose for cold weather storage.

Option ID:100763 **QTY:**1
Booster Reel, Hannay, Aluminum, Polished, Electric Rewind, 100' of 3/4" Hose Capacity

BOOSTER REEL

A Hannay aluminum fabricated electric rewind booster reel, with a capacity of 100' of 3/4" booster hose, shall be installed on the apparatus. The booster reel shall have a polished finish and shall not be painted. An automatic brake and an auxiliary manual rewind crank shall be supplied. One (1) set of rollers shall be installed.

Option ID:910703 **QTY:**1
Booster Reel Location, Dunnage, Above the Pump

The booster reel shall be mounted above the pump in the dunnage compartment.

Option ID:100648 **QTY:**1
Valve, 1-1/2", Akron, Manual, 8815, Stainless Ball, Innovative Controls Push Pull Controller

An Akron Brass, model 8815 1-1/2" Swing-Out valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by a manual actuator installed on the valve. The manual actuator shall be controlled by an Innovative Controls push/pull T- handle.

Option ID:UPOxxxxxxx **QTY:**1
Booster Hose, 3/4", 800 lb Test, 150', (1) 100' Section (1) 50' section

Booster Hose, 3/4", 800 lb Test, 150', (1) 100' Section (1) 50' section

Option ID:100831 **QTY:**1
Rewind Switches, Booster Reel, (1) Officer's Side Pump Panel, (1) Foot Switch Below Running Board

One (1) rubber covered push button switch shall be installed on the officer's side pump panel and one (1) foot switch shall be located below the officer's side running board for the rewind control of the booster reel.

Option ID:100513 **QTY:**1
Deluge, Center, 3", Victaulic

3" DELUGE RISER DISCHARGE

A 3" discharge for the deluge shall be located above the pump module. The discharge shall be centered in the pump module and the riser shall terminate with a 3" Victaulic coupling.

Option ID:UPO0048884 **QTY:**1
Valve, 3", Akron, Electric, 8630, Stainless Ball, 9327 Navigator Pro Controller (Valve Only)

An Akron Brass, model 8630, 3" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass electric actuator installed on the valve. The electric actuator shall have a 16:1 gear ratio, which actuates from fully open to fully closed in five (5) seconds, a clutchless motor, and utilize an electric controller with current limiting design.

The electric actuator shall be controlled by an Akron Brass, model 9327, Navigator™ Pro electric valve controller. The unit shall carry a five (5) year warranty.

Option ID:000368 **QTY:**1
Pressure Gauge, 2-1/2", Class 1, Liquid Filled - PSI 0-400

The discharge shall have a 2-1/2" gauge with a display range from 0 to 400 PSI.

Option ID:005367 **QTY:**1
Extend-A-Gun, Manual, TFT, 18", XG18VL-XL, For Crossfire Monitor

EXTEND-A-GUN

One (1) Task Force Tips manual Extend-A-Gun, model XG18VL-XL, shall be supplied. The Extend-A-Gun shall allow for an 18" extension of the waterway for the Crossfire monitor by lifting a quick release and raising or lowering the non-rotating pipe into a locked position. The extension shall have a 3" waterway, a hard coat anodized finish, and built-in sensors for connection to the open door alarm.

Option ID:006634 **QTY:**1
Deck Gun, Manual, TFT Crossfire XFT-NJ, 3" NH Inlet

DECK GUN

One (1) Task Force Tips Crossfire, model XFT-NJ, manual monitor with 3" NH thread inlet shall be provided on the apparatus. The waterway shall be 3-1/4", which shall allow for the delivery of up to 1250 GPM with low friction loss. Horizontal rotation is securely locked with a simple lever, and position can be visually confirmed. Seven (7) turns of the hand wheel shall change the discharge elbow from vertical to the stop elevation. The monitor shall include a highly visible pressure gauge and built-in automatic drain valve. For corrosion resistance the monitor shall be constructed from hardcoat anodized aluminum with a red powder coat interior and exterior finish.

Option ID:100417 **QTY:**1
Monitor Color, TFT Red, Powder Coat

MONITOR COLOR

The monitor shall be powder-coated red by the monitor manufacturer and shall not be repainted by the OEM.

Option ID:002593 **QTY:**1
Stacked Tips (Quad) and Stream Shaper, TFT, MST-4NJ, XF-SS10 (2-1/2" NH)

One (1) Task Force Tips, model XF-SS10, 10" stream shaper shall be provided.

One (1) set of Task Force Tips, model MST-4NJ, quad stacked tips with 2-1/2" NH threads shall be provided.

Option ID:UPO0049106 **QTY:**1
Portable Ground Base, TFT, (1) 4 " Inlet, XFH-1NP

One (1) Task Force Tips portable ground base, model XFH-1NP, with one (1) 4" NH inlet shall be provided with the monitor.

Option ID: Discharge Labels **QTY:**1
Discharge Labels - See label order form (required)

See label order form (required)

Option ID:002955 **QTY:**1
Electrical System, Pumper, Weldon V-MUX Multiplex, QL-12 Harnesses, Sealed Switches

ELECTRICAL SYSTEM

Wiring harnesses shall be the automotive type, engineered specifically for the builder's apparatus, and shall meet the following criteria. Under no circumstances shall diodes, resistors, or fusible links be located within the wiring harness. All such components shall be located in an easy to access wiring junction box or the main circuit breaker area. All wire shall meet white book, baseline advanced design transit coach specification and Society of Automotive Engineers recommended practices. It shall be stranded copper wire core with cross-linked polyethylene insulation complying with SAE specification J1128. Each wire shall be hot stamp function coded every three inches starting one inch from the end and continuing throughout the entire harness. In addition to function coding, each wire shall be numbered, colored, and gauge coded.

Wire harnesses shall be protected by 275 degree Fahrenheit minimum high temperature flame retardant loom. All nodes and sealed Deutsch connectors shall be waterproof.

Harnesses shall be modular in design; main harness system subdivided into several smaller sub-harnesses. The harness subsections shall be connected using Deutsch branded, heavy duty, environmentally sealed, connectors with silicone seals and a rear insertion/removal contact system. For isolation of electrical "zones" the harness subsections shall consist of a main harness, a pump harness with a separate pump gauge panel harness, a left body harness with a separate left compartment harness, a right body harness with a separate right compartment harness, and a rear body harness with two separate rear compartment harnesses.

The main harness and three body harnesses shall interconnect at a central, easy to reach location and their connectors shall not be obstructed by other harnesses or fuel/air lines. In addition, the main and body harness connectors shall be color-coded for ease of identification with their respective colors noted on the accompanying electrical diagrams.

Where connectors are not provided by the electrical component manufacturer, all 12-volt lights and other electrical components (excluding rocker and toggle switches) shall connect to the harnesses using Deutsch brand connectors; butt connectors are considered unacceptable.

All Deutsch connectors shall meet the following criteria:

- All connectors shall be rated for three feet submersion in water.
- Temperature range from -67°F to 257°F continuous at rated current.
- All contacts shall be soldered unless a crimping tool or machine is used that gives an even and precise pressure for the terminal being used.
- All contacts shall be pull-tested to ensure their integrity.

WEATHERPROOF DOOR SWITCHES

Because of the harsh environment and susceptibility to moisture on the fire ground, the fire apparatus compartment doors shall utilize weatherproof switches. No Exceptions.

The switches shall be used for activation of the compartment lights and to provide a signal to the door open circuit in the cab.

V-MUX ELECTRICAL MANAGEMENT SYSTEM

The apparatus shall be equipped with a V-MUX Multiplex System. There are several key benefits to multiplexing, one is to reduce the amount of connections in a vehicle's electrical system, because of this it is important to limit the number of modules that control certain functions of the vehicle.

Outputs:

The outputs shall perform all the following items without added modules to perform any of the tasks:

- Load Shedding: The System shall have the capability to Load Shed with 8 levels any output. This means you can specify which outputs (barring NFPA restrictions) you would like Load Shed. Level 1 - 12.9v, Level 2 - 12.5V, Level 3 - 12.1V, Level 4 - 11.7V, Level 5 - 11.3V, Level 6 - 10.9V, Level 7 - 10.5, Level 8 - 10.1. Unlike conventional load shedding devices you can assign a level to any or all outputs. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- Load Sequencing: The System shall be able to sequence from 0 8 levels any output. With 0 being no delay and 1 being a 1-second delay, 2 being a 2-second delay and so on. Sequencing reduces the amount of voltage spikes and drops on your vehicle and can help limit damage to your charging system. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- Output Device: The System shall have solid-state output devices. Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor - Field Effect Transistors); MOS-FETs are solid-state devices with no moving parts to wear out. A typical relay, when loaded to spec, has a life of 100,000 cycles. The life of a FET is more than 100 times that of a relay. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- Flashing Outputs: The System shall be able to flash any output in either A or B phase, and logic is used to shut down needed outputs in park or any one of several combined interlocks. The flash rate can be selected at either 80, or 160 FPM. This means any light can be specified with a multiplex truck with no need to add flashers. Flashing outputs can also be used to warn of problems. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- PWM: The modules shall have the ability to PWM at some outputs so that a Headlight PWM module is not needed. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- Diagnostics: An output shall be able to detect either a short or open circuit.

Inputs:

The inputs shall have the ability to be switched by a ground or battery signal.
The inputs shall be filtered for noise suppression via hardware and software so that RF or dirty power will not trick an input into changing its status.

System Network:

The Multiplex system shall contain a Peer-to-Peer network. A Master-Slave Type network is not suitable for the Fire/Rescue industry. A Peer-to-Peer network means that all the modules are equal on the network; a Master is not needed to tell other nodes when to talk.

System Reliability:

The Multiplex system shall be able to perform in extreme temperature conditions, from -40° to +85° C (-40° to +185° F.) The system shall be sealed against the environment, moisture, humidity, salt or fluids such as diesel fuel, motor oil or brake fluid. The enclosures shall be rugged to withstand being mounted in various locations or compartments around the vehicle. The modules shall be protected from over voltage and reverse polarity.

Option ID:911058 **QTY:**1
Electrical System Test, 12 Volt

12-VOLT SYSTEMS TEST

After completion of the unit, the 12-volt electrical system shall undergo a battery of tests as listed in NFPA, current edition. These tests shall include, but not be limited to:

- Reserve capacity test
- Alternator performance test at idle
- Alternator performance test at full load
- Low voltage alarm test

Certification of the results shall be supplied with the apparatus at the time of delivery.

Option ID:100105 **QTY:**1
Tail Lights, LED, Whelen, M6 Series, Stop-Tail (Combination) (M62BTTC)/Turn (M62TC)/ Backup (M62BU), 3-Light Vertical Individual Bezels (Clear Lenses)

TAIL LIGHTS

A Whelen M6 series LED tail light assembly shall be installed on each side of the rear of the apparatus. Each assembly shall include the following:

- One (1) red LED stop/tail combination light
- One (1) amber LED turn light with arrow
- One (1) clear LED backup light

Each light shall be mounted in an individual chrome flange.

Option ID:002192 **QTY:**1
Switch, Rear Work Light, At Rear/Reverse

REAR WORK LIGHT SWITCH

A switch shall be installed above the tail light bezel on the left side of the rear of the apparatus. The switch shall be wired to the backup lights to provide additional work lighting. The rear work light circuit shall be deactivated when the park brake is disengaged. In addition to the lights being activated by the above switch, the lights shall also come on when the transmission is placed in reverse.

Option ID:008730 **QTY:**1
Turn Signals, (2) in Rub Rail, LED, Truck-Lite, Model 21

MIDSHIP TURN SIGNALS

Two (2) Truck-Lite model 21 LED midship auxiliary/turn signal lights shall be installed in the rub rail, one (1) on each side of the body.

Option ID:100958 **QTY:**1
Ground Lights, LED, T44, Tecniq, Activation by Park Brake

PERIMETER GROUND LIGHTING

Tecniq, model T44-WD0B-1, 4" round LED lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off the apparatus.

The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. These areas shall include, but not be limited to, side running boards and the rear step area.

The lights shall be activated when the parking brake is engaged.

Shop Note: mount lights so the do not interfere with angle of departure

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Option ID:006261 **QTY:**1
Clearance Lights, LED, Grote (65282), Red, Pumper

CLEARANCE LIGHTS

Grote red LED clearance lights shall be installed in the outside corners and rear middle portion of the rear tailboard. Clearance reflectors shall be placed on the apparatus to be in full compliance with applicable ICC and DOT codes and regulations.

Option ID:004882 **QTY:**1
Camera System, Back-Up, Chassis Supplied, OEM Installed

CHASSIS SUPPLIED BACK UP CAMERA SYSTEM

A backup camera system shall be installed in the cab with the chassis. The camera shall be installed on the rear center upper portion of the apparatus.

Option ID:000621 **QTY:**1
Alarm, Door Open Warning Circuit

DOOR OPEN AUDIBLE ALARM

An audible alarm shall be provided and connected to the door open circuitry.

Option ID:100043 **QTY:**1
Intercom System, David Clark 3800, 4 Cab Position, Wired Driver/Officer (H3442), 2 Wired Crew (H3442)

DAVID CLARK INTERCOM SYSTEM

A David Clark 3800 position intercom system shall be provided on the apparatus. The system shall have the option of connecting to mobile radios, allowing all personnel to listen to the radio and selected stations to transmit over the radio. The system shall be of rugged and serviceable modular design. All system components shall be designed as weather tight. The intercom control head shall be located in the optimal position by the apparatus manufacturer unless a specific location is clarified in the shop note.

CAB POSITIONS

The David Clark intercom system shall accommodate one (1) wired driver position, one (1) wired officer position, and two (2) wired crew positions in the chassis cab.

Four (4) David Clark headset plug-in modules shall be installed, one (1) for each wired position. The exact location for the module and plug shall be determined by the apparatus manufacturer unless a specific location is clarified in the shop note.

Two (2) David Clark, model H3442, under the helmet, radio-transmit headset shall be provided, one (1) each for the driver and officer. Each headset shall have a soft head strap designed to be worn under a helmet, a flex microphone boom that rotates 200 degrees for use on either side and an earpiece-mounted microphone on/off button. The microphone shall be noise canceling with a windscreen.

Two (2) David Clark, model H3442, under the helmet, intercom only headsets shall be provided, one (1) for each of the crew positions. Each headset shall have a soft head strap designed to be worn under a helmet, a flex microphone boom that rotates 200 degrees for use on either side and an earpiece-mounted microphone on/off button. The microphone shall be noise canceling with a windscreen.

Each headset shall be complete with a hanger to hold the headset when not in use. The driver's and officer's hangers shall be mounted inboard of each position, and all hangers shall be located in the optimal position based on cab and seat configuration by the apparatus manufacturer unless a specific location is clarified in the shop note.

Shop Note: See dealer provided schematic for the David Clark system in the P:drive. Head sets and head set plugs to placed at SFA standard positions

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Option ID:UPO0050041 **QTY:**1
David Clark Dual Radio Interface Motorola XTL 5000/Bendix King GMH-R

RADIO INTERFACE

Two (2) David Clark mobile radio interface cables shall be supplied with the intercom system. The cables shall be radio specific and shall allow the David Clark intercom system to interface with the Motorola XTL 5000/Bendix King GMH-R mobile radio system. The model of headsets used shall determine which personnel shall have radio transmit ability.

The radio interface cables drop shall be routed to the general area of the termination of the radio antenna(s) or center dash if no antenna is required.

Option ID:911317 **QTY:**1
Upper Zone A, Chassis Supplied and Installed

UPPER ZONE A

The upper zone A warning lights shall be supplied and installed by the chassis manufacturer.

Option ID:UPO0048645 **QTY:**1
Upper Zone C, Warning Lights (4), Whelen, LED, 500 Series (2) Per Side/Top Pair L/R, Surface Mounted

UPPER ZONE C

Four (4) Whelen 500 Series Linear Super-LED lights with chrome-plated flanges shall be recessed in Upper Zone C, on the upper rear face of the body. The warning light shall incorporate six Super-LED, a non-optic hard coated polycarbonate lens, and utilize a metalized reflector with a clear optic collimator for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and sealed lens/reflector assembly shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant.

Option ID: Upper Zone C Light/Lens Color **QTY:**1
Light/Lens Color - The driver's and officer's side lights shall both have red LED and red lenses

The driver's and officer's side lights shall both have red LED and red lenses

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Option ID:UPO0038176 **QTY:**1
Upper Zone B/D, Warning Lights (2), Whelen, LED, 500 Series TIR6

UPPER ZONE B/D SIDE WARNING LIGHTS

Four (4) Whelen 500 Series Linear Super-LED lights with chrome-plated flanges shall be installed, two (2) each in Upper Zone B and Upper Zone D. The warning light shall incorporate six Super-LED, a non-optic hard coated polycarbonate lens, and utilize a metalized reflector with a clear optic collimator for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and sealed lens/reflector assembly shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant.

Option ID: Upper Zone B/D Light/Lens Color **QTY:**1
Light/Lens Color - Red lights/red lenses

Red lights/red lenses

Option ID:110487 **QTY:**1
Lower Zone Warning Lights (4 OEM Provided), A (0), B (1), C (2), D (1), Whelen, LED, M6 Series

LOWER ZONE WARNING LIGHT PACKAGE

Four (4) Whelen M6 Series Linear Super-LED lights with chrome flanges shall be installed in the lower zone of the apparatus to be in accordance with NFPA, current edition. compliance. The warning lights shall incorporate Linear Super-LED and Smart LED technology. The M6 configuration shall consist of eighteen (18) clear Super-LEDs and a clear optic polycarbonate lens. The warning lights, with the aid of two screws, shall have the ability to be installed as surface mount warning lights.

The M6 shall utilize optic collimators and a metalized reflector for maximum illumination. The warning lights shall include an internal flasher with 164 Scan-Lock flash patterns including a variety of CA Title 13 compliant patterns, left/right, top/bottom, in/out, and

steady burn. The lights shall also provide synchronize and low power features.

The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The light engine shall be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC board shall be conformal coated for additional protection.

Shop Note: Two to be mounted at the rear in the lower zone C, and one each side in the rear wheel wells.

Option ID: Lower Zone Light/Lens Color **QTY:**1
Light/Lens Color - The lower zone warning lights shall all have red LED's and red lenses unless otherwise specified.

The lower zone warning lights shall all have red LED's and red lenses unless otherwise specified.

Option ID:003120 **QTY:**1
Traffic Advisor, Whelen, 6-Light, 5mm LED Low-Profile, TAL65, TACTL5 Controller

TRAFFIC ADVISOR

One (1) Whelen model TAL65 LED Traffic Advisor shall be installed on the apparatus. The traffic directional light shall contain six (6) medium intensity LED lamps in a black low profile flat style housing.

A Whelen, model TACTL5 Traffic Advisor control head shall be provided with the traffic advisor. The control head shall be housed in a rugged extruded aluminum case and shall offer four (4) programmable sequence flash patterns.

Option ID:910738 **QTY:**1
Traffic Directional Light Location, Rear Body Face, Recess Mounted

The traffic directional light shall be recess mounted in the rear of the body.

Option ID:007111 **QTY:**1
Air Horns (2), Chassis Supplied, OEM Installed

Air Horns

Two (2) chassis supplied air horns shall be installed by the apparatus body manufacturer.

Option ID:910990 **QTY:**1
Air Horn Locations, Recessed in Front Bumper, (1) Driver's Side / (1) Officer's Side, Inboard

AIR HORN LOCATIONS

Two (2) air horns shall be recess mounted in the front bumper, one (1) in the driver's side inboard and one (1) in the officer's side inboard.

Option ID:000890 **QTY:**1
Air Horn Activation, Push Button on Pump Panel, Driver's Side

AIR HORN ACTIVATION

One (1) air horn button shall be provided on the driver's side pump panel. The button shall be red in color and include a label reading "AIR HORN".

Shop Note: This is to be a rocker switch

Option ID:010221 **QTY:**1
Power and Ground Lead, 12V Drop, Battery Direct, 30 Amp, 6-Position Distribution Panel

12V POWER LEAD DROP

One (1) 12 volt power lead drop with a 6-position Blue Sea Systems ATO style fuse block with cover shall be provided. The power lead drop shall consist of one (1) hot and one (1) ground wire run from the batteries to the specified location. The power lead drop shall be battery direct and have a minimum of a 30 amp fuse provided with the power circuit. The distribution panel shall be designed with a grounding pad and compact, lightweight construction. The distribution panel shall be capable of using ATC/ATO blade fuses or ATC style DC circuit breakers.

Shop Note: A disconnect switch will be located adjacent to the lead.

Option ID:900021 **QTY:**1
Power Lead Location, In R3 Cmpt

The power lead shall be located in the R3 compartment.
The exact location will be determined by the apparatus manufacturer, unless a specific location is clarified in the shop note.

Shop Note: Located on the forward bulkhead.

Option ID:UPO0045878 **QTY:**1
Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM

FIRETECH 12V SURFACE-MOUNT SCENE LIGHTS

Two (2) Firetech LED series, model FT-GESM, surface mount lights shall be installed on the apparatus. Each light shall be mounted with four (4) screws to a flat surface. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

Each light shall have twenty-four (24) white LEDs. They shall each operate at 12 volts DC, draw 6/3 amps and generate 20,000 lumens of light. The lens shall redirect the light

along the vehicle and out onto the working area. Each lamphead housing shall be aluminum with a chrome bezel.

Option ID:910851 **QTY:**1
Lighting Location, Rear Face of Body, Both Sides

The two (2) lights shall be installed on the rear face of the body, one (1) on each side.

Option ID:000869 **QTY:**1
Lighting Activation, In Cab and On Pump Panel, 'REAR SCENE', Rocker Switches

The rear scene light(s) shall be controlled by one (1) switch located in the chassis cab and one (1) located at the pump panel. Each switch shall have an indicator that shall illuminate when the switch is in the “ON” position. The light(s) shall be controlled by one (1) switch at each location. Each switch shall be labeled "REAR SCENE."

Option ID:UPO0045879 **QTY:**1
Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM

FIRETECH 12V SURFACE-MOUNT SCENE LIGHTS

Two (2) Firetech LED series, model FT-GESM, surface mount lights shall be installed on the apparatus. Each light shall be mounted with four (4) screws to a flat surface. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

Each light shall have twenty-four (24) white LEDs. They shall each operate at 12 volts DC, draw 6/3 amps and generate 20,000 lumens of light. The lens shall redirect the light along the vehicle and out onto the working area. Each lamphead housing shall be aluminum with a chrome bezel.

Option ID:910854 **QTY:**1
Lighting Location, Side Face of Body, Forward, Both Sides

The two (2) lights shall be installed forward on the side face of the apparatus body, one (1) on each side.

Option ID:110848 **QTY:**1
Lighting Activation, Pair, In Cab and On Pump Panel, 'LEFT SCENE' and 'RIGHT SCENE', Rocker Switches

The driver's side and officer's side scene light(s) shall each be controlled by a rocker switch located in the chassis cab, for a total of two (2). There shall also be one (1) switch located on the pump panel for each side of scene lights, for a total of two (2). The switch at the pump panel shall have an indicator that shall illuminate when the switch is in the “ON” position.

The activation for the driver's side scene lights in the cab and the pump panel switch shall be labeled "LEFT SCENE" and the officer's side shall be labeled "RIGHT SCENE."

Option ID:UPO0045880 **QTY:**1
Scene Lights (2), 12V, Firetech, Surface Mount, LED, Chrome Housing, Guardian Elite, FT-GESM

FIRETECH 12V SURFACE-MOUNT SCENE LIGHTS

Two (2) Firetech LED series, model FT-GESM, surface mount lights shall be installed on the apparatus. Each light shall be mounted with four (4) screws to a flat surface. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

Each light shall have twenty-four (24) white LEDs. They shall each operate at 12 volts DC, draw 6/3 amps and generate 20,000 lumens of light. The lens shall redirect the light along the vehicle and out onto the working area. Each lamphead housing shall be aluminum with a chrome bezel.

Option ID:910853 **QTY:**1
Lighting Location, Side Face of Body, Rearward, Both Sides

The two (2) lights shall be installed on the rear side face of the body, one (1) on each side.

Option ID:110848 **QTY:**1
Lighting Activation, Pair, In Cab and On Pump Panel, 'LEFT SCENE' and 'RIGHT SCENE', Rocker Switches

The driver's side and officer's side scene light(s) shall each be controlled by a rocker switch located in the chassis cab, for a total of two (2). There shall also be one (1) switch located on the pump panel for each side of scene lights, for a total of two (2). The switch at the pump panel shall have an indicator that shall illuminate when the switch is in the “ON” position.

The activation for the driver's side scene lights in the cab and the pump panel switch shall be labeled "LEFT SCENE" and the officer's side shall be labeled "RIGHT SCENE."

Option ID:900717 **QTY:**1
Chassis Paint, Chassis Manufacturer Painted, Single Tone

CHASSIS PAINT

The single tone chassis cab shall be painted by the chassis manufacturer.

Option ID:009171 **QTY:**1
Body Paint, Single Tone, Pumper, Aluminum Material

BODY PAINT PREPARATION

The apparatus body and components shall be metal finished as follows to provide a superior substrate for painting:

- All aluminum sections of the body shall undergo a thorough cleaning process, starting with a phosphoric acid solution to begin the etching process, followed by a complete rinse. The next step shall consist of a chemical conversion coating applied to seal the metal substrate and become part of the aluminum surface for greater film adhesion.
- After the cleaning process, the body and its components shall be primed with a high solids primer and the seams shall be caulked.
- All bright metal fittings, if unavailable in stainless steel or polished aluminum, shall be heavily chrome plated. Iron fittings shall be copper underplated prior to chrome plating.

PAINT PROCESS

The paint process shall follow the strict standards as set forth by Guidelines.

The body shall go through a three-stage paint process: primer coat, base coat (color), and clear coat. In the first stage of the paint process, the body shall be coated with primer to achieve a total thickness of 2-4 mills. In the second stage of the paint process, the body shall be painted with BTLV650 high solids polyurethane base coat. A minimum of two to three coats of paint shall be applied to achieve covering. In the final stage of the paint process, the body shall be painted with a clear topcoat. A minimum of two to three coats shall be applied to achieve a total dry film thickness of 2-3 mills.

As part of the curing process, the painted body shall go through a Force Dry / Bake Cycle process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.

HAND POLISHED

After the Force Dry / Bake Cycle and ample cooldown time, the coated surface shall be sanded using 3M 1000, 1200, and/or 1500 grit sandpaper to remove surface defects. In the final step, the surface shall be buffed with 3M super duty compound to add extra shine to coated surface. No more than .5 mil of clear shall be removed in this process.

Option ID:UPO0048646 **QTY:**1
Body Paint Color, Pumper, Single Tone, Red, AkzoNobel, FLNA30194

BODY PAINT COLOR

The body shall be painted with High Solids Polyurethane Base Coat.

The single tone body shall be painted AkzoNobel #30194 red.

Option ID:901234 **QTY:**1
Overlays, Pump Module Structure, Match Pump Panel, Side Mount

PUMP MODULE STRUCTURE OVERLAYS

The side mount structure overlays shall be the same material as the pump panels on each side of the pump compartment. The tubular structure will remain unpainted aluminum.

Option ID:001170 **QTY:**1

Under Body Finish, Two-Step Undercoating Process

UNDERCOATING

The apparatus shall undergo a two-step undercoating process. The first step shall be a rubberized polyurethane base compound applied after the body has been primed. The materials used incorporate unused paint products to reduce the amount of waste released into the environment. This coat shall be applied to all hidden pockets and surfaces that are not visible after completion.

As a final step, the entire underside of the body shall be coated with a bituminous based automotive type undercoating when the apparatus is completed. During this application, special care shall be taken to avoid spraying the product on air lines, cables, or other items that would hinder normal maintenance.

Option ID:006089 **QTY:**1
Corrosion Protection, Electrolysis Corrosion Kontrol (ECK)

CORROSION PREVENTION

One (1) 3.75 ounce tube of Electrolysis Corrosion Kontrol (ECK) shall be provided to use when additional items are mounted to the apparatus. ECK protects aluminum and stainless steel against electrolytic reaction, isolates dissimilar metals and gives bedding protection for hardware and fasteners. ECK contains an anti-seizing lubricant for threads. ECK is dielectric and perfect for use with electrical connectors.

Option ID:001033 **QTY:**1
Sample Paint Card with Paint Formula

SAMPLE PAINT CARD

One (1) sample paint card shall be provided with the apparatus. The card shall show an example of the apparatus body color on one side and have the specific paint formula printed on the reverse side.

Option ID:UPO0048647 **QTY:**1
Reflective Lettering, Gold With White Outline and Black Shadow

Reflective Lettering, Gold With White Outline and Black Shadow

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Option ID:120211 **QTY:**1
3" Lettering (40), Reflective, With Outline

REFLECTIVE LETTERING - 3"

Up to forty (40) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 3" tall with black outline and shadow.

Option ID:120221 **QTY:**1
4" Lettering (40), Reflective, With Outline

REFLECTIVE LETTERING - 4"

Up to forty (40) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 4" tall with black outline and shadow.

Option ID:120229 **QTY:**1
6" Lettering (10), Reflective, With Outline

REFLECTIVE LETTERING - 6"

Up to ten (10) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 6" tall with black outline and shadow.

Option ID:UPO0048648 **QTY:**1
16 - Lettering, Reflective, With Outline, 5"

REFLECTIVE LETTERING - 5"

Up to sixteen (16) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 5" tall with black outline and shadow.

Option ID:120254 **QTY:**1
10" Lettering (15), Reflective, With Outline

REFLECTIVE LETTERING - 10"

Up to fifteen (15) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 10" tall with black outline and shadow.

Option ID:120142 **QTY:**1
18" Lettering (10), Reflective

REFLECTIVE LETTERING - 18"

Up to ten (10) reflective letters shall be provided and installed on the apparatus. The letters shall be approximately 18" tall with black outline and shadow.

Option ID:900879 **QTY:**1
Front Cab Striping, Wrap to Grill

REFLECTIVE STRIPING - FRONT CAB

The retroreflective stripe located on the sides of the apparatus shall wrap around the front of the chassis cab and terminate at chassis grill.

Option ID:004522 **QTY:**1
Rub Rail Striping, 2", Silver, Reflective, Pumper

RUB RAIL REFLECTIVE STRIPING

There shall be 2" reflective striping installed in the rub rail channel. The reflective striping shall be diamond grade quality material for increased visibility. The reflective shall be silver in color.

Option ID:008673 **QTY:**1
Body Striping, Pumper, 1"-4"-1", Z Transition

REFLECTIVE STRIPING

3M Scotchlite Retroreflective striping shall be applied to the exterior of the apparatus and shall conform to the reflectivity requirements in accordance with NFPA, current edition.

The striping shall consist of:

- 1” retroreflective stripe
- 1” gap
- 4” retroreflective stripe
- 1” gap
- 1” retroreflective stripe

The striping shall be low across the front of the chassis and along the sides up to the first compartment on each side where it shall transition to a point in the upper compartments, where it then shall run level to the back edge of the body. Where the stripe transitions from low to high, it shall be a “Z” design.

Option ID:900883 **QTY:**1
Upper Stripe Color, Gold

The upper stripe shall be gold.

Option ID:900906 **QTY:**1
Main Stripe Color, White

The main stripe shall be white.

Option ID:900919 **QTY:**1
Lower Stripe Color, Gold

The lower stripe shall be gold.

Option ID:007893 **QTY:**1
Chevron Color, Red / Yellow, 3M 1172EC and 3991

CHEVRON COLOR - RED/YELLOW

The chevron striping shall consist of red, 3M part number 1172 EC, and yellow, 3M part number 3991, and shall meet the chevron color requirements in accordance with NFPA, current edition.

Only 3M Diamond Grade VIP Reflective Striping shall be used. 3M Diamond Grade VIP Reflective Striping is a wide-angle prismatic lens reflective sheeting designed for the

production of durable traffic control signs and delineators that are exposed vertically in service. This sheeting is designed to provide higher sign brightness than sheeting's that use glass bead lenses. It is intended to also provide high sign brightness in the legibility distance where other sheeting's do not. If something other than 3M is being used, third party documentation must be provided with the bid to prove it is compliant with Federal DOT and NFPA, current edition.

Option ID:006009 **QTY:**1
Chevron Layout, Rear Body Surface, Painted Storage Doors

CHEVRON STRIPING - REAR BODY

Retroreflective striping shall cover at least 50% of the rear-facing vertical surfaces in accordance with NFPA, current edition. The striping shall be in a chevron pattern sloping downward and away front the centerline of the apparatus at an angle of 45 degrees. Each stripe shall be a minimum of 6" in width. The striping shall consist of a solid base layer of reflective material and alternate between the exposed base layer material and durable, transparent, acrylic colored film.

The chevron pattern shall include rear face of the body and any painted storage compartment doors.

Option ID:000861 **QTY:**1
Chevron, Front Bumper, Match Rear Chevron

CHEVRON STRIPING - FRONT BUMPER

Retroreflective striping shall be installed on the vertical surfaces of the front bumper. The striping shall be a chevron pattern sloping downward and away from the centerline of the apparatus at an angle of 45 degrees. Each stripe shall be 6" wide and shall be applied to the majority of the flat surface of the front of the bumper. The chevron striping colors shall match that of the rear of the apparatus.

Shop Note: T-1 door will not be Chevron

Option ID:UPO0048649 **QTY:**1
Decals (4), Reflective, Custom on Door, Customer Supplied, OEM Installed

REFLECTIVE DECALS – CUSTOM

Four (4) custom door reflective decals shall be supplied by the customer and installed by the OEM manufacturer. The decals shall be discussed at the pre-construction meeting.

Option ID:RFW0002 **QTY:**1
General Two (2) Years or 36,000 Miles Limited Warranty

GENERAL TWO (2) YEARS or 36,000 MILES LIMITED WARRANTY

Purchaser shall receive a General Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0002. The warranty certificate

is incorporated by reference into this proposal, and included with this proposal or available upon request.

Option ID:RFW0502 **QTY:**1
Body Structure (Aluminum) Ten (10) Years or 100,000 Miles Limited Warranty

BODY STRUCTURE (ALUMINUM) TEN (10) YEARS or 100,000 MILES LIMITED WARRANTY

Purchaser shall receive a Body Structure (Aluminum) Ten (10) Years or 100,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0502. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

Option ID:RFW0202 **QTY:**1
Electrical Two (2) Years or 36,000 Miles Limited Warranty

ELECTRICAL TWO (2) YEARS or 36,000 MILES LIMITED WARRANTY

Purchaser shall receive a Electrical Two (2) Years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0202. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

Option ID:RFW0800 **QTY:**1
Plumbing and Piping (Stainless Steel) Ten (10) Years or 100,000 Miles Limited Warranty

PLUMBING AND PIPING (STAINLESS STEEL) TEN (10) YEARS or 100,000 YEARS LIMITED WARRANTY

Purchaser shall receive a Plumbing and Piping (Stainless Steel) Ten (10) Years or 100,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0800. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

Option ID:WLF800 **QTY:**1
Warranty, Water Tank, UPF, Standard Lifetime

WATER TANK WARRANTY

The tank shall be complete with a lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. Full details shall be provided in the complete warranty document.

Option ID:RFW0515 **QTY:**1
Body Substructure (Galvanized) Twenty(20) Years or 100,000 Miles Limited Warranty

Body Substructure (GALVANIZED) TWENTY (20) YEARS or 100,000 MILES LIMITED WARRANTY

Purchaser shall receive a Body Substructure (Galvanized) Twenty(20) Years or 100,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0515. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

Option ID:RFW0710 **QTY:**1
Paint and Finish (Exterior Clear coated) Ten (10) Years Limited Warranty

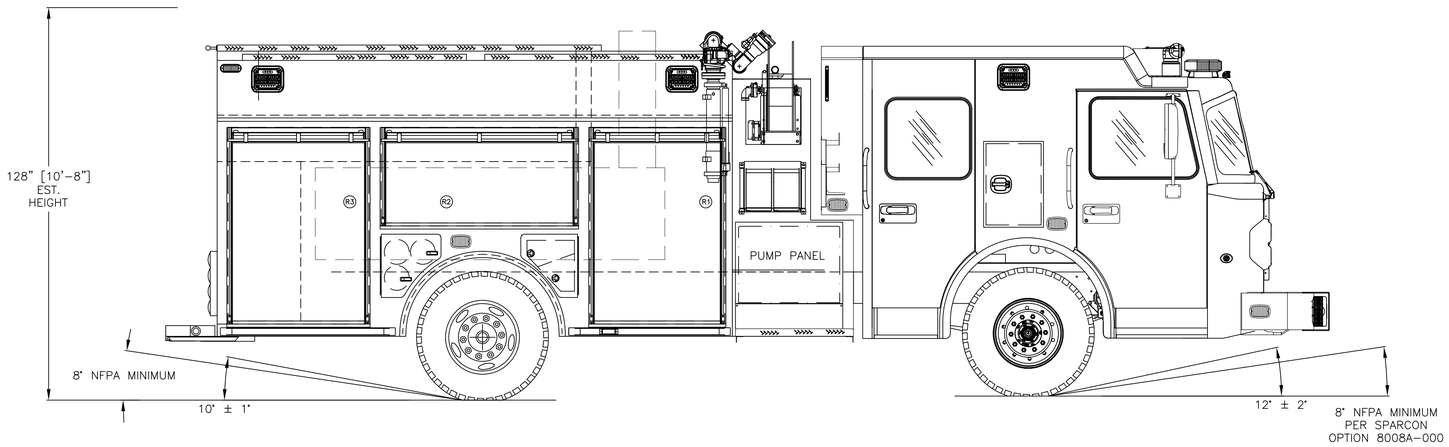
PAINT AND FINISH (EXTERIOR CLEAR COATED) TEN (10) YEARS LIMITED WARRANTY

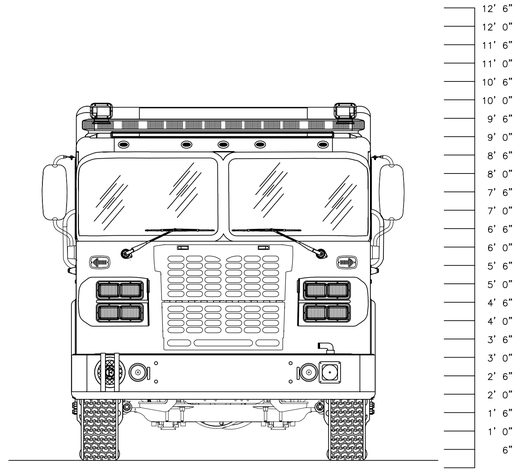
Purchaser shall receive a Paint and Finish (Exterior Clear coated) Ten (10) Years limited warranty in accordance with, and subject to, warranty certificate RFW0710. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.

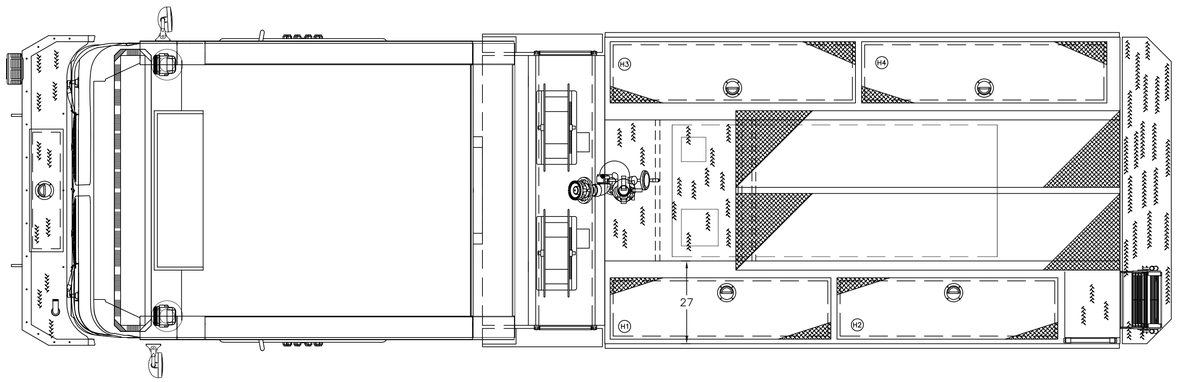
Option ID:W05810-A **QTY:**1
Warranty, Pump, Waterous, Standard 7 Year

PUMP WARRANTY

The fire pump shall be warranted by Waterous for a period of seven (7) years from the date of delivery to the fire department or seven and one-half (7-1/2) years from the shipment date by Waterous, whichever period expires first. Full details shall be provided in the complete warranty document.

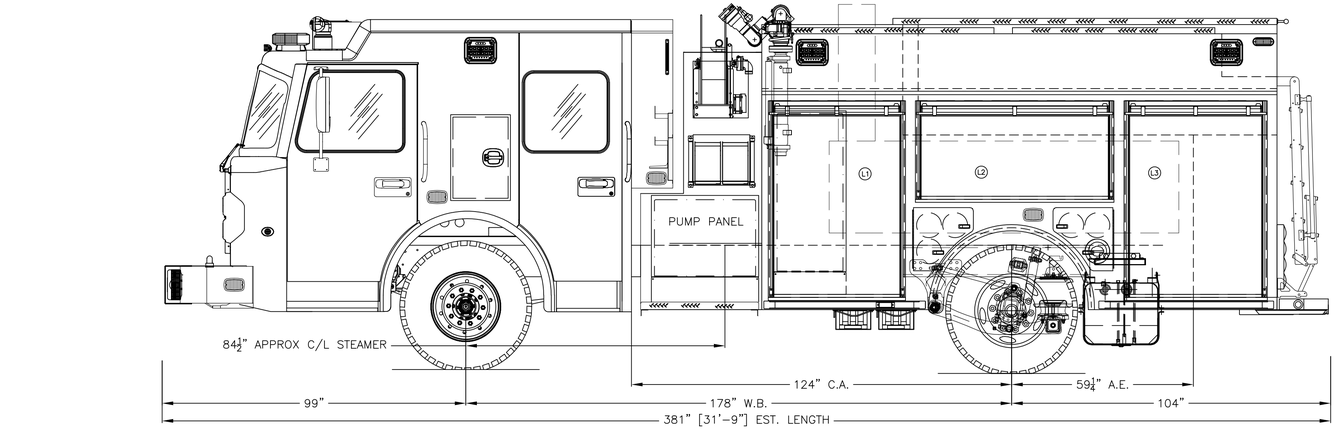


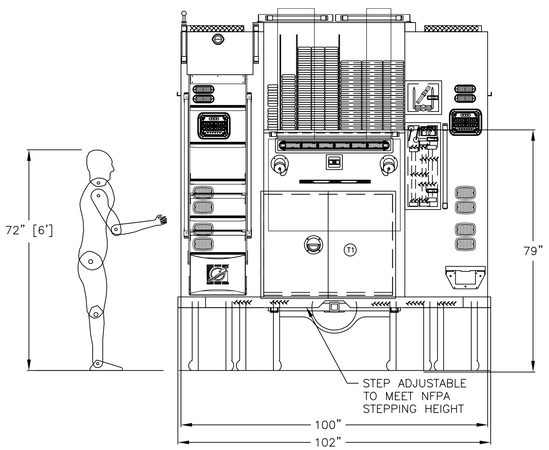




COMPARTMENT DIMENSIONS					
COMPT.	DOOR OPENING	INTERIOR	DIVIDE HEIGHT	DEPTH UPPER	DEPTH LOWER
L1	41"W x 58"H	44"W x 67"H	N/A	25"	25"
L2	61"W x 26"H	68"W x 35"H	N/A	25"	N/A
L3	43"W x 58"H	46"W x 67"H	N/A	25"	25"
R1	41"W x 58"H	44"W x 67"H	27"	14"	25"
R2	61"W x 26"H	68"W x 35"H	N/A	14"	N/A
R3	43"W x 58"H	46"W x 67"H	27"	14"	25"
T1	42"W x 32"H	46"W x 44"H	N/A	N/A	25"
H1-2	18"W x 70"L	25"W x 73"L	N/A	17"	17"
H3-4	18"W x 75"L	25"W x 78"L	N/A	17"	17"

GROUND LADDERS & PIKE POLES			
ITEM	DESCRIPTION	MODEL #	QTY
A	24' 2-SEC EXTENSION	900-A	1
B	14' ROOF	775-A	1
C	10' FOLDING ATTIC	585-A	1
D	PIKE POLE	-	2





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REVISION HISTORY

REV	INT.	DATE	DESCRIPTION
01	Brodd	02/21/25	ORIGINAL LAYOUT

PROPOSAL

CHASSIS:	SPARTAN METRO STAR MFD METRO-FLEX W/10" RAISED ROOF
ENGINE:	CUMMINS X10 500HP WITH ALLISON 4000 EVS
PUMP:	WATEROUS CXSPA 1500 GPM
WATER TANK:	500 U.S. GAL
FOAM CELL:	20 U.S. GAL
BODY MATERIAL:	1/8" ALUMINUM
HOSE BED:	112 CUBIC FEET
GENERATOR:	N/A
COMPARTMENTS:	230 CUBIC FEET

SMEAL
REV GROUP

RIALTO FIRE DEPARTMENT

MODEL:	UNI BODY PUMPER		
DEALERSHIP:	FIRE APPARATUS SOLUTIONS		
SCALE: 1/2" = 1'	DRAWN BY: D.Brodd	DATE: 02/21/2025	
SIZE: 24" X 36"	DRAWING NO: XXXXX	REV: 01	
SHEET: 1 OF 1			