Quotation

	Description	Qty.
VEHICLE		
MODEL	**Metro Star**	1
CUSTOMERS / OEMS	**Spartan ERV (CMF1000)**	1
MODEL YEAR	**Model Year - 2014**	1
COUNTRY OF SERVICE	**Country of Service United States Of America**	1
APPARATUS TYPE	**Apparatus Type Pumper**	1
VEHICLE TYPE	**Vehicle Type Straight Truck**	1
AXLE CONFIGURATION	**Axle Configuration 4x2 (Rear Axle Drive Only)**	1
GROSS AXLE WEIGHT RATINGS FRONT	**GAWR Front 21500#**	1
GROSS AXLE WEIGHT RATINGS REAR	**GAWR Rear 33000#**	1
PUMP PROVISION	**Pump Provision Driveline Midship**	1
CAB		
CAB STYLE	**Cab Style ELFD 20" Raised Roof**	1
OCCUPANT PROTECTION	**Occupant Protection Advanced Protection System**	1
CAB FRONT FASCIA	**Cab Frt Fascia Classic**	1
FRONT GRILLE	**Cab Frt Grille Hinged Classic Styled**	1
CAB UNDERCOAT	**Cab Undercoat**	1
CAB SIDE DRIP RAIL	**Cab Side Drip Rail**	1
CAB PAINT EXTERIOR	**Cab Paint Exterior Two Tone**	1
CAB PAINT MANUFACTURER	**Cab Paint Manufacturer PPG**	1
CAB PAINT PRIMARY/LOWER COLOR	**Cab Paint Primary/Lower Color PPG Red FBCH 72679 ALT**	1
CAB PAINT SECONDARY/UPPER COLOR	**Cab Paint Sec/Upper Color PPG Black FBCH 9700**	1
CAB PAINT EXTERIOR BREAKLINE	**Cab Paint Exterior Breakline Classic**	1
CAB PAINT PINSTRIPE	**Cab Paint Pinstripe 1/2" Gold Reflective**	1
CAB PAINT WARRANTY	**Cab Paint Warranty 2014 (10) Year/100,000 Miles**	1
CAB PAINT INTERIOR	**Cab Paint Int Zolatone Silver Gray**	1
CAB ENTRY DOORS	**Cab Entry Doors (4)**	1
CAB ENTRY DOOR TYPE	**Cab Entry Door Type Full Length**	1
CAB INSULATION	**Cab Insulation**	1
REAR CAB ROOF MODIFICATION	**Rear Cab Roof Modification PPHE 20"RR**	1
LH EXTERIOR REAR COMPARTMENT	**LH Ext Rr Cmpt 21"H x 17"W/32"H Hng Dr**	1
LH EXTERIOR REAR COMPARTMENT LIGHTING	**LH Ext Rr Cmpt Lt LED Strip Lt SoundOff Signal 10"**	1
LH EXTERIOR COMPARTMENT INTERIOR FINISH	**LH Exterior Compartment Interior Finish DA Sand**	1
RH EXTERIOR REAR COMPARTMENT	**RH Ext Rr Cmpt 21"H x 17"W/32"H Hng Dr**	1
RH EXTERIOR REAR COMPARTMENT LIGHTING	**RH Ext Rr Cmpt Lt LED Strip Lt Amdor Luma-Bar 11"**	1
RH EXTERIOR COMPARTMENT INTERIOR FINISH	**RH Exterior Compartment Interior Finish DA Sand**	1

PUMP PANEL CUTOUT	**Pump Panel Cutout**	1
SHIPPING COVER REARWALL CUTOUT	**SHIPPING COVER REARWALL CUTOUT (Bustle Back Cabs)**	1
CAB STRUCTURAL WARRANTY	**Cab Structural Warranty 2014 (10) Year/100,000 Miles**	1
CAB TEST INFORMATION	**Cab Test Information Crash Test ECE-R29/SAE J2420/SAE J2422**	1

ELECTRICAL POWER DISTRIBUTION

ELECTRICAL SYSTEM	**Elec System 12V DC MUX**	1
MULTIPLEX DISPLAY	**MUX Display Weldon VFD Display**	1
DATA RECORDING SYSTEM	**Data Recording Sys Vehicle Data Weldon MUX**	1
ACCESSORY POWER	**Accessory Pwr & Gnd Stud 40A Batt Dir & 15A Ign Sw**	1
AUXILIARY ACCESSORY POWER	**Aux Acc Pwr & Gnd Stud Bhd Sw Pnl 40A Mstr Sw**	1
ADDITIONAL ACCESSORY POWER	**Addl Acc Pwr & Gnd Stud Eng Tnl Side Bhd Drv Seat 40A Batt Dir**	1
EXTERIOR ELECTRICAL TERMINAL COATING	**Exterior Electrical Terminal Coating Spray On Plasti Dip**	1

ENGINE

ENGINE	**Engine Diesel 380HP Cummins ISL9 - EPA 2013**	1
CAB ENGINE TUNNEL	**Cab Engine Tunnel Small/Medium**	1
DIESEL PARTICULATE FILTER CONTROLS	**DPF Ctrl Regeneration Sw & Inhibit Sw**	1
ENGINE PROGRAMMING HIGH IDLE SPEED	**Engine Programming High Idle Speed 1250 RPM**	1
ENGINE HIGH IDLE CONTROL	**Engine High Idle Ctrl Manual and Automatic**	1
ENGINE PROGRAMMING ROAD SPEED GOVERNOR	**Engine Programming Road Speed Governor Enabled**	1
AUXILIARY ENGINE BRAKE	**Aux Engine Brake VG Turbo**	1
AUXILIARY ENGINE BRAKE CONTROL	**Aux Engine Brake Ctrl On/Off Sw Pnl**	1
ELECTRONIC ENGINE OIL LEVEL INDICATOR	**Elec Engine Oil Level Indicator**	1
FLUID FILLS	**Fluid Fills Fwd For Med Displacement Cap**	1
ENGINE DRAIN PLUG	**Engine Drain Plug**	1
ENGINE WARRANTY	**Engine Warranty Cummins (5) Year/100,000 Miles**	1
REMOTE THROTTLE CONTROL	**Rmt Throttle Ctrl PSG Fire Research In Control 400**	1
REMOTE THROTTLE HARNESS	**Rmt Throttle Harness PSG Fire Rsrch In Control 300/400 Top Mnt**	1
ENGINE PROGRAMMING REMOTE THROTTLE	**Engine Program Rmt Throttle Off**	1
ENGINE PROGRAMMING IDLE SPEED	**Engine Programming Idle Speed 700 RPM**	1

COOLING

ENGINE FAN DRIVE	**Engine Fan Drive Clutch**	1
ENGINE COOLING SYSTEM	**Engine Cooling Sys Serial Flow Medium**	1
ENGINE COOLING SYSTEM PROTECTION	**Engine Cooling System Protection Light Duty Skid Plate**	1
ENGINE COOLANT	**Engine Coolant Extended Life**	1
ELECTRONIC COOLANT LEVEL INDICATOR	**Elec Low Coolant Level Indicator**	1
ENGINE PUMP HEAT EXCHANGER	**Engine Pump Heat Exchanger**	1

COOLANT HOSES	**Coolant Hoses Silicone Heater & Radiator w/Cab Int Rubber Hoses**	1

AIR INTAKE

ENGINE AIR INTAKE	**Engine Air Intake Filtration and Restriction w/Replaceable Element**	1
AIR INTAKE PROTECTION	**Air Intake Protection Light Duty Skid Plate**	1

EXHAUST

ENGINE EXHAUST SYSTEM	**Eng Exhaust Sys Under Frm RH Fwd Outboard w/DPF/SCR Inline**	1
DIESEL EXHAUST FLUID TANK	**Diesel Exhaust Fluid Tank LH 6 Gal Fill Thru Rr Step**	1
ENGINE EXHAUST ACCESSORIES	**Engine Exh Acc Straight Chrome Ext Shiploose**	1
ENGINE EXHAUST WRAP	**Engine Exhaust Wrap**	1

TRANSMISSION

TRANSMISSION	**Transmission Allison 3000 EVS**	1
TRANSMISSION MODE PROGRAMMING	**Transmission Mode Programming 5th Startup/5th Mode**	1
TRANSMISSION FEATURE PROGRAMMING	**Transmission Feature Programming Allison Gen V-E I/O Package 198/Pumper**	1
TRANSMISSION SHIFT SELECTOR	**Transmission GEN V-E Shift Sel Key Pad/Push Button**	1
ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR	**Elec Transmission Oil Level Indicator**	1
TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE	**2nd Gear Pre-Select**	1
TRANSMISSION COOLING SYSTEM	**Transmission Cooling System**	1
TRANSMISSION DRAIN PLUG	**Transmission Drain Plug**	1
TRANSMISSION WARRANTY	**Transmission Warranty Allison (5) Year**	1

DRIVELINE

DRIVELINE	**Driveline Spicer 1710 HD**	1
MIDSHIP PUMP / GEARBOX	**Midship Pump Jackshaft Only**	1
MIDSHIP PUMP / GEARBOX MODEL	**Midship Pump/Gearbox Model Waterous CXSC20**	1
MIDSHIP PUMP GEARBOX DROP	**Midship Pump Gearbox Drop Waterous "C"**	1
MIDSHIP PUMP RATIO	**Midship Pump Ratio 2.27:1**	1
MIDSHIP PUMP LOCATION C/L SUCTION TO C/L REAR AXLE	**Midship Pump Location C/L Suction to C/L Rear Axle 85.0"**	1
PUMP SHIFT CONTROLS	**Pump Shift Ctrl Elec Over Air Ctr Pnl Pmp Act Down w/Sep Instructions**	1
PUMP SHIFT CONTROL PLUMBING	**Pump Shift Control Plumbing Pre-Plumb Elec/Air**	1

FUEL SYSTEMS

FUEL FILTER/WATER SEPARATOR	**Fuel Filter/Wtr Separator Fleetguard FS1003 w/Lt & Alarm**	1
FUEL LINES	**Fuel Lines Nylon**	1
FUEL SHUTOFF VALVE	**Fuel Shutoff Valve (2) at Primary Filter**	1
ELECTRIC FUEL PRIMER	**Electric Fuel Primer Engine Sply Electric Lift Pump**	1
FUEL COOLER	**Fuel Cooler Behind Rear Axle**	1
FUEL TANK	**Fuel Tank 50 Gallon**	1

FUEL TANK FILL PORT	**Fuel Tank Fill Port LH Rwd/RH Mid w/Vent Holes**	1
FUEL TANK DRAIN PLUG	**Fuel Tank Magnetic Drain Plug**	1

FRONT AXLE

FRONT AXLE	**Frt Axle Meritor MFS 21500# Beam**	1
FRONT AXLE WARRANTY	**Front Axle Warranty Meritor 2014**	1
FRONT WHEEL BEARING LUBRICATION	**Frt Wheel Bearing Lube Oil**	1

FRONT SUSPENSION

FRONT SHOCK ABSORBERS	**Frt Shock Absorbers Bilstein**	1
FRONT SUSPENSION	**Frt Suspension 9 Leaf 20000-21500#**	1

STEERING

STEERING COLUMN/WHEEL	**Steering Column/Wheel Tilt/Telescopic 18" 4 Spoke**	1
ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR	**Elec Power Steering Fluid Level Indicator**	1
POWER STEERING PUMP	**Power Steering Pump TRW**	1
FRONT AXLE CRAMP ANGLE	**Front Axle Cramp Angle 48L/44R Degrees**	1
POWER STEERING GEAR	**Power Steering Gear TRW TAS 65 w/Assist**	1
CHASSIS ALIGNMENT	**Chassis Alignment**	1

REAR AXLE

REAR AXLE	**Rear Axle 33000# Meritor RS-30-185**	1
REAR AXLE WARRANTY	**Rear Axle Warranty Meritor 2014**	1
REAR AXLE DIFFERENTIAL LUBRICATION	**Rear Axle Differential Lubrication Oil**	1
REAR WHEEL BEARING LUBRICATION	**Rear Wheel Bearing Lubrication Oil**	1
REAR AXLE DIFFERENTIAL CONTROL	**Rear Axle Differential Ctrl DCDL**	1
VEHICLE TOP SPEED	**Vehicle Top Speed 68 MPH**	1

REAR SUSPENSION

REAR SUSPENSION AUX SPRING	**REAR SUSPENSION AUX SPRING**	1
REAR SUSPENSION	**Rear Susp Reyco 79KB Spring 21000-33000# w/Helper**	1
REAR SHOCK ABSORBERS	**Rear Shock Absorbers Bilstein**	1

TIRES

FRONT TIRE	**Frt Tire 425/65R 22.5 Michelin XFE**	2
REAR TIRE	**Rear Tire 315/80R 22.5 Michelin XDN2 Grip**	4
REAR AXLE RATIO	**Rear Axle Ratio 4.89**	1
TIRE PRESSURE INDICATOR	**Tire Pressure Ind Frt & Rr RealWheels Tire Watch LED Voucher**	1

WHEELS

FRONT WHEEL	**Frt Wheel Accuride 22.5 x 12.25 Steel**	2
REAR WHEEL	**Rr Whl Accuride 22.5 x 9.00 Steel**	4

WHEEL PAINT	**Wheel Paint Primary/Lower Cab Color Outer Only**	1
WHEEL TRIM	**Wheel Trim Wheel Simulator Kit SS Shiploose**	1
WHEEL GUARDS	**Wheel Guards Between Dual Wheels & All Axles**	1

BRAKES

BRAKE SYSTEM	**Brake System ABS/ATC/ESC Sgl Axle**	1
FRONT BRAKES	**Frt Brakes Meritor EX225 Disc 17"**	1
REAR BRAKES	**Rr Brakes S-Cam Drum 16.5" x 8.6" Cast Iron Shoe**	1
PARK BRAKE	**Prk Brake Rr Wheels Only**	1
PARK BRAKE CONTROL	**Prk Brake Ctrl Ctr Tunnel Mnt**	1
REAR BRAKE SLACK ADJUSTERS	**Rr Brake Slack Adjusters Haldex**	1
REAR BRAKE DUST SHIELDS	**Rr Brake Dust Shields**	1
AIR DRYER	**Air Dryer Wabco System Saver 1200 Bhd LH Batt Box**	1
FRONT BRAKE CHAMBERS	**Frt Brake Chambers MGM Type 24 Long Stroke**	1
REAR BRAKE CHAMBERS	**Rr Brake Chambers TSE 30/36 Long Stroke**	1

AIR SUPPLY SYSTEMS

AIR COMPRESSOR	**Air Compressor Wabco SS318 18.7 CFM**	1
AIR GOVERNOR	**Air Governor Mnt on Air Dryer Bracket**	1
MOISTURE EJECTORS	**Moisture Ejectors Auto Htd**	1
AIR SUPPLY LINES	**Air Sply Lines Nylon**	1
AIR INLET CONNECTION	**Air Inlet Connection**	1
AIR INLET LOCATION	**Air Inlet Location LH Lwr Frt Step Fwd**	1
PLUMBING AIR INLET CONNECTION	**Plumbing Air Inlet Conn**	1
AIR INLET/OUTLET FITTING TYPE	**Air Inlet/Outlet Manual Conn Tru-Flate Interchange 1/4"**	1
AUXILIARY AIR CONNECTION	**Aux Air Conn Under Dash**	1
AIR TANK SPACERS	**Air Tank Spacers Inboard 1.5"**	1
REAR AIR TANK MOUNTING	**Rear Air Tank Mnt Any Bhd Rear Axle Perpendicular w/Frame**	1

FRAME

WHEELBASE	**Wheelbase 230.0"**	1
REAR OVERHANG	**Rear Overhang 47.0"**	1
FRAME	**Frame Double Channel 35.00" Width**	1
FRAME WARRANTY	**Frame Warranty Lifetime 2014**	1
REAR TOW DEVICE	**Rear Tow Device Spartan ERV Pumper Pattern**	1
FRAME PAINT	**Frame Paint Powder Coat Black**	1
REAR MUD FLAP	**Rear Mud Flap & Fender Temp Mnt**	1

BUMPER

FRONT BUMPER	**Frt Bumper Stainless Steel Flat**	1
FRONT BUMPER EXTENSION LENGTH	**Frt Bumper Extension Length 6"**	1
FRONT BUMPER EXTENSION FRAME WIDTH	**Frt Bumper Extension Frame Width 48.25"**	1
FRONT BUMPER APRON	**Frt Bumper Apron 6"**	1

AIR HORN	**Air Horn (2) 21" Round Hadley E-Tone**	1
AIR HORN LOCATION	**Air Horn Location (2) Frt Bmpr Face R/L IB**	1
AIR HORN RESERVOIR	**Air Horn Reservoir (1) 1200 Cu In**	1
ELECTRONIC SIREN SPEAKER	**Elect Siren Speaker 100W Cast Products SA4301**	1
ELECTRONIC SIREN SPEAKER LOCATION	**Elec Siren Speaker Location Frt Bmpr Face Ctr**	1
FRONT BUMPER TOW HOOKS	**Frt Bumper Tow Hooks Painted Side Fwd**	1

CAB TILT

CAB TILT SYSTEM	**Cab Tilt System**	1
CAB TILT CONTROL RECEPTACLE	**Cab Tilt Ctrl Receptacle Temp**	1

CAB GLASS

CAB WINDSHIELD	**Cab Windshield**	1
GLASS FRONT DOOR	**Glass Frt Dr Roll Down/XDuty Regulator**	1
GLASS TINT FRONT DOOR	**Glass Tint Frt Dr Automotive Green**	1
GLASS REAR DOOR RIGHT HAND	**Glass Rr Dr RH Roll Down/XDuty Regulator**	1
GLASS TINT REAR DOOR RIGHT HAND	**Glass Tint Rr Door RH Automotive Green**	1
GLASS REAR DOOR LEFT HAND	**Glass Rr Dr LH Roll Down/XDuty Regulator**	1
GLASS TINT REAR DOOR LEFT HAND	**Glass Tint Rr Door LH Automotive Green**	1
GLASS SIDE MID RIGHT HAND	**Glass Side Mid RH Fxd 16"W x 26"H**	1
GLASS TINT SIDE MID RIGHT HAND	**Glass Tint Side Mid RH Automotive Green**	1
GLASS SIDE MID LEFT HAND	**Glass Side Mid LH Fxd 16"W x 26"H**	1
GLASS TINT SIDE MID LEFT HAND	**Glass Tint Side Mid LH Automotive Green**	1
GLASS REAR WALL OUTER UPPER	**Glass Rr Wall Outer Upper Fxd 16"W x 16"H**	1
GLASS TINT REAR WALL OUTER UPPER	**Glass Tint Rr Wall Outer Upper Automotive Green**	1
GLASS UPPER SIDE FRONT	**Glass Upper Side Frt (2) R/L Fxd 12.5"W x 11"H**	1
GLASS TINT UPPER SIDE FRONT	**Glass Tint Upper Side Frt Automotive Green**	1
GLASS UPPER SIDE MID	**Glass Upper Side Mid (2) R/L Fxd 16"W x 14"H**	1
GLASS TINT UPPER SIDE MID	**Glass Tint Upper Side Mid Automotive Green**	1
GLASS UPPER SIDE REAR DOOR	**Glass Upper Side Rr Door (2) R/L Fxd 27"W x 14"H**	1
GLASS TINT UPPER SIDE REAR DOOR	**Glass Tint Upper Side Rr Door Automotive Green**	1
GLASS UPPER SIDE REAR	**Cab Glass Upper Side Rr (2) R/L Fxd 16"W x 14"H**	1
GLASS TINT UPPER SIDE REAR	**Glass Tint Upper Side Rr Automotive Green**	1
GLASS UPPER SIDE REAR PPHE	**Glass Upper Side Rr PPHE (2) R/L Fxd 16"W x 16"H**	1
GLASS TINT UPPER SIDE REAR PPHE	**Glass Tint Upper Side Rr PPHE Automotive Green**	1
GLASS REAR WALL CENTER	**Glass Rr Wall Ctr Sldg 41"W x 16"H**	1
GLASS TINT REAR WALL CENTER	**Glass Tint Rr Wall Center Automotive Green**	1
GLASS UPPER FRONT	**Glass Upper Frt 6"W x 11"H**	1
GLASS TINT UPPER FRONT	**Glass Tint Upper Frt Automotive Green**	1
GLASS REAR WALL EXTENSION LOOKDOWN	**Glass Rr Wall Ext Lookdown (2) Fxd 5"W x 17"H**	1
GLASS TINT REAR WALL HORIZONTAL	**Glass Tint Rr Wall Horiz Automotive Green**	1

CLIMATE CONTROL

CLIMATE CONTROL	**Climate Ctrl Htr Defroster A/C Ovrhd Painted Alum/(2) Htr Shutoff Valves**	1
CLIMATE CONTROL DRAIN	**Climate Control Drain Gravity**	1
CLIMATE CONTROL ACTIVATION	**Climate Ctrl Actv Rotary Dash Mnt LH**	1
HVAC OVERHEAD COVER PAINT	**HVAC Overhead Cover Paint Zolatone Silver Gray**	1
AUXILIARY CLIMATE CONTROL REAR CREW	**Aux Climate Ctrl Rr Crew Htr Rr Facing Underseat w/(2) Addl Shut Off Valves**	1
HEATER HOSE INSULATION	**Heater Hose Insulation**	1
A/C CONDENSER LOCATION	**A/C Condenser Location Roof Mnt Fwd Ctr**	1
A/C COMPRESSOR	**A/C Compressor Large Capacity**	1
CAB CIRCULATION FANS FRONT	**Cab Circulation Fans Frt (2) Inboard**	1
CAB CIRCULATION FANS REAR	**Cab Circulation Fans Rear (2) Outboard**	1
UNDER CAB INSULATION	**Under Cab Insulation Engine Tunnel**	1

CAB INTERIOR

INTERIOR TRIM FLOOR	**Interior Trim Floor**	1
INTERIOR TRIM	**Interior Trim Vinyl**	1
HEADER TRIM	**Header Trim XDuty**	1
TRIM CENTER DASH	**Trim Center Dash ABS**	1
TRIM LEFT HAND DASH	**Trim LH Dash ABS**	1
TRIM RIGHT HAND DASH	**Trim RH Dash ABS Glove Cmpt/MDT Prov**	1
ENGINE TUNNEL TRIM	**Eng Tnl Trim Flr Mat**	1
POWER POINT DASH MOUNT	**Pwr Pnt Dash Mnt Batt Dir (2) Sw Pnl**	1
STEP TRIM	**Step Trim Grip Strut Lwr Flex-Tred Mid**	1
UNDER CAB ACCESS DOOR	**Under Cab Access Door Rear Step LH Painted**	1
INTERIOR DOOR TRIM	**Interior Door Trim Painted**	1
DOOR TRIM KICKPLATE	**Door Trim Kickplate Treadplate**	1
DOOR TRIM CUSTOMER NAMEPLATE	**Door Trim Customer Nameplate**	1
CAB DOOR TRIM REFLECTIVE	**Cab Dr Trim Reflective Vert Stripe/6" Chevron w/Logo**	1
INTERIOR GRAB HANDLE "A" PILLAR	**Interior Grab Handle 'A' Pillar 11" Molded**	1
INTERIOR GRAB HANDLE FRONT DOOR	**Interior Grab Handle Frt Door Horiz 9"**	1
INTERIOR GRAB HANDLE REAR DOOR	**Int Grab Handle Rr Dr Alum Window Span 30" Black Powder Coat**	1
INTERIOR TRIM VINYL COLOR	**Interior Trim Vinyl Color Gray**	1
INTERIOR TRIM SUNVISOR	**Interior Trim Sunvisor Vinyl**	1
INTERIOR ABS TRIM COLOR	**Interior ABS Trim Color Gray**	1
INTERIOR FLOOR MAT COLOR	**Interior Floor Mat Color Gray**	1
CAB PAINT INTERIOR DOOR TRIM	**Cab Paint Int Dr Trim Zolatone Silver Gray**	1
HEADER TRIM INTERIOR PAINT	**Header Trim Interior Paint Zolatone Silver Gray**	1
DASH PANEL GROUP	**Dash Pnl Group 3-Pnl**	1
SWITCHES CENTER PANEL	**Switches Ctr Pnl 6 Upr LH**	1
SWITCHES LEFT PANEL	**Switches Left Pnl 13 (6+7) w/Headlight/Dimmer/Wiper**	1
SWITCHES RIGHT PANEL	**Switches Right Pnl 0**	1

CAB SEATS

SEAT BELT WARNING	**Seat Belt Warn Indv Seat Loc & LED Display w/VDR Weldon, Prk Brk Actv**	1
SEAT MATERIAL	**Seat Material Vinyl**	1
SEAT COLOR	**Seat Color Gray/Red Seat Belts**	1
SEAT BACK LOGO	**Seat Back Logo Spartan Chassis**	5
SEAT DRIVER	**Seat Driver Seats Inc 4-Way Air Non-ABTS**	1
SEAT BACK DRIVER	**Seat Back Driver SCBA IMMI SmartDock**	1
SEAT MOUNTING DRIVER	**Seat Mounting Driver**	1
OCCUPANT PROTECTION DRIVER	**Occupant Protection Driver Advanced Protection System**	1
SEAT OFFICER	**Seat Officer Seats Inc Battalion Fixed ABTS**	1
SEAT BACK OFFICER	**Seat Back Officer SCBA IMMI SmartDock**	1
SEAT MOUNTING OFFICER	**Seat Mounting Officer Rwd 2"**	1
OCCUPANT PROTECTION OFFICER	**Occupant Protection Officer Advanced Protection System**	1
SEAT BELT ORIENTATION CREW	**Seat Belt Orientation Crew Outboard Shoulder To Inboard Hip**	1
SEAT REAR FACING OUTER LOCATION	**Seat RFO Location (2) R/L**	1
SEAT CREW REAR FACING OUTER	**Seat Crew RFO Seats Inc Battalion Fixed**	2
SEAT BACK REAR FACING OUTER	**Seat Back RFO SCBA IMMI SmartDock**	2
SEAT MOUNTING REAR FACING OUTER	**Seat Mounting RFO Rwd 2"**	1
OCCUPANT PROTECTION RFO	**Occupant Protection RFO Advanced Protection System**	1
SEAT REAR FACING CENTER LOCATION	**Seat RFC Location Ctr**	1
SEAT CREW REAR FACING CENTER	**Seat Crew RFC Seats Inc Battalion Fixed**	1
SEAT BACK REAR FACING CENTER	**Seat Back RFC SCBA IMMI SmartDock**	1
SEAT MOUNTING REAR FACING CENTER	**Seat Mounting Rear Facing Center**	1
OCCUPANT PROTECTION RFC	**Occupant Protection RFC Advanced Protection System**	1
SEAT FRAME REAR FACING CENTER	**Seat Frame Rear Facing Center Dual/Heater**	1
SEAT FORWARD FACING OUTER LOCATION	**Seat FFO Location (2) R/L**	1
SEAT CREW FORWARD FACING OUTER	**Seat Crew FFO Seats Inc Battalion Flip-Up**	2
SEAT BACK FORWARD FACING OUTER	**Seat Back FFO SCBA IMMI SmartDock**	2
OCCUPANT PROTECTION FFO	**Occupant Protection FFO Advanced Protection System**	1
SEAT FRAME FORWARD FACING	**Seat Frm Fwd Fcg Short Outer R/L**	1
SEAT FRAME FORWARD FACING STORAGE ACCESS	**Seat Frm Fwd Fcg Strg Acc Cutout (2) R/L Fwd**	1
CAB FRONT UNDERSEAT STORAGE ACCESS DOOR	**Cab Frt Undrst Strg Acc Dr**	1
SEAT COMPARTMENT DOOR FINISH	**Seat Compartment Door Finish Zolatone Silver Gray**	1

CAB EXTERIOR

WINDSHIELD WIPER SYSTEM	**Windshield Wiper System Single Motor**	1
ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR	**Electronic Windshield Fluid Level Indicator**	1
CAB DOOR HARDWARE	**Cab Door Hardware Chrome w/Scuff Plate**	1
DOOR LOCKS	**Door Locks Manual**	1
DOOR LOCK LH REAR CAB COMPARTMENT	**Door Lock LH Rear Cab Compartment Manual**	1

DOOR LOCK RH REAR CAB COMPARTMENT	**Door Lock RH Rear Cab Compartment Manual**	1
GRAB HANDLES	**Grab Handles SS 18" w/Scuff Plate**	1
AUXILIARY GRAB HANDLE	**Aux Grab Handle 7" SS Cab Face Ctr**	1
REARVIEW MIRRORS	**Mirror Aerodynamic Retrac 613305 Rmt Htd**	1
REARVIEW MIRROR HEAT SWITCH	**Rearview Mirror Heat Sw Mirror Ctrl Pnl**	1
CAB FENDER	**Cab Fender SS**	1
MUD FLAPS FRONT	**Mud Flaps Frt Wide**	1
CAB EXTERIOR FRONT & SIDE EMBLEMS	**Cab Ext Frt & Side Emblems Spartan ERV Frt w/Side Emblem/Model Plate**	1
CAB EXTERIOR MODEL NAMEPLATE	**Cab Exterior Model Nameplate Metro Star Advanced Protection System w/Emblem**	1

START / CHARGING SYSTEMS

IGNITION	**Ign Mstr Sw w/Keyless Start**	1
BATTERY	**Batt (6) Group 31 Optima**	1
BATTERY TRAY	**Batt Tray (2) R/L Steel**	1
BATTERY BOX COVER	**Batt Box Cover (2) Steel w/Black Handles**	1
BATTERY CABLE	**Batt Cables**	1
BATTERY JUMPER STUD	**Batt Jumper Stud Frt LH Lwr Step**	1
ALTERNATOR	**Alternator Leece-Neville 320A**	1

LINE VOLTAGE ELECTRICAL POWER DISTRIBUTION

BATTERY CONDITIONER	**Batt Cond Kussmaul 1200 LH RFO Seat Position**	1
BATTERY CONDITIONER DISPLAY	**Batt Cond Display LH Mid Glass**	1
AUXILIARY AIR COMPRESSOR	**Aux Air Cmp Kussmaul Auto Pump 120V Bhd Off Seat Mnt Horiz**	1
ELECTRICAL INLET	**Elec Inlet 120V 20A Auto Eject**	1
ELECTRICAL INLET LOCATION	**Elec Inlet Location LH Cab Side Mid Fwd**	1
ELECTRICAL INLET CONNECTION	**Elec Inlet Conn to Batt Conditioner & Air Pump**	1
ELECTRICAL INLET COLOR	**Elec Inlet Color Red**	1

LIGHTING

HEADLIGHTS	**Headlights 4 Headlamps Halogen**	1
FRONT TURN SIGNALS	**Frt Turn Signals Whelen 600 LED**	1
HEADLIGHT LOCATION	**Headlights Below Frt Warn Lts**	1
SIDE TURN/MARKER LIGHTS	**Side Turn/Marker Lts LED**	1
MARKER & ICC LIGHTS	**Marker & ICC Lts Face Mnt LED**	1
HEADLIGHT AND MARKER LIGHT ACTIVATION	**Hdlt & Mrkr Lt Actv Rkr Sw/DRL**	1
GROUND LIGHTS	**Ground Lts LED Resp Dr & Prk Brk Sw**	1
STEP LIGHTS	**Step Lts LED**	1
ENGINE COMPARTMENT LIGHT	**Engine Cmpt Work Lt (1)**	1
LIGHTBAR PROVISION	**Lightbar Prov Wire & Mnt Spartan Supply**	1
CAB FRONT LIGHTBAR	**Cab Frt Ltbar Whelen Freedom FN72QLED 6R2C Layout 1 w/Opticom**	1
LIGHTBAR SWITCH	**Lightbar Sw On w/Mstr Warn**	1

SIDE SCENE LIGHTS	**Side Scene Lts FRC Spectra 900 LED 12V**	1
SIDE SCENE LIGHT LOCATION	**Side Scene Lt Loc Upper Mid Fwd 20" Roof Position**	1
SIDE SCENE ACTIVATION	**Side Scene Actv Indv Sw & Resp Side Door**	1
INTERIOR OVERHEAD LIGHTS	**Interior Overhead Lts Weldon w/Front Map Lts**	1
LIGHT TOWER PROVISION	**Light Tower Prov Reinforcement Pad**	1
LIGHT TOWER MODEL	**Light Tower Model Will-Burt Nightscan 4.5 (NS-15) Optimum 240V 1500W QH (6)**	1
LIGHT TOWER ORIENTATION	**Lt Tower Orientation Parallel to Rear Wall**	1
LIGHT TOWER HORIZONTAL JUSTIFICATION	**Lt Tower Horizontal Justification Centered Left To Right**	1
LIGHT TOWER LIGHT HEAD ORIENTATION	**Lt Tower Lt Head Orientation LH**	1
LIGHT TOWER FORE/AFT ORIENTATION	**Lt Tower Fore/Aft Orientation Rear**	1

OPTICAL WARNING DEVICES

DO NOT MOVE APPARATUS LIGHT	**Do Not Move App Lt Flashing Red w/Alarm**	1
MASTER WARNING SWITCH	**Mstr Warn Sw Pnl**	1
HEADLIGHT FLASHER	**Headlight Flasher Alternating**	1
HEADLIGHT FLASHER SWITCH	**Headlight Flasher Sw Pnl**	1
INBOARD FRONT WARNING LIGHTS	**Inboard Frt Warn Lts Whelen 600 Super LED Chrm Bezel**	1
INBOARD FRONT WARNING LIGHTS COLOR	**Inboard Frt Warn Lts Color Red w/Clr Lens**	1
FRONT WARNING SWITCH	**Frt Warn Sw On w/Mstr Warn Sw**	1
INTERSECTION WARNING LIGHTS	**Intersection Warn Lts Whelen 600 Super LED**	1
INTERSECTION WARNING LIGHTS COLOR	**Int Warn Lts Color Red w/Clr Lens**	1
INTERSECTION WARNING LIGHTS LOCATION	**Intersection Warn Lts Location Bumper Tail**	1
SIDE WARNING LIGHTS	**Side Warn Lts Whelen 600 Super LED**	1
SIDE WARNING LIGHTS COLOR	**Side Warn Lts Color Red w/Clr Lens**	1
SIDE WARNING LIGHTS LOCATION	**Side Warn Lts Location Lwr Mid**	1
SIDE AND INTERSECTION WARNING SWITCH	**Side & Intersection Warn Sw On w/Mstr Warn**	1
TANK LEVEL LIGHTS	**Tank Lvl Lts Whelen PSTANK Mid Cab Sides Flat Roof Position**	1
TRAFFIC CONTROL	**Traffic Ctrl Opticom 795H In Lt bar w/Rkr Sw Ctrl**	1
INTERIOR DOOR OPEN WARNING LIGHTS	**Int Dr Open Warn Lts Red Truck-Lite 4" Flsh**	1

AUDIBLE WARNING DEVICES

SIREN CONTROL HEAD	**Siren Ctrl Head Whelen 295HFS2**	1
AIR HORN ACTIVATION	**Air Horn Actv L/R Lanyard**	1
BACK-UP ALARM	**Back-Up Alarm Ecco 575**	1

INSTRUMENTATION

INSTRUMENTATION	**Instrumentation Standard**	1
BACKLIGHTING COLOR	**Backlighting Color Red**	1

COMMUNICATIONS SYSTEMS

CAMERA	**Cam Rr Teardrop w/(2) Mon LH & Rr PPHE**	1
COMMUNICATION ANTENNA	**Comm Ant Base Motorola 800-900 MHz RH Fwd Cab Rf Cust Sply**	1
COMMUNICATION ANTENNA CABLE ROUTING	**Comm Ant Cable Routing Under RH Frt Seat**	1
PANEL LAYOUT	**Panel Layout**	1

ADDITIONAL EQUIPMENT

CAB EXTERIOR PROTECTION	**Cab Exterior Protection Front**	1
FIRE EXTINGUISHER	**Fire Extinguisher Ship Loose**	1
DOOR KEYS	**Door Keys for Manual Locks (4)**	1
DIAGNOSTIC SOFTWARE OCCUPANT PROTECTION	**Diagnostic Software Occupant Protection Advanced Protection System**	1

SALES ADMIN

WARRANTY	**Warranty Cab and Chassis 2014 (2) Year**	1
CHASSIS OPERATION MANUAL	**Chassis Operation Manual Digital Copy (2)**	1
ENGINE & TRANSMISSION OPERATION MANUAL	**Eng & Trans Operation Man Eng Hard Copy/Trans Digital/Eng Owner Digital**	1
CAB/CHASSIS AS BUILT WIRING DIAGRAMS	**Cab/Chassis As Built Wiring Diagrams Digital Copy (2)**	1
SALES TERMS	**Sales Terms**	1

Dealer Options

	Description	Qty.
DEALER OPTION		1

Specification

Bidder Complies
Y__ N__

Y__ N__

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.

Y__ N__

MODEL YEAR

The chassis shall have a vehicle identification number that reflects a 2014 model year.

Y__ N__

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. Spartan Chassis is not responsible for compliance to state, regional, or local regulations. Dealers should identify those regulations and order any necessary optional equipment from Spartan Chassis or their OEM needed to be in compliance with those regulations.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

GROSS AXLE WEIGHT RATINGS FRONT

The front gross axle weight rating (GAWR) of the chassis shall be 21,500 pounds.

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

Y__ N__

GROSS AXLE WEIGHT RATINGS REAR

The rear gross axle weight rating (GAWR) of the chassis shall be 33,000 pounds.

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

Y__ N__

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.

Y__ N__

CAB STYLE

The cab shall be a custom, fully enclosed, ELFD model with a 20.00 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 ten (10) 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 151.10 inches with 74.00 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 and a rear floor to headliner height of 75.00 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 69.88 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 gea**r**. 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 gea**r**. The rear doors shall offer a clear opening of 32.25 inches wide X 71.00 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 31.50 inches wide. The intermediate step shall measure approximately 8.50 inches deep X 33.00 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 21.50 inches wide. The intermediate step shall measure approximately 10.25 inches deep X 22.50 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 12.50 inches.

Y__ N__

OCCUPANT PROTECTION

The vehicle shall include the Advanced Protection System™ (APS) which shall secure belted occupants and increase the survivable space within the cab. The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The system components shall include:

- Driver steering wheel airbag
- Driver dual knee air bags (patent pending) with energy management mounting (patent pending) and officer knee airbag.
- Large driver, officer, and crew area side curtain airbags
- APS advanced seat belt system - retractor pre-tensioners tighten the seat belts around the occupants, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries
- Heavy truck Restraints Control Module (RCM) - receives inputs from the outboard sensors, selectively deploys APS systems, and records sensory inputs immediately before and during a detected qualifying event
- Integrated outboard crash sensors mounted at the perimeter of the vehicle - detects a qualifying front or side impact event and monitors and communicates vehicle status and real time diagnostics of all critical subsystems to the RCM
- Fault-indicating Supplemental Restraint System (SRS) light on the driver's instrument panel

Frontal impact protection shall be provided by the outboard sensors and the RCM. In a qualifying front impact event the outboard sensors provide inputs to the RCM. The RCM activates the steering wheel airbag, driver side dual knee airbags (patent pending), officer side knee airbag, and advanced seat belts for each occupant in the cab.

The APS frontal impact system shall be independently tested to ensure occupant injury criteria does not exceed injury criteria defined in Federal Motor Vehicle Safety Standard (FMVSS) 208. Frontal impact into a rigid barrier at 25 mph shall be conducted by an independent third party test facility using belted 95th percentile Hybrid II test dummies.

Rollover, side impact, and ejection mitigation shall be provided by the outboard sensors and the RCM. In qualifying rollover or side impact events the outboard sensors provide inputs to the RCM. The RCM activates the side curtain airbags and advanced seat belts for each occupant in the cab. The RCM measures roll angle, lateral acceleration, and roll rate to determine if a rollover event or side impact event is imminent or occurring.

In the event of a qualifying offset or other non-frontal impact, the RCM shall determine and intelligently deploy the front impact protection system, the side impact protection system, or both front and side impact protection systems based on the inputs received from the outboard crash sensors.

The APS side impact system shall be independently tested to ensure occupant injury criteria does not exceed injury criteria defined in Federal Motor Vehicle Safety Standard (FMVSS) 214. Side impact from a moving barrier at 17 mph shall be conducted by an independent third party test facility using belted 50th percentile ES-2re test dummies.

Y__ N__

CAB FRONT FASCIA

The front cab fascia shall be constructed of 5052-H32 Marine Grade, 0.13 of an inch thick aluminum plate which shall be an integral part of the cab.

The cab fascia will encompass the entire front of the aluminum cab structure from the bottom of the windshield to the bottom of the cab and shall be the "Classic" design.

The front cab fascia shall include two (2) molded plastic modules on each side accommodating a total of up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights. A chrome plated molded plastic bezel shall be provided on each side around each set of four lamps.

Y__ N__

FRONT GRILLE

The front fascia shall include a box style, 304 stainless steel front grille 44.45 inches wide X 33.50 inches high X 1.50 inches deep. The grille shall include a minimum free air intake of 732.00 square inches. The upper portion of the grille shall be hinged to provide service access behind the grille.

Y__ N__

CAB UNDERCOAT

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

Y__ N__

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.

Y__ N__

CAB PAINT EXTERIOR

The cab shall be painted 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 entire cab shall be ground by disc to remove any surface oxidation or surface debris which may hinder the paint adhesion. Once the surface is machine ground a high quality acid etching of base primer shall be applied. Upon the application of body fillers and their preparation, the cab shall be primed with a coating designed for corrosion resistance and surface paint adhesion. The maximum thickness of the primer coat shall be 2.00 mils.

The entire cab shall then be coated with an intermediate solid or epoxy surfacing agent 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 a sanding of the cab with 360 grit paper followed by sealing the seams with SEM brand seam sealer.

The cab shall then be painted the specific color designated by the customer with an acrylic urethane type system designed to retain color and resist acid rain and most atmospheric chemicals found on the fire ground or emergency scene. The paint shall have a minimum thickness of 2.00 mils, followed by a clear top coat not to exceed 2.00 mils. The entire cab shall then be baked at 180 degrees for one (1) hour to speed the curing process of the coatings.

Y__ N__

CAB PAINT MANUFACTURER

The cab shall be painted with PPG Industries paint.

Y__ N__

CAB PAINT PRIMARY/LOWER COLOR

The primary/lower paint color shall be PPG FBCH 72679 ALT red.

Y__ N__

CAB PAINT SECONDARY/UPPER COLOR

The secondary/upper paint color shall be PPG FBCH 9700 black.

Y__ N__

CAB PAINT EXTERIOR BREAKLINE

The upper and lower paint shall meet at a breakline on the cab which shall be located approximately 1.00 inch below the door windows on each side of the cab. The breakline shall curve down at the front cab corners to approximately 5.00 inches below the windshields on the front of the cab.

Y__ N__

CAB PAINT PINSTRIPE

A 0.50 inch wide gold reflective tape with black borders shall be applied on the break line between the two different colored surfaces.

Y__ N__

CAB PAINT WARRANTY

The cab and chassis shall be covered by a limited manufacturer paint warranty which shall be in effect for ten (10) years from the first owner's date of purchase or in service or the first 100,000 actual miles, whichever occurs first.

Y__ N__

CAB PAINT INTERIOR

The visible interior cab structure surfaces shall be painted with a Zolatone #20-72 silver gray texture finish.

Y__ N__

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.

Y__ N__

CAB ENTRY DOOR TYPE

All cab entry doors shall be full length in design to fully enclose the lower cab steps.

Y__ N__

CAB INSULATION

The cab ceiling and walls shall include 1.00 inch thick foam insulation. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

Y__ N__

REAR CAB ROOF MODIFICATION

The standard cab roof and upper rear wall shall be modified. The upper rear portion of the cab shall include a full width X 23.00 inches deep X 27.25 inches high cover which extends from the 20.00 inch raised roof out away from the cab to house the top mount pump panel. The extension shall be constructed of Marine Grade 5052-H32, 0.09 inch thick aluminum.

Y__ N__

LH EXTERIOR REAR COMPARTMENT

The cab shall offer an exterior compartment on the left side of the cab behind the rear door. The compartment opening shall be 17.00 inches wide X 21.19 inches high. The compartment size shall be 17.34 inches wide X 21.19 inches high X 21.19 inches deep. The compartment shall have a 16.63 inch wide, 32.00 inch high and 1.50 inch thick hinged box pan style flush mount door with a bright aluminum tread plate inner panel and a bent D-ring slam latch. There shall be a switch to activate a light inside the compartment and the open compartment warning light in the cab in the event the door is left ajar.

Y__ N__

LEFT HAND EXTERIOR REAR COMPARTMENT LIGHTING

There shall be one (1) SoundOff Signal brand LED strip light installed to illuminate the exterior rear compartment on the left side of the cab. The strip light shall be 10.00 inches long and shall include three (3) bright white Gen3 LEDs.

Y__ N__

LH EXTERIOR COMPARTMENT INTERIOR FINISH

The interior of the left hand exterior compartment shall have a DA sanded finish.

Y__ N__

RH EXTERIOR REAR COMPARTMENT

The cab shall offer an exterior compartment on the right side of the cab behind the rear door. The compartment opening shall be 17.00 inches wide X 21.19 inches high. The compartment size shall be 17.34 inches wide X 21.19 inches high X 21.19 inches deep. The compartment shall have a 16.63 inch wide, 32.00 inch high and 1.50 inch thick hinged box pan style flush mount door with a bright aluminum tread plate inner panel and a bent D-ring slam latch. There shall be a switch to activate a light inside the compartment and the open compartment warning light in the cab in the event the door is left ajar.

Y__ N__

RIGHT HAND EXTERIOR REAR COMPARTMENT LIGHTING

There shall be one (1) Amdor Luma-Bar™ LED strip light installed to illuminate the exterior rear compartment on the right side of the cab. The strip light shall be approximately 11.00 inches long.

Y__ N__

RH EXTERIOR COMPARTMENT INTERIOR FINISH

The interior of the right hand exterior compartment shall have a DA sanded finish.

Y__ N__

PUMP PANEL CUTOUT

The rear wall of the cab shall include a cut out which allows for the pump panel of the apparatus body to protrude into the cab providing an enclosed operation area within the cab. The cutout shall be 70.00 inches wide and 25.50 inches tall from the bottom of the pump panel hood extension.

Y__ N__

CAB STRUCTURAL WARRANTY

Summary of Warranty Terms:

THE FOLLOWING IS SUMMARY OF WARRANTY TERMS FOR INFORMATION ONLY. THE ACTUAL LIMITED WARRANTY DOCUMENT, WHICH IS ATTACHED TO THIS OPTION, CONTAINS THE COMPLETE STATEMENT OF THE SPARTAN CHASSIS, INC. LIMITED WARRANTY. SPARTAN'S RESPONSIBILITY IS TO BE ACCORDING TO THE TERMS OF THE COMPLETE LIMITED WARRANTY DOCUMENT.

The cab structure shall be warranted for a period of ten (10) years or one hundred thousand (100,000) miles which ever may occur first. The warranty period shall commence on the date the vehicle is delivered to the first end user.

Y__ N__

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.

Y__ N__

ELECTRICAL SYSTEM

The chassis shall include a single starting electrical system which shall include a 12 volt direct current Weldon brand of 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.

Y__ N__

MULTIPLEX DISPLAY

The multiplex electrical system shall include a Weldon Vacuum Florescent Display (VFD) display which shall be located in the switch panel with a location specific to the customer's needs. The VFD display is a two (2) line, forty (40) character display capable of showing a wide range of data from the multiplex system.

In addition to showing system errors, the VFD shall display:

- Warning – Door Open
  Door Location
- Seat Violation
  Park Brake Released
- Emergency Master On
  Response Mode
- Emergency Master On
  Scene Mode

A momentary push button shall be located on the dash which when pressed acknowledges the current message and displays the next message. If no message is present, the VFD shall default to display the Fire Department Name.

The VFD display shall measure approximately 5.00 inches wide X 2.00 inches tall.

Y__ N__

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.

Y__ N__

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.

Y__ N__

AUXILIARY ACCESSORY POWER

An auxiliary set of power and ground studs shall be provided and installed behind the electrical center cover with a 40 amp breaker. The studs shall be 0.38 inch diameter and capable of carrying up to a 40 amp load switched with the master power switch.

Y__ N__

ADDITIONAL ACCESSORY POWER

An additional set of power and ground studs shall be provided and installed on the side wall of the engine tunnel behind the driver seat. The power and ground studs shall be circuit protected with a 40 amp breaker. The studs shall be 0.38 inch diameter and capable of carrying up to a 40 amp battery direct load.

Y__ N__

EXTERIOR ELECTRICAL TERMINAL COATING

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

Y__ N__

ENGINE

The chassis engine shall be a Cummins ISL9 engine. The ISL9 engine shall be an in-line six (6) cylinder, four cycle diesel powered engine. The engine shall offer a rating of 380 horse power at 1900 RPM and shall be governed at 2100 RPM. The torque rating shall feature 1150 foot pounds of torque at 1400 RPM with 543 cubic inches (8.9 liters) of displacement.

The ISL9 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 2013 emissions standards using cooled exhaust gas recirculation and selective catalytic reduction technology.

The engine shall include an engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge for use with the engine lubrication system. The engine shall include Citgo brand Citgard 500, or equivalent SAE 15W40 CJ4 low ash engine oil which shall be utilized for proper engine lubrication.

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

ENGINE PROGRAMMING HIGH IDLE SPEED

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

Y__ N__

ENGINE HIGH IDLE CONTROL

The vehicle shall be equipped with an automatic high-idle speed control. It shall be pre-set so when activated, it will operate the engine at the appropriate RPM to increase alternator output. This device shall operate only when the master switch is activated and the transmission is in neutral with the parking brake set. The device 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 is released, or when the transmission is placed in neutral.

Y__ N__

ENGINE PROGRAMMING ROAD SPEED GOVERNOR

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

Y__ N__

AUXILIARY ENGINE BRAKE

The engine shall utilize a variable geometry turbo (VGT). The VGT auxiliary engine brake shall be an integral part of the turbo and shall offer a variable rate of exhaust flow, which when activated shall slow the engine and in turn slow the vehicle.

The VGT shall actuate the vehicle's brake lights when engaged as an auxiliary brake. A cutout relay shall be installed to disable the VGT when in pump mode or when an ABS event occurs. The VGT engine brake shall activate at a 0% accelerator throttle position when in operation mode.

Y__ N__

AUXILIARY ENGINE BRAKE CONTROL

An engine variable geometry turbo 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 variable geometry turbo brake control shall be controlled through an on/off rocker switch.

Y__ N__

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.

Y__ N__

FLUID FILLS

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

Y__ N__

ENGINE DRAIN PLUG

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

Y__ N__

ENGINE WARRANTY

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

Y__ N__

REMOTE THROTTLE CONTROL

A Fire Research In Control 400 pressure sensor governor shall be provided for the electronic engine. It shall include a remote mountable control head.

The In Control shall regulate the pump pressure and monitor all essential engine parameters.

LED readouts shall display RPM, PSI, pump discharge and intake pressure, engine oil pressure, engine temperature, transmission temperature and battery voltage. An audible alarm out put shall also be part of the system.

The rpm increase and decrease will be controlled by control knob on the face of the In Control 400.

Y__ N__

REMOTE THROTTLE HARNESS

An apparatus interface wiring harness for the engine shall be supplied with the chassis. The harness shall include a connector for connection to the chassis harness which shall terminate in the left frame rail behind the cab for reconnection by the apparatus builder. The harness shall contain connectors for a Fire Research In Control 300/400 pressure governor and a multiplexed gauge. Separate circuits shall be included for pump controls, "Pump Engaged" and "OK to Pump" indicator lights, open compartment ground, start signal, park brake ground, ignition signal, master power, customer ignition, air horn solenoid switch, high idle switch and high idle indication light. The harness shall be designed for a top mount pump panel.

An apparatus interface wiring harness shall also be included which shall be wired to the cab harness interface connectors and shall incorporate circuits with relays to control pump functions. This harness shall control the inputs for the transmission lock up circuits, governor/hand throttle controls and dash display which shall incorporate "Pump Engaged" and "OK to Pump" indicator lights. The harness shall contain circuits for the apparatus builder to wire in a pump switch.

Y__ N__

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.

Y__ N__

ENGINE PROGRAMMING IDLE SPEED

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

Y__ N__

ENGINE FAN DRIVE

The engine cooling system fan shall incorporate a thermostatically controlled, Horton clutched type fan drive.

When the clutched fan is disengaged it shall 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.

Y__ N__

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 utilize 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, an air to air 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 injection molded polymer eleven (11) blade fan with a 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 sight glass 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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

ENGINE PUMP HEAT EXCHANGER

A single bundle type coolant to water heat exchanger shall be installed between the engine and the radiator. The heat exchanger shall be designed to prohibit water from the pump from coming in contact with the engine coolant. This shall allow the use of water from the discharge side of the pump to assist in cooling the engine.

Y__ N__

COOLANT HOSES

The cooling system hoses shall be silicone heater hose with rubber hoses in the cab interior. The radiator hoses shall be formed silicone coolant hoses with formed aluminized steel tubing. All heater hose, silicone coolant hose, and tubing shall be secured with stainless steel constant torque band clamps.

Y__ N__

ENGINE AIR INTAKE FILTER AND RESTRICTION W/REPLACEABLE ELEMENT

The engine air intake system shall include an ember separator air intake filter which shall be located in the front of the cab behind the right hand side fascia. This filter shall protect the downstream air filter from embers using a combination of unique flat and crimped metal screens constructed into a corrosion resistant steel frame. This multilayered screen shall be designed to trap embers or allow them to burn out before passing through the pack, while creating only minimal air flow restriction through the system. Periodic cleaning or replacement of the screen shall be all that is required after installation.

The engine shall also include an air intake filter which shall be bolted to the frame and located under the front of the cab on the right hand side. The system shall utilize a replaceable dry type filter which ensures dust and debris remains safely contained inside the housing during operation via leak-tight seals. The service cover shall be located on the bottom of the housing, eliminating the chance of contaminating the air intake system during air filter service.

The air flow distribution and dust loading shall be uniform throughout the high-performance filter element, which shall result in pressure differential for improved horsepower and fuel economy. The air intake ember separator shall be mounted within easy access via a hinged panel behind the right hand side headlight module. 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.

Y__ N__

AIR INTAKE PROTECTION

A light duty skid plate shall be supplied for the engine air intake system below the right front side of the cab. The skid plate shall provide protection for the air intake system from light impacts, stones, and road debris.

Y__ N__

ENGINE EXHAUST SYSTEM

The exhaust system shall be mounted below the frame in the outboard position with the SCR canister in line rearward of the DPF. The exhaust system shall utilize a 90-degree bend in the exhaust tubing from the turbo into a side inlet DPF canister that allows the entire system to be pulled forward. The discharge shall terminate horizontally on the right side of the vehicle ahead of the rear tires.

The exhaust system shall include a diesel particulate filter (DPF), a diesel oxidation catalyst, and a selective catalytic reduction (SCR) catalyst to meet current EPA standards. The selective catalytic reduction catalyst utilizes a diesel exhaust fluid solution consisting of urea and purified water to convert NOx into nitrogen, water, and trace amounts of carbon dioxide. The solution shall be injected into the system through the decomposition tube between the DPF and SCR.

The system shall utilize 0.07 inch thick stainless steel exhaust tubing between the engine turbo and the DPF. Zero leak clamps seal all system joints between the turbo and DPF.

The DPF, the decomposition tube, and the SCR canister through the end of the tailpipe shall be connected with zero leak clamps.

Y__ N__

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 six (6) usable gallons and shall be mounted on the left hand side of the chassis frame behind the batteries below the 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.

Y__ N__

ENGINE EXHAUST ACCESSORIES

A straight chrome exhaust tail pipe extension shall be shipped loose with the chassis for installation by the apparatus builder.

Y__ N__

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.

Y__ N__

TRANSMISSION

The drive train shall include an Allison model EVS 3000 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 and Castrol TranSynd™ synthetic TES 295 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	3.49:1
2nd	1.86:1
3rd	1.41:1
4th	1.00:1
5th	0.75:1
6th	0.65:1 (if applicable)
Rev	5.03:1

Y__ N__

TRANSMISSION MODE PROGRAMMING

The transmission, upon start-up, will select the fifth speed operation without the need to press the mode button.

Y__ N__

TRANSMISSION FEATURE PROGRAMMING

The Allison Gen V-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-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

Y__ N__

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.

Y__ N__

ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR

The transmission fluid shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal.

Y__ N__

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.

Y__ N__

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.

Y__ N__

TRANSMISSION DRAIN PLUG

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

Y__ N__

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.

Y__ N__

DRIVELINE

All drivelines shall be heavy duty metal tube and equipped with Spicer 1710 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®.

Y__ N__

MIDSHIP PUMP / GEARBOX

A temporary jackshaft driveline shall be installed by the chassis manufacturer to accommodate the mid-ship split shaft pump as specified by the apparatus manufacturer.

Y__ N__

MIDSHIP PUMP / GEARBOX MODEL

The midship pump/gearbox provisions shall be for a Waterous CXSC20 pump.

Y__ N__

MIDSHIP PUMP GEARBOX DROP

The Waterous pump gearbox shall have a “C” (medium length) drop length.

Y__ N__

MIDSHIP PUMP RATIO

The ratio for the midship pump shall be 2.27:1.

Y__ N__

MIDSHIP PUMP LOCATION C/L SUCTION TO C/L REAR AXLE

The midship pump shall be located so the dimension from the centerline of the suction to the centerline of the rear axle is 85.00 inches.

Y__ N__

PUMP SHIFT CONTROLS

One (1) pump shift control panel shall be mounted on the lower left section of the center dash panel. The following shall be provided on the panel: a three (3) position locking toggle switch; an engraved PUMP ENGAGED identification light; and an engraved OK TO PUMP identification light. The pump shift control panel shall be black with a yellow border outline. One (1) label indicating pump instructions and the transmission shift selector position used for pumping shall be provided and located so it can be read from the driver's position per NFPA **16.10.1.3**. The road mode shall be selected when the switch is in the up position and pump mode shall be selected when the switch is in the down position.

The center switch position shall exhaust air from both pump and road sides of the pump gear box shift cylinder.

Y__ N__

PUMP SHIFT CONTROL PLUMBING

Air connections shall be provided from the air supply tank to the pump shift control valve and from the pump shift control valve to the frame mounted bracket. The frame mounted bracket shall include labeling identifying the pump and road connection points with threaded 0.25 inch NPT fittings on the solenoid for attaching the customer installed pump. The air supply shall be pressure protected from service brake system.

Y__ N__

FUEL FILTER/WATER SEPARATOR

The fuel system shall have a Fleetguard FS1003 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.

Y__ N__

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.

Y__ N__

FUEL SHUTOFF VALVE

There shall be two (2) fuel shutoff valves which shall be installed, one (1) in the fuel draw line at the primary fuel filter and one (1) in the fuel outlet line at the primary fuel filter to allow the fuel filters to be changed without loss of fuel to the fuel pump.

Y__ N__

ELECTRIC FUEL PRIMER

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

Y__ N__

FUEL COOLER

An aluminum cross flow air to fuel cooler shall be provided to lower fuel temperature allowing the vehicle to operate at higher ambient temperatures. The fuel cooler shall be located behind the rear axle.

Y__ N__

FUEL TANK

The fuel tank shall have a capacity of fifty (50) gallons and shall measure 35.00 inches in width X 15.00 inches in height X 24.00 inches in length. The baffled tank shall be made of 14 gauge aluminized steel. The exterior of the tank shall be painted with a PRP Corsol™ black anti-corrosive exterior metal treatment finish. This results in a tank which offers the internal and external corrosion resistance.

The 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.

Y__ N__

FUEL TANK FILL PORT

The fuel tank fill ports shall be offset with the left fill port located in the rearward position and the right fill port located in the middle position on the fuel tank.

A 1.50 inch diameter hole shall be provided in the left and right frame rails for vent hose routing provisions. The holes shall be located adjacent to the fuel tank and 5.13 inches up from the bottom of each rail.

Y__ N__

FUEL TANK MAGNETIC DRAIN PLUG

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

Y__ N__

FRONT AXLE

The front axle shall be a Meritor Easy Steer Non drive front axle, model number MFS-20. The axle shall include a 3.74 inch drop and a 71.00 inch king pin intersection (KPI). The axle shall include a conventional style hub with a standard knuckle. The weight capacity for the axle shall be rated to 21,500 pounds FAWR.

Y__ N__

FRONT AXLE WARRANTY

The front axle shall be warranted by Meritor for two (2) years with unlimited miles under the general service application. Details of the Meritor warranty are provided on the PDF document attached to this option.

Y__ N__

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.

Y__ N__

FRONT SHOCK ABSORBERS

Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the front suspension system. The shocks shall be a monotubular design and fabricated using a special extrusion method, utilizing a single blank of steel without a welded seam, achieving an extremely tight peak-to-valley tolerance and maintains consistent wall thickness. The monotubular design shall provide superior strength while maximizing heat dissipation and shock life.

The ride afforded through the use of a gas shock is more consistent and shall not deteriorate with heat, the same way a conventional oil filled hydraulic shock would.

The Bilstein front shocks shall include a digressive working piston assembly allowing independent tuning of the compression and rebound damping forces to provide optimum ride and comfort without compromise. The working piston design shall feature fewer parts than most conventional twin tube and “road sensing” shock designs and shall contribute to the durability and long life of the Bilstein shock absorbers.

Proposals offering the use of conventional twin tube or “road sensing” designed shocks shall not be considered.

Y__ N__

FRONT SUSPENSION

The front suspension shall include a nine (9) leaf spring pack in which the longest leaf measures 54.00 inch long and 4.00 inches wide and shall include a military double wrapped front eye. Both spring eyes shall have a case hardened threaded bushing installed with lubrication counter bore and lubrication land off cross bore with grease fitting. The spring capacity shall be rated at 21,500 pounds.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

FRONT AXLE CRAMP ANGLE

The chassis shall have a front axle cramp angle of 48-degrees to the left and 44-degrees to the right.

Y__ N__

POWER STEERING GEAR

The power steering gear shall be a TRW model TAS 65 with an assist cylinder.

Y__ N__

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.

Y__ N__

REAR AXLE

The rear axle shall be a Meritor model RS-30-185 single drive axle. The axle shall include precision forged, single reduction differential gearing, and shall have a fire service rated capacity of 33,000 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 0.56 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.

Y__ N__

REAR AXLE WARRANTY

The rear axle shall be warranted by Meritor for two (2) years with unlimited miles under the general service application. Details of the Meritor warranty are provided on the PDF document attached to this option.

Y__ N__

REAR AXLE DIFFERENTIAL LUBRICATION

The rear axle differential shall be lubricated with oil.

Y__ N__

REAR WHEEL BEARING LUBRICATION

The rear axle wheel bearings shall be lubricated with oil.

Y__ N__

REAR AXLE DIFFERENTIAL CONTROL

A driver controlled differential lock shall be installed on the rear axle. This feature shall allow the main differential to be locked and unlocked when encountering poor road or highway conditions, where maximum traction is needed, for use at speeds no greater than 25 MPH. The differential lock shall be controlled by a locking rocker switch on the switch panel. The light on the switch shall illuminate with positive engagement of the differential control.

Y__ N__

VEHICLE TOP SPEED

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

Y__ N__

REAR SUSPENSION

The single rear axle shall feature a Reyco 79KB suspension which shall offer a vari-rate, self-leveling captive slipper type conventional multi-leaf spring suspension with 57.50 inch X 3.00 inch springs. One (1) adjustable and one (1) fixed torque rod shall be provided.

A helper spring shall be provided in addition to the standard spring pack to help prevent vehicle sway during aggressive cornering.

The rear suspension capacity shall be rated at 21,000 to 33,000 pounds.

Y__ N__

REAR SHOCK ABSORBERS

Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the rear suspension system. The shocks shall be a monotubular design and fabricated using a special extrusion method, utilizing a single blank of steel without a welded seam, achieving an extremely tight peak-to-valley tolerance and maintains consistent wall thickness. The monotubular design shall provide superior strength while maximizing heat dissipation and shock life.

The ride afforded through the use of a gas shock is more consistent and shall not deteriorate with heat, the same way a conventional oil filled hydraulic shock would.

The Bilstein front shocks shall include a digressive working piston assembly allowing independent tuning of the compression and rebound damping forces to provide optimum ride and comfort without compromise. The working piston design shall feature fewer parts than most conventional twin tube and "road sensing" shock designs and shall contribute to the durability and long life of the Bilstein shock absorbers.

Proposals offering the use of conventional twin tube or "road sensing" designed shocks shall not be considered.

Y__ N__

FRONT TIRE

The front tires shall be Michelin 425/65R22.5 "L" tubeless radial XFE regional tread.

The front tire stamped load capacity shall be 22,800 pounds per axle with a speed rating of 65 miles per hour when properly inflated to 120 pounds per square inch.

The Michelin Tire Intermittent Service Rating load capacity shall be 24,400 pounds per axle with a speed rating of up to 75 miles per hour when properly inflated to 120 pounds per square inch. The Michelin Intermittent Service Rating limits the operation of the emergency vehicle to one (1) hour of loaded travel with a one (1) hour cool down prior to another loaded run.

Y__ N__

REAR TIRE

The rear tires shall be Michelin 315/80R-22.5 20PR "L" tubeless radial XDN2 Grip all weather tread.

The rear tire stamped load capacity shall be 33,080 pounds per axle with a speed rating of 75 miles per hour when properly inflated to 130 pounds per square inch.

The Michelin Tire Intermittent Service Rating load capacity shall be 33,080 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 one (1) hour of loaded travel with a one (1) hour cool down prior to another loaded run.

Y__ N__

REAR AXLE RATIO

The rear axle ratio shall be 4.89:1.

Y__ N__

TIRE PRESSURE INDICATOR

There shall be a RealWheels Tire Watch polished stainless steel electronic LED valve caps that shall illuminate with a red LED when tire pressure drops 8 psi. The valve caps are self-calibrating and set to the pressure of the tire upon installation.

Y__ N__

FRONT WHEEL

The front wheels shall be Accuride hub piloted, 22.50 inch X 12.25 inch steel wheels. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.

Y__ N__

REAR WHEEL

The rear wheels shall be Accuride hub piloted, heavy duty, 22.50 inch X 9.00 steel wheels. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.

Y__ N__

WHEEL PAINT

Each of the steel wheels shall be pretreated in a zinc phosphate bath, coated with an acrylic cathode electro deposited white primer base coat (E-Coat). The E-Coat shall exceed 336 hours under industry standard ASTM salt spray testing.

The outer wheels shall then be finish painted the same as the primary/lower color of the cab by the chassis manufacturer.

Y__ N__

WHEEL TRIM

Stainless steel wheel simulator kits shall be provided for the front wheels and for the rear wheels shipped loose with the chassis for installation by the apparatus builder

Each wheel simulator kit shall be RealWheels® brand constructed of 304L grade, non-corrosive stainless steel with a mirror finish. Each wheel simulator shall meet D.O.T. certification. They shall simulate the look of polished aluminum wheels and come complete with stainless steel hub covers and lug nut covers.

Y__ N__

WHEEL GUARDS

The rear dual wheels shall include a plastic isolator approximately 0.04" installed between the inner and outer wheel hub to help prevent corrosion caused by metal to metal contact. There shall also be a plastic isolator between the axle hub and the wheels on both front and rear axles.

Y__ N__

BRAKE SYSTEM

A rapid build-up air brake system shall be provided. The air brakes shall include 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 loose traction. The system shall scale the electronic engine throttle back to prevent wheel spin while accelerating on ice or wet surfaces.

A momentary rocker style switch 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 and the light on the rocker switch 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.

Y__ N__

FRONT BRAKES

The front brakes shall be Meritor EX225 Disc Plus disc brakes with 17.00 inch vented rotors.

Y__ N__

REAR BRAKES

The rear brakes shall be Meritor 16.50 inch X 8.63 inch S-cam drum type. The brakes shall feature a cast iron shoe.

Y__ N__

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.

Y__ N__

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 on the center of the tunnel within easy access of both the driver and officer positions.

Y__ N__

REAR BRAKE SLACK ADJUSTERS

Haldex rear brake automatic slack adjusters shall be installed on the axle.

Y__ N__

REAR BRAKE DUST SHIELDS

The rear brakes shall be equipped with brake dust shields.

Y__ N__

AIR DRYER

The brake system shall include a Wabco System Saver 1200 air dryer with an integral 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 mounted behind the battery box on the left hand side.

Y__ N__

FRONT BRAKE CHAMBERS

The front brakes shall be provided with MGM type 24 long stroke brake chambers.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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 on the left frame rail behind the battery box.

Y__ N__

MOISTURE EJECTORS

Heated, automatic moisture ejectors with a manual drain provision shall be installed on all reservoirs of the air supply system.

Y__ N__

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) will be blue.

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

Y__ N__

AIR INLET CONNECTION

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

Y__ N__

AIR INLET LOCATION

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

Y__ N__

PLUMBING AIR INLET CONNECTION

The air inlet connector shall be plumbed to the air system with a check valve to prevent air from escaping through the inlet connector.

Y__ N__

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.

Y__ N__

AUXILIARY AIR CONNECTION

An auxiliary air line shall be plumbed off the auxiliary air tank and routed inside the cab terminating under the driver dash area. A temporary mounted brass single port tee shall be supplied for the OEM usage, such as pump shift operator valves. If used for a pump shift control it shall be provided and installed by the OEM.

Y__ N__

AIR TANK SPACERS

There shall be spacers included with the air tank mounting. The spacers shall move the air tanks 1.50 inches inward towards the center of the chassis. This shall provide clearance between the air tanks and the frame for body U-bolt clearance.

Y__ N__

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.

Y__ N__

WHEELBASE

The chassis wheelbase shall be 230.00 inches.

Y__ N__

REAR OVERHANG

The chassis rear overhang shall be 47.00 inches.

Y__ N__

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.

The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request.

Proposals offering warranties for frames not including cross members shall not be considered.

Y__ N__

FRAME WARRANTY

Summary of Warranty Terms:

THE FOLLOWING IS SUMMARY OF WARRANTY TERMS FOR INFORMATION ONLY. THE ACTUAL LIMITED WARRANTY DOCUMENT, WHICH IS ATTACHED TO THIS OPTION, CONTAINS THE COMPLETE STATEMENT OF THE SPARTAN CHASSIS, INC. LIMITED WARRANTY. SPARTAN'S RESPONSIBILITY IS TO BE ACCORDING TO THE TERMS OF THE COMPLETE LIMITED WARRANTY DOCUMENT.

The frame and cross members shall carry a limited lifetime warranty to the original purchaser. The warranty period shall commence on the date the vehicle is delivered to the first end user.

Y__ N__

REAR TOW DEVICE

The frame rails shall contain (6) holes per frame in a pattern specified by the OEM for mounting Spartan ERV tow eyes at the rear of the frame at a location defined by the OEM.

Y__ N__

FRAME PAINT

The frame shall be powder coated black prior to any attachment of 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 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.

Any proposals offering painted frame 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.

Y__ N__

REAR MUD FLAP

The unit shall be equipped with a temporary wooden fender and mud flap assembly for transport to the body manufacturer.

Y__ N__

FRONT BUMPER

A one piece, two (2) rib wrap-around style, polished stainless steel front bumper shall be provided. The material shall be 10 gauge 304 stainless steel, 12.00 inches high and 99.00 inches wide.

Y__ N__

FRONT BUMPER EXTENSION LENGTH

The front bumper shall be extended approximately 6.00 inches ahead of the cab.

Y__ N__

FRONT BUMPER EXTENSION FRAME WIDTH

The front bumper extension frame shall feature an overall width of 48.25 inches.

Y__ N__

FRONT BUMPER APRON

The 6.00 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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

ELECTRONIC SIREN SPEAKER

There shall be one (1) Cast Products Inc. model SA4301, 100 watt speaker provided. The speaker shall measure 6.20 inches tall X 7.36 inches wide X 3.06 inches deep. The speaker shall include a flat mounting flange which shall be polished aluminum.

Y__ N__

ELECTRONIC SIREN SPEAKER LOCATION

The electronic siren speaker shall be located on the front bumper face in the center position between the frame rails.

Y__ N__

FRONT BUMPER TOW HOOKS

Two (2) heavy duty tow hooks, painted to match the chassis frame, shall be installed below the front bumper in the forward position bolted directly to the outside of each chassis frame rail, with grade 8 bolts.

Y__ N__

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.

Y__ N__

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.

Y__ N__

CAB WINDSHIELD

The cab windshield shall have a surface area of 2825.00 square inches and be of a two (2) piece wraparound design for maximum visibility.

The glass utilized for the windshield shall include standard automotive tint. The left and right windshield shall be fully interchangeable thereby minimizing stocking and replacement costs.

Each windshield shall be installed using black self locking window rubber.

Y__ N__

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 manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

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.

Y__ N__

GLASS TINT FRONT DOOR

The windows located in the left and right front doors shall have a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS REAR DOOR RH

The rear right hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

Y__ N__

GLASS TINT REAR DOOR RIGHT HAND

The window located in the right hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS REAR DOOR LH

The rear left hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door. A reinforced window regulator assembly shall be provided for severe duty use.

Y__ N__

GLASS TINT REAR DOOR LEFT HAND

The window located in the left hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS SIDE MID RH

The cab shall include a window on the right side behind the front and ahead of the crew door which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

Y__ N__

GLASS TINT SIDE MID RIGHT HAND

The window located on the right hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS SIDE MID LH

The cab shall include a window on the left side behind the front door and ahead of the crew door and above the wheel well which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self

locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

Y__ N__

GLASS TINT SIDE MID LEFT HAND

The window located on the left hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS REAR WALL OUTER UPPER

The rear wall of the cab on the left and right sides shall include a window which shall measure 16.00 inches in width X 16.00 inches in height. These windows shall be fixed within this space and shall be square in shape. The windows shall be mounted using black self locking window rubber.

Y__ N__

GLASS TINT REAR WALL OUTER UPPER

The windows located in the rear wall of the cab on the left and right outer upper corners shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER SIDE FRONT

The raised roof on the left and right sides of the cab shall include a triangular shaped window which shall be 12.50 inches wide X 11.00 inches high. These windows shall be fixed within this space. These windows shall be mounted to the cab using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER SIDE FRONT

The windows located in the upper section on the left and right side towards the front of the cab shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER SIDE MID

The middle section of the raised roof on the left and right sides of the cab shall include a window which shall measure 16.00 inches wide X 14.00 inches high. These windows shall be fixed within this space. These windows shall be mounted using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER SIDE MID

The windows located in the upper section on each side in the middle of the cab shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER SIDE REAR DOOR

Windows shall be provided in the upper portion of each rear door of the raised roof cab. Each window shall measure 27.00 inches wide X 14.00 inches high and be installed above the lower door window. The windows shall be rectangular in shape and fixed within this space. The windows shall be mounted using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER SIDE REAR DOOR

The window located in the upper section of the rear crew doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER SIDE REAR

The upper portion on the left and right sides towards the rear of the cab shall include a window which is 16.00 inches wide X 14.00 inches high. These windows shall be fixed within this space. The windows shall be oblong in shape and be mounted using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER SIDE REAR

The window located in the upper section on the side of the cab towards the rear shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER SIDE REAR PPHE

The left and right sides of the pump panel hood extension shall include a 16.00 inch wide X 16.00 inch tall window. These windows shall be fixed within this space. The windows shall be square and be mounted using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER SIDE REAR PUMP PANEL HOOD EXTENSION

The windows located on the left and right sides of the pump panel hood extension shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS REAR WALL CENTER

The center rear wall of the cab shall include a window which is 41.00 inches in width X 16.00 inches in height. This window shall be of a rectangular shape and shall be capable of horizontally sliding within this space. The window shall be mounted in a black anodized aluminum frame with lower drain slots using black self locking window rubber.

Y__ N__

GLASS TINT REAR WALL CENTER

The window located in center of the rear wall shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS UPPER FRONT

The front face of the raised roof slope of the cab shall include two (2) windows which shall be 6.00 inches wide X 11.00 inches high. These windows shall be fixed type and shall be rectangular in shape. The windows shall be mounted using black self-locking window rubber.

Y__ N__

GLASS TINT UPPER FRONT

The windows located on the forward face of the raised roof of the cab on the left and right sides shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

GLASS REAR WALL EXTENSION LOOKDOWN

The cab shall include two (2) 5.00 inch wide X 17.00 inch long windows mounted horizontally on the underside of the pump panel hood extension, one each side. These windows shall be fixed within this space. The windows shall be mounted with black self-locking window rubber.

Y__ N__

GLASS TINT REAR WALL HORIZONTAL

The windows located on the underside of the rear pump panel hood extension on the left and right side of the pump panel cutout shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

Y__ N__

CLIMATE CONTROL

The cab shall be equipped with a ceiling mounted combination defrost / heating and air-conditioning system mounted above the engine tunnel in a central location.

The system shall offer sixteen (16) adjustable louvers. Six (6) of the louvers shall face forward towards the windshield, offering 45,000 BTU of heat at 320 CFM for defrosting. The system shall include six (6) rearward facing louvers to direct air for the crew area and four (4) for driver and officer comfort. The HVAC system shall be designed to produce 60,000 BTU of heat and 32,000 BTU of cooling. The HVAC cover shall be made of aluminum which shall be coated with a customer specified interior paint, or protective coating.

All defrost/heating systems shall be plumbed with one (1) seasonal shut-off valve at the front corner on the right side of the cab. There shall be one (1) additional seasonal shut-off valve located adjacent to the first valve for a total of two (2) shutoff valves, one (1) in each heater/defroster coolant hose. The cab must be tilted to access the shut-off valves.

The air conditioner lines shall be a mixture of custom bent zinc coated steel fittings and Aero-quip GH 134 flexible hose with Aero-Quip EZ-Clip fittings.

Y__ N__

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.

Y__ N__

CLIMATE CONTROL ACTIVATION

The heating, defrosting and air conditioning controls shall be on the dash next to driver panel, in a position which is easily accessible to the driver. The climate control shall be activated by a rotary switch.

Y__ N__

HVAC OVERHEAD COVER PAINT

The overhead HVAC cover shall be painted with a Zolatone #20-72 silver gray texture finish.

Y__ N__

AUXILIARY CLIMATE CONTROL REAR CREW

One (1) 53,500 BTU heater shall be provided and installed in the rear section of the crew cab under the center rear facing seat riser. The fan controls shall be located on the heater unit.

The auxiliary heater system hoses shall be silicone with stainless steel constant torque clamps approved for use with silicone hose. The auxiliary heater system shall include one (1) seasonal shut-off valve to be supplied at the front right hand corner of the cab, and two (2) additional shut-off valves installed one on the inlet and outlet hoses so as to isolate the heater circuit from the rest of cooling system. The cab must be tilted to access the front seasonal shut-off valve.

Y__ N__

HEATER HOSE INSULATION

The heater hoses leading from the engine to the cab shall include a foam insulation wrap which runs the length of the hose improving heating in extreme cold climates. The heater hoses which shall be routed inside the cab shall not be insulated.

Y__ N__

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.

Y__ N__

A/C COMPRESSOR

The air-conditioning compressor shall be a belt driven, engine mounted, open type compressor that shall be capable of producing a minimum of 32,000 BTU at 1500 engine RPMs. The compressor shall utilize R-134A refrigerant and PAG oil.

Y__ N__

CAB CIRCULATION FANS FRONT

The cab shall include two (2) all metal 6.00 inch air circulation fans installed overhead in the center of the cab rearward of the windshield. Each fan shall be controlled by an individual toggle switch on each fan. The fans can be used to help defog the windshield or to increase air circulation for passenger comfort.

Y__ N__

CAB CIRCULATION FANS REAR

The cab shall include two (2) individually switched all metal construction 6.00 inch fans which shall be installed in the upper rear cab corners as far outboard as possible. The multi purpose fans can be used to increase air circulation or help defog windows.

Y__ N__

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 0.75 inch thick including a vertically lapped polyester fiber layer, a 1.0 lb/ft² PVC barrier layer, an open cell foam layer, and a moisture and heat

reflective foil facing reinforced with a woven fiberglass layer. The foil surface acts as protection against 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 3 mils of acrylic pressure sensitive adhesive and aluminum pins with hard hat, hold in place fastening heads.

Y__ N__

INTERIOR TRIM FLOOR

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 and aluminum trim molding. 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.

Y__ N__

INTERIOR TRIM VINYL

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.

Y__ N__

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.

Y__ N__

TRIM CENTER DASH

The main center dash area shall be constructed of durable vacuum formed ABS composite.

Y__ N__

TRIM LH DASH

The left hand dash shall be a one (1) piece durable vacuum formed ABS composite housing which shall be custom molded for a perfect fit around the instrument panel. The left hand dash shall offer lower vertical surface area to the left and right of the steering column to accommodate control panels.

Y__ N__

TRIM RH DASH

The right hand dash trim shall consist of a vacuum formed ABS composite module, which contains a glove compartment with a hinged locking door and a Mobile Data Terminal (MDT) provision. The

glove compartment size shall be 13.50 inches wide X 6.25 inches high X 5.50 inches deep. The MDT provision shall be provided above the glove compartment.

Y__ N__

ENGINE TUNNEL TRIM

The cab engine tunnel shall be covered with a multi-layer mat consisting of 0.25 inch closed cell foam with a 0.06 inch thick non-slip vinyl surface with a pebble grain finish. The mat shall be held in place by pressure sensitive adhesive. The engine tunnel mat shall be trimmed with anodized aluminum stair nosing trim for an aesthetically pleasing appearance.

Y__ N__

POWER POINT DASH MOUNT

The cab shall include two (2) 12 volt cigarette lighter type receptacles in the dash to provide a power source for 12 volt electrical equipment. The receptacles shall be wired battery direct.

Y__ N__

STEP TRIM

Each cab entry door shall include a three step entry. The first step closest to the ground shall be constructed of polished 5032 H32 aluminum Grip Strut® grating with angled outer corners. The step shall feature a splash guard to reduce water and debris from splashing in to the step. The splash guard shall have an opening on the outer edge to allow debris and water to flow through rather than becoming trapped within the stepping surface. The lower step shall be mounted to a frame which is integral with the construction of the cab for rigidity and strength. The middle step shall be integral with the cab construction and shall be trimmed with a Flex-Tred® adhesive grit surface material.

Y__ N__

UNDER CAB ACCESS DOOR

The cab shall include an aluminum access door in the left crew step riser painted to match the cab interior paint with a push and turn latch. The under cab access door shall provide access to the diesel exhaust fluid fill.

Y__ N__

INTERIOR DOOR TRIM

The interior trim on the doors of the cab shall consist of an aluminum panel constructed of Marine Grade 5052-H32 0.13 of an inch thick aluminum plate. The door panels shall include a painted finish.

Y__ N__

DOOR TRIM KICKPLATE

The inner door panels shall include an aluminum tread kick plate which shall be fastened to the lower portion of the door panels.

Y__ N__

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.

Y__ N__

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 rear outer edge of the door. The lowest portion of each door skin shall include a reflective tape chevron with red and white stripes and a Spartan logo. The chevron tape shall measure 6.00 inches in height.

Y__ N__

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.

Y__ N__

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.

Y__ N__

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.

Y__ N__

INTERIOR TRIM VINYL COLOR

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

Y__ N__

INTERIOR TRIM SUNVISOR

The header shall include two (2) sun visors, one each side forward of the driver and officer seating positions above the windshield. Each sun visor shall be constructed of Masonite and covered with padded vinyl trim.

Y__ N__

INTERIOR ABS TRIM COLOR

The cab interior vacuum formed ABS composite trim surfaces shall be gray in color.

Y__ N__

INTERIOR FLOOR MAT COLOR

The cab interior floor mat shall be gray in color.

Y__ N__

CAB PAINT INTERIOR DOOR TRIM

The inner door panel surfaces shall be painted with Zolatone #20-72 silver gray texture finish.

Y__ N__

HEADER TRIM INTERIOR PAINT

The metal surfaces in the header area shall be coated with Zolatone #20-72 silver gray texture finish.

Y__ N__

DASH PANEL GROUP

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

Y__ N__

SWITCHES CENTER PANEL

The center dash panel shall include six (6) switch positions in the upper left portion of the 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.

Y__ N__

SWITCHES LEFT PANEL

The left dash panel shall include thirteen (13) switches. There shall be six (6) switches across the top of the panel and seven (7) across the bottom of the panel. Five (5) of the top row of switches shall be

rocker type and the left one (1) shall be the headlight switch. Five (5) of the lower row of switches shall be rocker type and the left two (2) shall be the windshield wiper/washer control switch and instrument lamp dimmer switch.

A rocker switch with a blank legend installed directly above shall be provided for any position not designated by a specific option. The non-designated 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.

Y__ N__

SWITCHES RIGHT PANEL

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

Y__ N__

SEAT BELT WARNING

A Weldon seat belt warning system interlocked for actuation with park brake release shall be installed for each seat within the cab. The seat belt warning shall be integrated with the Vehicle Data Recorder system. The seat belt warning system shall activate an indicator light, an audible alarm in the instrument panel, a digital seat position indicator with a seat position legend, an audible alarm in the switch panel, and an audible alarm behind the switch panel.

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 audible alarm shall remain active until all occupied seats have the seat belts fastened.

Y__ N__

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.

Y__ N__

SEAT COLOR

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

Y__ N__

SEAT BACK LOGO

The seat back shall include the “Spartan Chassis” logo. The logo shall be centered on the standard headrest of the seat back and on the left side of a split headrest.

Y__ N__

SEAT DRIVER

The driver's seat shall be a Seats Inc. 911 Universal series. The four-way seat shall feature 3.00 inch vertical travel air suspension and manual fore and aft adjustment with 6.00 inches of travel. The suspension control shall be located on the seat below the left front corner of the bottom cushion. The bottom seat cushion shall include an adjustment for rake angle offering added comfort.

The seat position shall include a three-point shoulder harness with lap belt and an automatic retractor attached to the cab. The buckle portion of the seat belt shall be mounted on a semi-rigid stalk extending from the seat base within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 37.00 inches measured with the seat suspension height adjusted to the upper limit of its travel.

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.

Y__ N__

SEAT BACK DRIVER

The driver’s seat back shall include an IMMI brand SmartDock® Gen 2 hands-free self contained breathing apparatus (SCBA) holder. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Y__ N__

SEAT MOUNTING DRIVER

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

Y__ N__

OCCUPANT PROTECTION DRIVER

The driver's position shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The driver's seating area APS shall include:

- Advanced seat belt system - retractor pre-tensioner tightens the seat belt around the driver, securing the occupant in the seat and the load limiter plays out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

- Large side curtain airbag - protects the driver's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to the driver in a qualifying event by covering the window and the upper portion of the door.

- Dual knee airbags (patent pending) with energy management mounting (patent pending) - protects the driver's lower body from dangerous surface contact injuries, acceleration injuries, and from intrusion as well as locks the lower body in place so the upper body shall be shall be slowed by the load limiting seat belt.

Steering wheel airbag - protects the driver's head, neck, and upper torso from contact injuries, acceleration injuries, and contact points with intrusive surfaces as a result of a collision.

Y__ N__

SEAT OFFICER

The officer's seat shall be a Seats Inc. 911 ABTS Battalion series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be a non-adjustable type seat.

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 minimum vertical dimension from the seat H-point to the ceiling for this 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.

Y__ N__

SEAT BACK OFFICER

The officer's seat back shall include an IMMI brand SmartDock® Gen 2 hands-free self contained breathing apparatus (SCBA) holder. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Y__ N__

SEAT MOUNTING OFFICER

The officer's seat shall offer a special mounting position which is 2.00 inches rearward of the standard location offering increased leg room for the occupant.

Y__ N__

OCCUPANT PROTECTION OFFICER

The officer's position shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The officer's seating area APS shall include:

- Advanced seat belt system - retractor pre-tensioner tightens the seat belt around the officer, securing the occupant in the seat and the load limiter plays out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

- Large side curtain airbag - protects the officer's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as

provides ejection mitigation protection to the officer in a qualifying event by covering the window and the upper portion of the door.

Knee airbags - protects the officer's lower body from dangerous surface contact injuries, acceleration injuries, and from contact points with intrusive surfaces as a result of a collision as well as locks the lower body in place so the upper body shall be slowed by the load limiting seat belt.

Y__ N__

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.

Y__ N__

SEAT REAR FACING OUTER LOCATION

The crew area shall include two (2) rear facing crew seats, which include one (1) located directly behind the left side front seat and one (1) located directly behind the right side front seat.

Y__ N__

SEAT CREW REAR FACING OUTER

The crew area shall include a seat in the rear facing outboard position which shall be a Seats Inc. 911 ABTS Battalion series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position.

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 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.

Y__ N__

SEAT BACK REAR FACING OUTER

The crew area seat backs shall include an IMMI brand SmartDock® Gen 2 hands-free self contained breathing apparatus (SCBA) holder. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Y__ N__

SEAT MOUNTING REAR FACING OUTER

The rear facing outer seats shall offer special mounting positions which shall be 2.00 inches towards the rear wall offering additional space between the front seats and the outer rear facing seats.

Y__ N__

OCCUPANT PROTECTION RFO

The rear facing outer seat position(s) shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

Each rear facing outer seating position APS shall include:

- APS advanced seat belt system - retractor pre-tensioners tighten the seat belts around each occupant, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

Side curtain airbag - protects each occupant's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to each occupant in a qualifying event by covering the windows and walls adjacent to each seating position with an airbag custom designed for each cab configuration.

Y__ N__

SEAT REAR FACING CENTER LOCATION

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

Y__ N__

SEAT CREW REAR FACING CENTER

The crew area shall include a seat in the rear facing center position which shall be a Seats Inc. 911 Battalion series. The seat shall feature a tapered and padded seat back and cushion.

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 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.

Y__ N__

SEAT BACK REAR FACING CENTER

The crew area seat backs shall include an IMMI brand SmartDock® Gen 2 hands-free self contained breathing apparatus (SCBA) holder. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Y__ N__

SEAT MOUNTING REAR FACING CENTER

The rear facing center seat shall be mounted facing the rear of the cab.

Y__ N__

OCCUPANT PROTECTION RFC

The rear facing center seat position(s) shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

Each rear facing center seating position APS shall include:

- APS advanced seat belt system - retractor pre-tensioners tighten the seat belts around each occupant, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

Side curtain airbag - provides ejection mitigation protection to each occupant in a qualifying event by covering the windows and walls adjacent to crew seating with an airbag custom designed for each cab configuration.

Y__ N__

SEAT FRAME REAR FACING CENTER

The rear facing center seating shall include a seat frame which is located and installed behind the engine tunnel. The seat frame shall measure 40.75 inches wide X 12.00 inches high X 15.88 inches deep. The face shall include a cutout measuring 32.00 inches wide X 5.50 inches high to allow air flow and access to the under seat climate control. The seat frame shall be constructed of 0.19 inch thick Marine Grade 5052-H32 smooth aluminum plate. The seat box shall be painted with the same color as the remaining interior.

Y__ N__

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.

Y__ N__

SEAT CREW FORWARD FACING OUTER

The crew area shall include a seat in the forward facing outer position which shall be a Seats Inc. 911 Battalion series. The seat shall feature a tapered and padded seat, and cushion. The seat and cushion shall be hinged and compact in design for additional room and shall remain in the stored position until occupied.

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 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.

Y__ N__

SEAT BACK FORWARD FACING OUTER

The crew area seat backs shall include an IMMI brand SmartDock® Gen 2 hands-free self contained breathing apparatus (SCBA) holder. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Y__ N__

OCCUPANT PROTECTION FFO

The forward facing outer seat position(s) shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

Each forward facing outer seating position APS shall include:

- APS advanced seatbelt system - retractor pre-tensioners tighten the seat belts around each occupant, securing the occupants in seats and load limiters play out some of the seat belt

webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

Side curtain airbag - protects each occupant's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to each occupant in a qualifying event by covering the windows and walls adjacent to each seating position with an airbag custom designed for each cab configuration.

Y__ N__

SEAT FRAME FORWARD FACING

The forward facing outboard seating positions shall include individual enclosed seat frames for each position located and installed at the outer rear wall positions. The seat frames shall measure 21.81 inches wide X 8.63 inches high X 22.00 inches deep. The seat frames shall be constructed of Marine Grade 5052-H32 0.19 inch thick aluminum plate. The seat frames shall be painted with the same color as the remaining interior.

Y__ N__

SEAT FRAME FORWARD FACING STORAGE ACCESS

There shall be two (2) access points to this storage area on the front of the seat frame.

Y__ N__

CAB FRONT UNDERSEAT STORAGE ACCESS

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

Y__ N__

SEAT COMPARTMENT DOOR FINISH

All underseat storage compartment access doors shall have a Zolatone #20-72 silver gray texture.

Y__ N__

WINDSHIELD WIPER SYSTEM

The cab shall include a dual arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers which shall be affixed to a radial wet arm. The system shall include a single motor which shall initiate the arm in which both the left hand and right hand windshield wipers are attached, initiating a back and forth motion for each wiper. The wiper motor shall be activated by an intermittent wiper control located within easy reach of the driver’s position.

Y__ N__

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.

Y__ N__

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.

Y__ N__

DOOR LOCKS

Each cab entry door shall include a manually operated door lock. Each door lock may be actuated from the inside of the cab by means of a red knob located on the paddle handle of the respective door or by using a TriMark key from the exterior. The door locks are designed to prevent accidental lock out.

Y__ N__

DOOR LOCK LH REAR CAB COMPARTMENT

The left hand side rear compartment shall feature a manual door lock.

Y__ N__

DOOR LOCK RH REAR CAB COMPARTMENT

The right hand side rear compartment shall feature a manual door lock.

Y__ N__

GRAB HANDLES

The cab shall include one (1) 18.00 inch knurled, anti-slip, one-piece exterior assist handle behind each cab door. The assist handle shall be made of 14 gauge 304- stainless steel and be 1.25 inch diameter to enable easy grabbing with the gloved hand. Each assist handle shall include a stainless steel plate which saves the cab from scuffs through continued use of the handle.

Y__ N__

AUXILIARY GRAB HANDLE

There shall be a 7.00 inch molded stainless steel grab handle with a bright finish attached to the front fascia of the cab in the center below the windshield. The handle installation shall include steel reinforcement behind the front cab fascia.

Y__ N__

REARVIEW MIRRORS

Retrac Aerodynamic West Coast style dual vision mirror heads model 613305 shall be provided and installed on 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 mirror vibration.

The mirrors shall measure 8.00 inches wide X 19.00 inches high and shall include an integral convex mirrors installed in the mirror head below the flat glass to provide a 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 mirrors shall be constructed of a vacuum formed chrome plated ABS plastic housing that is corrosion resistant and shall include the finest quality non-glare glass.

Y__ N__

REARVIEW MIRROR HEAT SWITCH

The heat for the rearview mirrors shall be controlled through a rocker switch in the mirror control panel on the left side dash.

Y__ N__

CAB FENDER

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. Each two-piece liner shall consist of an inner liner 16.00 inches wide made of vacuum formed ABS composite and an outer fenderette 3.50 inches wide made of 14 gauge 304 polished stainless steel.

Y__ N__

MUD FLAPS FRONT

The front wheel wells shall have mud flaps installed on them. The mud flaps shall extend from the outer edge of the wheel well to the inner edge of the wheel well to provide additional protection from road spray.

Y__ N__

CAB EXTERIOR FRONT & SIDE EMBLEMS

The cab shall include one (1) Spartan ERV emblem installed on the front air intake grille and one (1) chassis emblem with an integrated model nameplate installed on the exterior of the cab on the lower forward portion of the front driver and officer side doors.

Y__ N__

CAB EXTERIOR MODEL NAMEPLATE

The cab shall include custom "Metro Star Advanced Protection System" nameplates integrated into the side emblem.

Y__ N__

IGNITION

A master battery system with a keyless start ignition system shall be provided. Each system shall be controlled by a one-quarter turn Cole Hersee switch, both of which shall be mounted to the left of the steering wheel on the dash. A chrome push type starter button shall be provided adjacent to the master battery and ignition switches.

Each switch shall illuminate a green LED indicator light on the dash when the respective switch is placed in the "ON" position.

The starter button shall only operate when both the master battery and ignition switches are in the "ON" position.

Y__ N__

BATTERY

The single start electrical system shall include six (6) Optima yellow top, 900 CCA batteries with a 155 minute reserve capacity and 4/0 welding type dual path starter cables per SAE J541. The cables shall have encapsulated ends with heat shrink and sealant.

Y__ N__

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. The batteries shall be held in place by non-conducting phenolic resin hold down boards.

Y__ N__

BATTERY BOX COVER

Each battery box shall include a steel cover which protects the top of the batteries. Each cover shall include flush latches which shall keep the cover secure as well as a black powder coated handle for convenience when opening.

Y__ N__

BATTERY CABLE

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

Y__ N__

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. 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.

Y__ N__

ALTERNATOR

The charging system shall include a 320 amp Leece-Neville 12 volt alternator. The alternator shall include a self-exciting integral regulator.

Y__ N__

BATTERY CONDITIONER

A Kussmaul 1200 battery conditioner shall be supplied. The battery conditioner shall be mounted in the cab in the LH rear facing outer seating position.

Y__ N__

BATTERY CONDITIONER DISPLAY

A Kussmaul battery conditioner display shall be supplied. The battery conditioner display shall be mounted in the cab, viewable through the cab mid side window behind the left front door.

Y__ N__

AUXILIARY AIR COMPRESSOR

A Kussmaul Auto Pump 120V 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.

Y__ N__

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 1000 Charger - 3.5 Amps
Kussmaul 1200 Charger - 10 Amps
Kussmaul 35/10 Charger - 10 Amps
1000W Engine Heater - 8.33 Amps
1500W Engine Heater - 12.5 Amps
120V Air Compressor - 4.2 Amps

Y__ N__

ELECTRICAL INLET LOCATION

An electrical inlet shall be installed on the left hand side of cab over the wheel well in the forward position.

Y__ N__

ELECTRICAL INLET CONNECTION

The electrical inlet shall be connected to the battery conditioner and the air pump.

Y__ N__

ELECTRICAL INLET COLOR

The electrical inlet connection shall include a red cover.

Y__ N__

HEADLIGHTS

The cab front shall include four (4) rectangular halogen headlamps with separate high and low beams mounted in bright chrome bezels.

Y__ N__

FRONT TURN SIGNALS

The front fascia shall include two (2) Whelen model 600 4.00 inch X 6.00 inch programmable LED amber turn signals which shall be installed in a chrome bezel outboard of the front warning and headlamps.

Y__ N__

HEADLIGHT LOCATION

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

Y__ N__

SIDE TURN/MARKER LIGHTS

The sides of the cab shall include two (2) LED round side marker lights which shall be provided just behind the front cab radius corners.

Y__ N__

MARKER AND ICC LIGHTS

In accordance with FMVSS, there shall be five (5) LED cab marker lamps designating identification, center and clearance provided. These lights shall be installed on the face of the cab within full view of other vehicles from ground level.

Y__ N__

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 to 80% brilliance when the battery master switch is in the "On" position and the parking brake is released.

Y__ N__

GROUND LIGHTS

Each door shall include an LED NFPA compliant ground light mounted to the under side 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. The ground lighting shall be activated by the opening of the respective door as well as being activated when the parking brake is set.

Y__ N__

STEP LIGHTS

The middle step located at each door shall include a recess mounted 4.00 inch round LED light which shall activate with the opening of the respective door.

Y__ N__

ENGINE COMPARTMENT LIGHT

There shall be an incandescent NFPA compliant light mounted under the engine tunnel for area work lighting on the engine. The light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life. The light shall activate automatically when the cab is tilted.

Y__ N__

LIGHTBAR PROVISION

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

Y__ N__

CAB FRONT LIGHTBAR

The lightbar provisions shall be for one (1) Whelen brand Freedom FN72QLED lightbar mounted centered on the front of the cab roof. The lightbar shall be 72.00 inches in length. The lightbar shall feature six (6) red LED lights and two (2) clear LED lights. The clear lights shall be disabled with park brake engaged. The lightbar shall include an Opticom mounted centered in the front of the light bar. The cable shall exit the lightbar on the right side of the cab.

Y__ N__

LIGHTBAR SWITCH

The light bar shall be controlled through the master warning switch.

Y__ N__

SIDE SCENE LIGHTS

The cab shall include two (2) Fire Research Spectra 900 LED surface mount lights, one (1) each side. Each light shall be 6.75 inches high X 9.00 inches wide and have a profile of less than 1.75 inches beyond the mounting surface. Wiring shall extend from a weatherproof strain relief at the rear of the light.

Each lamp head shall have twenty-four (24) white LEDs that generate a rated 5000 lumens at 12 or 24 volts DC. The lens shall redirect the light along the vehicle and out onto the working area. The light housing shall be aluminum with chrome colored bezel.

Y__ N__

SIDE SCENE LIGHT LOCATION

The scene lighting located on the left and right sides of the cab shall be mounted in the upper forward portion of the 20.00 inch raised roof of the cab between the front and rear crew doors.

Y__ N__

SIDE SCENE ACTIVATION

The scene lights shall be activated by two (2) rocker switches located in the switch panel, one (1) for each light, and by opening the respective side cab doors.

Y__ N__

INTERIOR OVERHEAD LIGHTS

The cab shall include a two-section, red and clear Weldon incandescent dome lamp located over each door. The dome lamps shall be rectangular in shape and shall measure approximately 9.50 inches in length X 5.00 inches in width with a black colored bezel. The clear portion of each lamp shall be activated by opening the respective door and both the red and clear portions can be activated by individual switches on each lamp.

An additional incandescent three (3) light module with dual map lights shall be located over the engine tunnel which can be activated by individual switches on the lamp.

Y__ N__

LIGHT TOWER PROVISION

The cab roof shall include reinforcement for a light tower. The reinforcement shall consist of four (4) aluminum pads mounted to the exterior of the cab roof and additional internal cab roof structure. The entire reinforcement shall be integral with the roof for rigidity. The light tower shall be provided and installed by the body manufacturer.

Y__ N__

LIGHT TOWER MODEL

The light tower provisions shall be for a Will-Burt Nightscan model 4.5 (NS-15) light tower with six (6) 240 volt 1500 watt quartz-halogen Fire Research Optimum light heads.

Y__ N__

LIGHT TOWER ORIENTATION

The roof reinforcement shall be installed parallel to the rear wall of the cab.

Y__ N__

LIGHT TOWER HORIZONTAL JUSTIFICATION

The roof reinforcement shall be justified to the center of the cab left to right.

Y__ N__

LIGHT TOWER LIGHT HEAD ORIENTATION

The roof reinforcement shall be oriented in order for the light head on the light tower to be to the left side while in the stored position.

Y__ N__

LIGHT TOWER FORE/AFT ORIENTATION

The roof reinforcement shall be oriented on the roof of the cab towards the rear wall of the cab.

Y__ N__

DO NOT MOVE APPARATUS LIGHT

The front headliner of the cab shall include a flashing red 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 6.00 inches long X 2.50 inches wide X 1.75 inches high and 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.

Y__ N__

MASTER WARNING SWITCH

A master switch shall be included in the main rocker switch panel. The switch shall be a rocker type, red in color and labeled “Master” for identification. The switch shall feature control over all devices wired through it. Any warning device switch left in the “ON” position shall automatically power up when the master switch is activated.

Y__ N__

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.

Y__ N__

HEADLIGHT FLASHER SWITCH

The flashing headlights shall be activated through a rocker switch on the switch panel. The rocker switch shall be clearly labeled for identification.

Y__ N__

INBOARD FRONT WARNING LIGHTS

The cab front fascia shall include two (2) Whelen 600 series Super LED front warning lights in the left and right inboard 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.

Y__ N__

INBOARD FRONT WARNING LIGHTS COLOR

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

Y__ N__

FRONT WARNING SWITCH

The front warning lights shall be controlled through the master warning switch.

Y__ N__

INTERSECTION WARNING LIGHTS

The chassis shall include two (2) Whelen 600 series Super LED intersection warning lights, one (1) each side. The lights shall feature multiple flash patterns including steady burn for solid colors and multiple flash patterns for split colors.

Y__ N__

INTERSECTION WARNING LIGHTS COLOR

The intersection lights shall be red with a clear lens.

Y__ N__

INTERSECTION WARNING LIGHTS LOCATION

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

Y__ N__

SIDE WARNING LIGHTS

The cab sides shall include two (2) Whelen 600 series 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.

Y__ N__

SIDE WARNING LIGHTS COLOR

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

Y__ N__

SIDE WARNING LIGHTS LOCATION

The warning lights on the side of the cab shall be mounted over the front wheel well directly over the center of the front axle.

Y__ N__

SIDE AND INTERSECTION WARNING SWITCH

The side warning lights shall be controlled through the master warning switch.

Y__ N__

TANK LEVEL LIGHTS

There shall be two (2) Whelen PSTANK water level light strips surface mounted vertically, one (1) on each side of the cab behind the front cab doors. The lights shall be mounted in the flat roof position.

The light strips shall feature four (4) colors of LED lights to indicate the fluid level of a tank. The colors from top to bottom shall be green, blue, amber, and red.

Y__ N__

TRAFFIC CONTROL

There shall be one (1) GTT (Global Traffic Technologies) Opticom model 795H traffic control optical emitter mounted in the lightbar on the front of the cab roof. The emitter shall be activated by a lighted rocker switch on dash and shall be deactivated when the parking brake is applied.

Y__ N__

INTERIOR DOOR OPEN WARNING LIGHTS

The interior of each door shall include one (1) red 4.00 inch diameter Truck-Lite halogen warning light located on the door panel. Each light shall activate with a flashing pattern when the door is in the open position to serve as a warning to oncoming traffic.

Y__ N__

SIREN CONTROL HEAD

A Whelen 295HFS2 electronic siren control head with remote amplifier shall be provided and flush mounted in the switch panel with a location specific to the customer's needs. The siren shall feature 200-watt output, hands free mode and shall be in "standby" mode awaiting instruction. The siren shall offer radio broadcast, public address, wail, yelp, or piercer tones and hands free operation which shall allow the operator to turn the siren on and off from the horn ring if a horn/siren selector switch option is also selected.

Y__ N__

AIR HORN ACTIVATION

The air horn activation shall be accomplished by two (2) lanyard cables, one (1) on the left hand side accessible to the driver and one (1) on the right hand side accessible to the officer. An air horn activation circuit shall be provided to the chassis harness pump panel harness connector.

Y__ N__

BACK-UP ALARM

An ECCO model 575 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.

Y__ N__

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.

The instrument panel shall contain the following gauges:

One (1) electronic speedometer shall be included. 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.

One (1) electronic tachometer shall be included. The scale on the tachometer shall read from 0 to 3000 RPM.

One (1) two-movement gauge displaying primary system, and secondary system air volumes and integral LCD odometer/trip odometer shall be included on the lower portion of the LCD. The scale on the air pressure gauges shall read from 0 to 150 pounds per square inch (PSI). The air pressure scales shall be linear to operate with an accuracy of 1 degree of the measured data with a red indication zone on the gauge showing critical levels of air pressure. A red indicator light in the gauge shall indicate a low air pressure, as well as a message on the LCD screen. The odometer shall display up to 9,999,999.9 miles. The trip odometer shall display 9,999.9 miles. The LCD shall display Transmission Temperature in degrees Fahrenheit on the upper portion of the LCD. The LCD screen shall also be capable of displaying certain diagnostic functions.

One (1) four-movement gauge displaying engine oil pressure, coolant temperature, fuel level, voltmeter, and an *indicator bar displaying Diesel Exhaust Fluid (DEF) LED bar shall be included. The scale on the engine oil pressure gauge shall read from 0 to 120 pounds per square inch (PSI). The engine oil pressure scale shall be linear to operate with an accuracy of 1 degree of the measured. A red indicator light in the gauge shall indicate a low engine oil pressure, as well as a message on the LCD screen. The scale on the coolant temperature gauge shall read from 100 to 250 degrees Fahrenheit (F). The coolant temperature scale shall be linear to operate with an accuracy of 1 degree of the measured data with a red indication zone on the gauge showing critical levels of air pressure. A red indicator light in the gauge shall indicate high coolant temperature, as well as a message on the LCD screen. The scale on the fuel level gauge shall read from empty to full as a percentage of fuel remaining. An amber indicator light shall indicate low fuel at 25% tank level. The scale on the voltmeter shall read from 10 to 16 volts with a red indication zone on the gauge showing critical levels of battery voltage. A red indicator light shall indicate high or low system voltage, as well as a message on the LCD screen. The scale on the DEF LED bar will consist of four (4) LEDs displaying levels in increments of 25% of useable DEF in green. Upon decreasing levels, the indicator bar will change colors to notify the driver of decreasing levels of DEF and action will be required. An amber indicator light shall indicate low levels of DEF, as well as a message on the LCD screen and an audible alarm.

The instrument panel shall include a light bar that contains the following LED indicator lights and produce the following audible alarms in applicable configurations:

RED LAMPS

Stop Engine-indicates critical engine fault
Air Filter Restricted-indicates excessive engine air intake restriction
Park Brake-indicates parking brake is set
Seat Belt Indicator-indicates when a seat is occupied and corresponding seat belt remains unfastened
Low Coolant-indicates engine coolant is required

AMBER LAMPS

MIL-indicates an engine emission control system fault
Check Engine-indicates engine fault
Check Trans-indicates transmission fault
High Transmission Temperature-indicates excessive transmission oil temperature
ABS-indicates anti-lock brake system fault
HEST-indicates a high exhaust system temperature
Water in Fuel-indicates presence of water in fuel filter
*DPF-indicates a restriction of the diesel particulate filter
*Regen Inhibit-indicates regeneration has been postponed due to user interaction
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-Turn Signal On
Check Message-Door Ajar
Check Message-Cab Ajar
*Check Message-ESC Active
*Check Message-DPF Regen Active
Check Message-No Engine Data
Check Message-No Transmission Data
Check Message-No ABS Data
Check Message-No Data All Communication With The Vehicle Systems Has Been Lost
Check Message-Check Engine Oil Level
Check Message-Check Washer Fluid Level
Check Message-Check Power Steering Fluid Level
Check Message-Low Transmission Fluid Level
Check Message-Check Coolant Level

GREEN LAMPS

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 active
OK to Pump-indicates the pump engage conditions have been met
Pump Engaged-indicates the pump is currently in use
Auxiliary Brake-indicates secondary braking device is active

BLUE LAMP

High Beam Indicator

WHITE LAMP
Wait to Start-indicates active engine air preheat cycle

AUDIBLE ALARMS FROM GAUGE PACKAGE
High Trans Temp
High or Low Voltage
Check Engine
Check Transmission
Stop Engine
Low Air Pressure
Fuel Low
Water in Fuel
*ESC
High Coolant Temperature
Low Engine Oil Pressure
Low Coolant Level
*Low DEF Level
Air Filter Restricted
Extended Left and Right Turn Remaining On
Cab Ajar
Door Ajar
ABS System Fault
Seatbelt Indicator

EXTERNAL AUDIBLE ALARM
Air Filter
Cab Ajar
Door Ajar
Check Engine
Stop Engine
Low Air Pressure
Low Engine Oil Pressure
Water in Fuel
*Low DEF
ABS System Fault
Seatbelt Indicator
*Items marked with an asterisk are provided only in applicable configurations.

Y__ N__

BACKLIGHTING COLOR

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

Y__ N__

CAMERA

An Audiovox Voyager heavy duty rearview camera, complete with two (2) LCD display monitors shall be supplied. One (1) camera with a teardrop shaped chrome plated housing 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 shall be wired to two (2) 7.00 inch flip down monitors which shall include a color display and day and night brightness modes. One (1) monitor shall be installed above the driver and one (1) in the rear cab pump panel hood extension area centered in the ceiling and above the pump operator. The camera shall activate when the transmission is placed in reverse.

Y__ N__

COMMUNICATION ANTENNA

An antenna shall be installed on the cab. The antenna shall be a Motorola 800MHz - 900 MHz, models include 4914, 4916, and 4983. The antenna shall be mounted on the right hand front corner of the cab roof so not to interfere with light bars or other roof mounted equipment installed by Spartan Chassis. The antenna shall be provided by the customer.

Y__ N__

COMMUNICATION ANTENNA CABLE ROUTING

The antenna cable shall be routed from the antenna base mounted on the roof to the area underneath the right hand front seat.

Y__ N__

CAB EXTERIOR PROTECTION

The cab face shall have a removable plastic film installed over the painted surfaces to protect the paint finish during transport to the body manufacturer.

Y__ N__

FIRE EXTINGUISHER

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

Y__ N__

DOOR KEYS

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

Y__ N__

DIAGNOSTIC SOFTWARE OCCUPANT PROTECTION

Diagnostic software for the Spartan Advanced Protection System shall be available for free download from the Spartan Chassis website to Spartan authorized OEMs, dealers and service centers, as well as the vehicle owner.

The software has been validated to be compatible with the following RP1210 interface adapters:

- Dearborn Group DPA4 Plus
- Noregon Systems JPRO® DLA+
- Cummins INLINE5
- Cummins INLINE6
- NexIQ™ USB-Link™

The software and adapter utilize the SAE J1939-13 heavy duty nine (9) pin connector which is located below the driver's side dash to the left of the steering column.

Y__ N__

WARRANTY

Summary of Warranty Terms:

THE FOLLOWING IS SUMMARY OF WARRANTY TERMS FOR INFORMATION ONLY. THE ACTUAL LIMITED WARRANTY DOCUMENT, WHICH IS ATTACHED TO THIS OPTION, CONTAINS THE COMPLETE STATEMENT OF THE SPARTAN CHASSIS, INC. LIMITED WARRANTY. SPARTAN'S RESPONSIBILITY IS TO BE ACCORDING TO THE TERMS OF THE COMPLETE LIMITED WARRANTY DOCUMENT.

The chassis manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom built cab and chassis for a period of twenty-four (24) months, or the first 36,000 miles, whichever occurs first. The warranty period shall commence on the date the vehicle is delivered to the first end user.

Y__ N__

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.

Y__ N__

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) Digital copy of the Engine Owner's manual

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

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

Y__ N__

CAB/CHASSIS AS BUILT WIRING DIAGRAMS

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

Y__ N__

SALES TERMS

The sale of the Spartan 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.

Summary

04/29/2014

All figures are in US dollars

EQUIPMENT		EACH	TOTAL
Metro Star		241,780.00	
Cab Style ELFD 20" Raised Roof			
ADDITIONAL PURCHASED COVERAGES		0.00	
EPA SURCHARGE		0.00	
DISCOUNT		(29,013.60)	
PROGRAM DISCOUNT		(0.00)	
ADDITIONAL DISCOUNT		(0.00)	
FREIGHT		0.00	
ADDITIONAL FREIGHT		0.00	
SURCHARGE		0.00	
ADDITIONAL SURCHARGE		0.00	
TRAINING		0.00	
CHANGE FEE		0.00	
QUANTITY	1		
TOTAL EQUIPMENT PRICE		212,766.40	212,766.40

OTHER CHARGES	EACH	TOTAL
FET	0.00	
FET AMOUNT TOTAL		0.00
STATE TAX/OTHER FEES	0.00	0.00
TOTAL QUOTE		212,766

Dealer Signature

Customer Signature

Date

Date