Radnor OH new truck specs

CONDITION AND SCOPE

50.01 General Information

The proposed apparatus will be constructed to withstand severe and continuous circumstances encountered during emergency firefighting operations. The apparatus shall be designed and constructed with consideration to the nature and distribution of the load to be sustained. This proposal details the general design criteria of the cab and chassis, fire body, fire pump, water tank, electrical components, paint and graphics, and equipment. All proposed items shall conform to NFPA 1906, latest edition. The Seller shall furnish satisfactory evidence of the ability to construct, supply service parts, and technical assistance for the proposed apparatus.

CHASSIS

51.01 Seller Provided Chassis

The Seller shall provide the following chassis:

24'/25' Dodge RAM 5500 Cab/Chassis, Crew Cab, 60" CA, 4X4, Diesel, OEM Red.

Package:

173.4" WB

6.7L I6 Cummins Turbo Diesel Engine

6-Spd Auto Aisin AS69RC HD Trans

52-Gallon Rear Fuel Tank

ParkView Rear Back-up Camera

WolfBox G900 4k Backup Camera

Remote Keyless Entry

4 x Super Single tires and wheels with a 3.5" lifted suspension

1 x Spare Super Single tire and wheel

51.02 Front Bumper & Brush Guard

A heavy-duty bumper with brush guard shall be installed on the front of the apparatus. The complete assembly shall follow the chassis body lines and encompass the perimeter of the chassis front. The bumper shall be coated with a black powder coat finish. The bumper shall provide a solid mounting area for warning lights, speakers, and other specified equipment.

51.03 Electric Winch 12,500 lbs.

A 12-volt electric powered winch shall be permanently installed at the front center bumper extension area. The unit shall include the following:

- 12,500 lbs. load rating
- Thermo-metric indicator for motor temperature monitoring
- Cable roller guide assembly
- At least 90 feet of 7/16" diameter galvanized cable and hawse fairlead & safety hook assembly shall be supplied.
- Winch speed shall be constant with forward and reverse modes controlled with a push button device at the end of a 12 feet (12') minimum control cable which connects to the winch through a weatherproof receptacle.

51.04 Nerf Bars

Two (2) 3" black nerf bars shall be installed on the chassis.

51.05 Chassis Protection

Air Intake Ember Guards: The chassis air intake and cabin air filter shall be protected by an ember guard of 18 Mesh, 0.017-inch wire diameter, and a maximum mesh opening of 0.039 inches. The ember guard shall be sized to fit and located at the intake opening. The screen shall be readily accessible for inspection and maintenance.

Fuel Line & Harness Protection: Any fuel lines or electrical harnesses below the chassis frame rails shall be protected with a fireproof sleeving, loom, or protective material.

BODY & ACCESSORIES

52.01 Fire Apparatus Body

Body Mounting: Rubber Rail Cushion shall be 1" X 4" X 11" with a 65-durometer hardness rating. Attached cushion to the frame with 12 countersunk bolts 2.50" x 0.375" NC washers and Nylocks. A four position (2 springs each) springer body mounting system shall be used to mount the platform to the chassis. This system shall be designed to allow independent movement between the platform frame and the chassis frame protecting the module from the stresses and twisting rendered by the flexing of the chassis frame. The 2-spring top modules will be attached to the platform long sill with an electrolysis/corrosion barrier. The spring collapse shall be rated

at 1250-lbs and 2" of collapse travel. All of the mounting hardware (nuts, bolts, washers) required for complete body installation shall be Grade 8. All nuts shall be self-locking style. All mounting components shall be painted black.

Flatbed Construction: The apparatus body shall consist of a flatbed aluminum construction with overall dimensions of approximately 96" W X 111" L. The body shall be flat with +/- 0.125" deviation over the entire length or width and shall be square with 0.125" or less offset from the opposite parallel side.

Long Sills (LS): Two (2) Long Sills shall run full length in alignment with and perpendicular to the chassis frame rails. LS on bodies shall be rectangular c-channel aluminum alloy 4" H X 2" W X 0.25" wall thickness material.

Cross Sill Member (CSM): CSM on bodies shall be rectangular C-channel aluminum alloy 4" H X 1.50" W X 0.18" wall thickness material. CSM shall be located on maximum 12" centers. CSM to LS welds shall be 100% of the length of the contact edges on two opposing sides of the LS.

Outer Rail: The outer rail shall be rectangular C-channel aluminum alloy 6" tall X 1.90" wide minimum 0.20" wall thickness material. The outer rail shall form the complete bed perimeter without any open or offset seams. The outer rail shall consist of square rear corners.

Rear Cab Protection (RCP): One (1) RCP headboard shall be fabricated and installed at the forward end of the apparatus body, directly behind the cab. The RCP frame perimeter shall be rectangular C-channel aluminum alloy 4" tall X 1.5" wide minimum 0.18" wall thickness material. The material will be tapered in a similar fashion to the shape of the chassis cab.

One horizontal cross-member located at approximately 0.33" height with 0.125" aluminum diamond tread plate shall be perimeter welded with the tread plate surface forward to the rearward side of the framework on the lower segment. The upper segment shall include a protective framework of 1" X 1" tubing effectively safeguarding the rear window of the chassis cab. The unit shall be attached by a welded rearward gusset and to the lower frame itself by grade 5 bolts. The unit also has twin light bar perches on the top of the bar for easy mounting of emergency light products.

Tailboard: The tailboard shall consist of a framed tail apron integrated with the platform. The apron frame shall be rectangular C-channel aluminum alloy 3" tall X 1.40" wide minimum 0.17" wall thickness material. The interior flat surface of the apron shall consist of 0.125" aluminum smooth plate. The tailboard shall finish with the outside edge of the apron frame even with the corners of the platform. The apron shall house all referenced lighting, steps, and draft tube storage. The apron shall be sufficient in design to grant a departure angle of 24 degrees. The completed tailboard assembly shall meet all other requirements of NFPA 1906 for angle of departure.

Fuel Tank Filler: The fuel filler-neck and urea filler-neck bezels shall be incorporated into the bed channel outer rail unless using an OEM standalone system. Fuel cap shall not protrude

past the outer rail. The fuel tank filler shall be mounted in accordance with FMVSS 301. The fuel filler hose shall not touch any rough or sharp surfaces and will have no kinks or restrictions. Hose shall be supported by no more than 16" centers, have at least 6 inches clearance from the rear tire with any amount of suspension travel, and if closer than 12" to the tires, have a shield to protect it from objects that may be thrown from the tires.

Draft Line Storage: Draft hose storage shall be mounted under the platform, between the frame rails of the truck. The draft hose box shall be a minimum of 4.75" tall, 24" wide and 100" deep. The opening is covered with a drop hinged, slam shut, Stainless Steel door with push button latches.

Receiver Hitch: A receiver hitch and attached under the bar shall be installed on the chassis frame. The under bar is integrated with the lower section of the rear springer mounting system. Trailer wiring and factory brake controller shall be included.

52.02 Compartments

Compartment Construction: All storage compartment walls shall be constructed from 0.125” aluminum diamond plate. Internal Frame work shall be constructed of .125” formed aluminum structural members. Compartment interiors shall be free of exposed electrical harnesses or plumbing components.

Driver’s Side:

Top Front Compartment(s): This compartment shall have approximate dimensions of 72"L X 30"H X 18"D and shall include one (1) compartment with double horizontal hinged doors. This compartment is designed for the storage of long handled tools.

Top Rear Compartment(s): This compartment shall have approximate dimensions of 36"L X 30"H X 18"D and shall include a slide out tray.

Lower Front Compartment: This compartment shall have approximate dimensions of 36"L X 12"H X 18"D with a horizontal hinged drop door. This compartment shall be attached to the platform by its top.

Passenger's Side:

Top Front Compartment(s): This compartment shall have approximate dimensions of 72"L X 30"H X 18"D and shall include one (1) compartment with double horizontal hinged doors. This compartment is designed for the storage of long handled tools.

Top Rear Compartment(s): This compartment shall have approximate dimensions of 36"L X 12"H X 18"D and shall include a slide out tray.

Lower Front Compartment: This compartment shall have approximate dimensions of 36"L X 12"H X 18"D with a horizontal hinged drop door. This compartment shall be attached to the platform by its top.

Storage Cages: Two (2) storage cages shall be provided and installed above the top front compartments with approximate dimensions of 72"L X 8"H X 18"D. The storage cage shall be constructed of 0.125" aluminum with a punched open mesh material as to allow free air flow from all sides, double folded top 1" section for strength and a solid bottom. Outboard surface on both sides shall be un-punched approximately 5" to accommodate application of vinyl lettering. It shall be open at the top. They will be mounted by rubber cushion leaving a .125" gap underneath and stainless bolts with Nylocks.

Compartment Shelves: Four (4) adjustable shelves shall be installed in the top body compartments. The shelving system shall be mounted on a punched finger style slim-line track to allow the change of elevation. Shelves shall be 17.5" in depth, width of the box, with a 2" peripheral lip. Shelves shall be constructed of aluminum and be capable of supporting 250 lbs. of live load without being damaged or permanently distorted. The shelf locations shall be as follows:

-Two (2) in the D/S top front compartment

-Two (2) in the P/S top front compartment

Compartment Doors: All compartment doors shall be recessed into the compartment body sides. All doors shall be weatherproof and maintain contact with all points of the weather stripping. Weather stripping shall be bulb type, attached to the opening flange of the compartment opening. The doors shall have a cross style break in each door for strength.

Door Latches and Hardware: All compartment door latch assemblies shall be installed with threaded stainless-steel fasteners, shall not be welded, and shall be easily removable for servicing or replacement. All door latch assemblies shall be of a flush-mount, "D-handle" design, with all external components fabricated from polished, corrosion resistant stainless steel. All latches shall be of a two-position twist latch type design latching operation.

Stainless steel nuts shall be the self-locking type. All latch assemblies shall be keyed alike to 1250. Ten spare keys shall be provided.

Door Hold Devices: All vertically hinged, outward-opening compartment doors shall be provided with an over center door check to hold the door in the open position. The door check is spring type that when door latch is released the door "springs" to an open position. To release, the spring is moved from the straight position, and it folds into the "ready" to open position. It shall be attached to the top of the door and fastened to a plate bolted onto the door. All vertically hinged, outward opening compartment doors shall be capable of being closed with one hand, allowing a free hand to hold equipment or supplies.

All horizontally hinged, drop-down, outward-opening compartment doors shall open flat to the surface below. All horizontally hinged, overhead lift-up, outward opening compartment doors shall be provided with two (2) extending, gas cylinder type hold open devices, one (1) mounted vertically on each side of the compartment door opening. The pressure rating of the gas cylinders shall be carefully matched to the size and weight of the compartment door and shall hold the compartment door securely open to a greater than 90-degree angle without additional support. The gas cylinder hold openers shall dampen the upward movement of the compartment door while opening and will permit closing of the box door without need to release any type of manual locking devices.

52.03 Body Accessories

Dri-Dek: Dri-Dek shall be installed in all compartment floors and shelves. Dri-Dek provides surface protection and is resistant to fungus, mold, grease, solvents, and most common chemicals.

Mud Flaps: Two (2) flexible rubber mud flaps shall be installed on both sides of the apparatus body behind the rear wheels unless otherwise specified by the Purchaser.

Reflectors: Four (4) Truck-Lite #98034R red reflectors or equal shall be installed on the apparatus. Two (2) on each side, rear corners at the outermost practical location.

Rear Step: One (1) NFPA-compliant fold down step shall be provided and installed at the rear of the apparatus via the receiver hitch. The step shall be fabricated from heavy duty cast aluminum with spring assisted hinges. The stepping surface shall be diamond point and skid resistant so water may flow off without ice formation in cold weather use.

Grab Handles: Two (2) NFPA-compliant chrome-plated grab handles shall be provided and mounted at the rear. Location: vertical right side on manifold enclosure, horizontal top on pump panel.

Nozzle, Nozzle Clips, and Holder: One (1) Akron forestry nozzle shall be included per hose reel. A nozzle clip and tool holder shall be installed on the rear of the apparatus body.

Hydrant Wrench Holder: One (1) Equivalent three position captive latching type/hydrant/spanner wrench holder shall be permanently affixed to the pump-facing wall of the rear driver-side compartment unless otherwise specified by the Purchaser.

Drip Torch: One (1) drip torch with a heavy-duty 15-GA aluminum canister, welded double-bottom, and full-length handle shall be provided. The torch will meet D.O.T. approval for transport of flammable fuel UN#1B1-Y-150 and is painted red to comply with OSHA regulations 29 CFR 1910.144 while meeting USDA Spec 5100-614 and is USFS approved. The torch shall be mounted behind the rear facing wall of the rear compartment unless otherwise specified by the Purchaser.

Wheel Chocks: Two (2) ZICO wheel chocks shall be mounted rearward of the rear wheels. One (1) wheel chock will be mounted on each side of the apparatus.

Hose Hooks: Two (2) Hose hooks shall be provided and installed on the front and rear of the apparatus body for a total of four (4).

ELECTRICAL

53.01 Electrical System & Testing

Chassis Electrical System: The Commercial chassis electrical system shall be provided as furnished by the original manufacturer. A customized interface shall be provided and designed, so as not to disturb any of the required chassis functions. The necessary interfaces shall only be provided in areas where load management is allowed or with accessory components provided on the chassis.

Body Electrical System: All electrical lines in the body shall be protected by automatic circuit breakers, conveniently located to permit ease of service. Wiring shall be carefully protected from weather elements and snagging. Heavy duty loom shall be used for the entire length. To minimize the risk of thermal damage, wires run in the engine compartment area shall be carefully installed and suitably protected by the installation of heat resistant shielded loom. All electrical equipment shall be installed to conform to the latest federal standards as outlined in NFPA 1901.

Junction boxes: Two (2) electrical fuse boxes (battery and ignition), for all apparatus modules, connections, relays, circuit breakers, etc. shall be located in the console between the driver and the passenger seats. All connection points shall be labelled according to function.

12-Volt Electrical System Testing and Certification: The apparatus low voltage electrical system shall be tested and certified by the manufacturer. The certification shall be provided with the apparatus. All tests shall be performed with air temperature between 0 and 110 degrees Fahrenheit. The following three (3) tests shall be performed in order:

Test #1-Reserve Capacity Test: The engine shall be started and kept running until the engine and the engine compartment temperatures are stabilized at normal operating temperature and the battery system is fully charged. The engine shall be off and the minimum continuous electrical load shall be activated for 10 minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test failure.

Test #2-Alternator Performance Test at Idle: The maximum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

Test #3-Alternator Performance Test at Full Load: The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of 2 hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of less than 11.8-volts DC for a 12-volt system, for more than 120 seconds, shall be considered a test failure.

Low Voltage Alarm Test
Following completion of the preceding tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm is activated. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.8-volts shall be considered a test failure. The battery system shall then be able to restart the engine.

At time of delivery, documentation shall be provided with the following information:

- Each component load comprising the minimum continuous electrical load
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- An alternator rating at idle while meeting the minimum continuous electrical load
- Nameplate rating of the alternator
- Electrical system performance test

53.02 Center Console

The cab shall be equipped with an angled, form-fitted control console located between the front driver's and officer's seats. This console shall be sized to accommodate the installation of a switch panel for the control of the emergency and general illumination lighting, siren controller, and customer-mounted radios. The console shall contain the following components:

- One (1) 12V indicator and 2-position 12v power points
- Two (2) USB charging outlets
- One (1) Bracket and pre-wiring for customer-mounted radio
- One (1) Grilled area for below surface emergency radio speaker mounting
- One (1) Two position cup holder
- Two (2) Mic clip brackets
- One (1) Pocket storage compartment
- One (1) Siren & lighting controller
- One (1) standard radio faceplate (BK, Kenwood, or Motorola)

Electronic Siren, Speaker, & Lighting Controls: A **Tomar 948L** warning light control shall be installed in the center console. The siren shall feature a public address feature with a hardwired microphone. One Tomar SPK100 siren speaker shall be installed behind the chassis grill. The electronic siren and speaker shall meet the NFPA required SAE certification. The entire warning

light package shall be actuated by the Tomar siren controller located in the center console. The wiring for the warning light package shall engage all lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

53.03 Warning Light Package

A **TOMAR** premium dual-mode warning and scene lighting package shall be installed on the apparatus, as standard. All lights will be controlled from switches in the center console. The package includes the following:

Zone A Upper:
Lightbar w/Traffic Advisor, Take Down & Alley Spots Part # 970L-53D1-1201R7 TOMAR "Scorpion", 53" fully populated dual color warning lightbar shall be rigidly mounted on the top of rear cab protection headboard. The lightbar will be raised another 2-3 inches to accommodate the additional storage box mounted atop the water tank.

The lightbar shall be equipped with the following:

- Dual color 24 LED Corner Flood W/ Alley spots
- (6) Dual color front facing red/white 12 LED warning modules
- (2) High powered front-facing take downs
- (1) 6 LED front-facing steady-burn red
- (9) Rear facing 6 LED red and amber warning modules Built-in traffic advisor
- Aluminum chassis 15' Cable

Zone A Lower: Four (4) TOMAR iLED, dual color and dual-mode red/white LED lamps w/mounting flanges shall be installed on the front of the apparatus, forward facing, two (2) per side in the Hammerhead front bumper. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R

Zone B/D Front Lower: Two (2) TOMAR iLED dual color and dual-mode emergency warning and scene lights w/ mounting flanges shall be installed over the wheel well of the apparatus chassis, side facing, one (1) per side for use as "forward intersection" lights in red. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R

Zone B/D Rear Lower: Two (2) TOMAR Revolution 3x7 dual color and dual-mode emergency warning and scene lights w/ mounting flanges shall be installed on the rear sides of the apparatus body, over the rear wheel, side facing one (1) per side, for use as "rear intersection" lights in red. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R

Zone B/D Upper: Four (4) TOMAR Revolution 3x7 dual color and dual-mode emergency warning and scene lights w/ mounting flanges shall be installed on the upper storage basket on the apparatus body, side facing, two (2) per side for use as "rear intersection" lights in red. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R

Zone C Upper: Two (2) TOMAR Revolution 3x7 dual color and dual-mode emergency warning and scene lights w/ mounting flanges shall be installed on the upper storage basket on the apparatus body, rear facing in red. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R.

Zone C Lower: Two (2) TOMAR Revolution 3x7 dual color and dual-mode emergency warning and scene lights w/ mounting flanges shall be installed on the lower rail of the apparatus body, rear facing in red. Pre-programmed to 75 neobe flash and pre-phased. Secondary mode will override to white scene light, controlled from TOMAR 948L-SIREN-R.

Warning Light System Certification: The warning light system(s) specified above shall not exceed a combined total amperage draw of 45-amps with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way" mode. The warning light system(s) shall be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1900 Fire Apparatus Standard as noted in the General Requirements section of these specifications. The NFPA required "Certificate of Compliance" shall be provided with the completed apparatus.

53.04 Apparatus Body Lighting

LED Strip Compartment Lights: One (1) 12" LED cargo light, or equivalent shall be provided to illuminate the compartment. Lighting shall be plastic encapsulated, shock resistant, continuous LED light segments. The LED strip lights shall be attached securely on top of each compartment opening. Each compartment light shall be switched with a compartment lighting mechanical door switch. Each compartment light set shall be switched with a compartment magnetic switch and relay combination. The switch trigger wire shall run up front to the console to the compartment door open warning system on the console. The system shall also hook to the parking brake switch as a stop gap initiation.

Ground/Perimeter Lights - Front Bumper & body: One (1) E-10 Tecniq clear LED shall or equal shall be provided under the front bumper housed within an enclosure sufficient to protect from damage. This light shall operate from one of the chassis upfitter switches. Four (4) E-10 Tecniq clear LED lights or equal shall be provided under the apparatus body, one (1) forward and one (1) aft of the rear wheel wells, both sides of the body. Two (2) 4" Maxxima round LED lights shall be provided under the rear of the apparatus body. The lights shall be housed within an enclosure sufficient to protect from damage. The cab and body ground lights shall be equipped with an activation switch on the pump operator's panel.

Cluster/Clearance Lights: Three (3) round ICC LED clearance lights shall be installed at the rear of the apparatus above the bumper. Additional clearance lights shall be provided to conform to DOT, Federal, and NHTSA specifications for vehicles of 80" wide. All lighting shall be compatible with the 12-volt chassis electrical system. Lighting shall be located according to ICC regulations.

Back-Up Lights: Two (2) Truck-lite LED Oval Sealed 24 Diode Pattern, or equivalent, white LED back up lights shall be provided at the rear of the body, one (1) each side, above the rear step. The backup lights shall illuminate when the chassis is placed in reverse gear and/or when the rear flood light switch is activated in the cab.

Turn Signal Lights: Two (2) Truck-lite LED Oval Sealed 24 Diode Pattern, or equivalent, amber LED arrow style turn signal lights shall be provided at the rear of the body, one (1) each side, above the rear step.

Brake/Tail Lights: Two (2) Truck-lite LED Oval Sealed 24 Diode Pattern, or equivalent, red LED combination tail/ brake lights shall be provided at the rear of the body, one (1) each side, above the rear step.

License Plate Bracket and Light: A license plate mounting bracket with LED lighting shall be installed at the rear of the body.

A steady forward-facing red light shall be installed on the truck to comply with CA regulations.

2 Tomar off-road spot/food lights or similar shall be added mid-basket facing outward.

2 additional compartment lights shall be added to the back wall of the lower large side boxes.

53.05 LED Driving Light

Two (2) Tomar equivalent driving lights shall be mounted to the forward face of the bumper.

53.06 Battery System

Battery Charger System: One (1) Iota DLS-45/IQ4 12 Volt 45 AMP 4 Stage Automatic Smart Battery Charger shall be provided and installed behind the rear bucket seat on the driver's side. The charger is ruggedized to withstand the shock and vibration encountered by vehicle mounted equipment.

Auto-Eject: One (1) Kussmaul Super Auto Eject shall be provided and installed. The Super auto Eject is a completely sealed automatic power line disconnect. This prevents contamination of the mechanism by road dirt and ensures long reliable life even when mounted in the most severe environment. A novel internal switch arrangement closes and opens the 120-Volt AC circuit after the mating connector is inserted, and before the connector is removed. This eliminates arcing at the connector contacts and assures long contact life. The Super Auto Eject

is connected to the starter circuit so that ejection occurs when the engine is cranked. The unit is mounted in the rail of the rear cab protection. The cover will be red unless otherwise specified by the Purchaser.

Shoreline Power Inlet Plate: A shoreline power receptacle information plate shall be permanently affixed at or near the power inlet. The plate shall indicate the following:

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

Battery Disconnect Switch: One (1) Solid State battery cutoff switch shall be provided in the cab. The switch shall be located on the floorboard to the left side of the driver's seat and placed as far aft as possible to prevent accidental actuation. One (1) "Battery On" indicator lights, with a green lens, shall be provided on the center console, located forward on the left side. This light shall illuminate when the battery switch is turned to the "ON" position.

53.07 Alarms

Back-Up Alarm: One (1) solid state back up alarm shall be installed at the rear of the apparatus The backup alarm shall be wired to the reverse circuit of the transmission and shall provide an audible alarm to the rear of the apparatus when reverse gear is selected. The alarm shall have a volume of 87 to 112 DBA while in operation.

"Do Not Move Apparatus" Warning Light with Audible Alarm & Marker Lights: A 1" round, red flashing warning light with an integral audible alarm, shall be functionally located in the cab to signal when an unsafe condition is present such as an open cab door or body compartment door which may cause damage to the apparatus if moved. This light shall be activated when the parking brake is engaged. The labeled shall read "DO NOT MOVE TRUCK."

Cab marker lights and signaling devices shall be as provided on the commercial chassis cab from the original chassis manufacturer. Truck-Lite Model #30 or equal red LED marker lights with integral reflectors shall be provided at the lower side rear, one (1) each side and two (2) each on driver and passenger sides. Truck-Lite Model # 30 LED 3-lamp identification bar or equal will be provided on the apparatus rear center. The lights shall be red in color.

FIRE FIGHTING SYSTEM

54.01 Darley Pump, Primer, Engine & Foam System

Pump: One (1) **Darley** 1.5AGE24K pump shall be installed and will perform to the standards of NFPA 1900 low pressure pump rating. Maximum pump performance from 5' draft at sea level shall be: 100 GPM @ 150 PSI, 175 GPM @ 100 PSI and 250 GPM @ 50 PSI. Note: These performance points are for the pump as supplied from the pump manufacturer without any manifold. The actual flow may be decreased slightly when installed on the unit.

Engine: One (1) 4-cycle Kubota D902-E4B-KEA-2 diesel engine with overhead cam and water-cooled design shall be installed. Engine rating shall be 24.8 hp @ 3600 rpm and shall be designed to meet current CARB (California Air Resources Board) and EPA (Environmental Protection Agency) Tier 4 standards. A 12-volt electric system shall be installed with an electric starter and 45A alternator. Engine shall be equipped with a muffler and USDA approved spark arrestor. The engine and pump shall be isolation mounted.

Engine Fuel Supply: The pump engine shall siphon fuel from the chassis fuel tank via an electric fuel pump. Siphoning shall occur at a level 1.50" above the chassis siphon system.

Primer: One (1) positive displacement, oil-less, rotary vane, electric motor-driven priming pump, conforming to the NFPA requirements, shall be provided and installed on the cross member at the left rear of the body. The primer pump body shall be fabricated from heat-treated anodized aluminum for wear and corrosion resistance. The primer pump electric motor shall be of a 12 VDC totally enclosed design. The priming pump shall not require lubrication from an external source. The priming pump shall be operated by a single push-pull control valve mounted on the pump operator's panel. The control valve shall be constructed of bronze.

Foam System: One (1) Scotty Through-the-Pump foam system shall be installed on the completed unit. The unit shall consist of an eductor and proportioning valve between the inlet and discharge side of the pump. When in operation, it shall draw water flow from the discharge side, route it through the eductor and proportioning valve, draw foam concentrate through the proportioning valve, and provide foam solution back into the inlet side of the pump. Note: When the foam system is in operation, all discharges, including the tank fill, shall be supplied with foam solution. The foam system shall be capable of adjusting the foam concentration up to .5%.

During final inspection, an independent 3rd party shall perform a pump flow test to ensure all systems are properly operating and all conditions are met. An additional pump test may be requested by the purchaser.

54.02 Water & Foam Tank

Water Tank: One (1) 450 gallon water tank shall be provided and installed. Foam Tank: One (1) 12 gallon foam tank shall be integrated with the water tank.

Tank Construction: The tank shall have a footprint of 59.50" W x 75.50" L. The tank shall be designed to be completely independent of the platform structure and compartments and shall be equipped with removable lifting eyes to facilitate ease of removal. All exposed edges on the tank and fill tower shall be rounded off to a 0.25" radius. The tank shall be fabricated with 0.50" thick, non-corrosive stress relieved polypropylene, gloss black in color and U.V. stabilized for maximum protection. Materials used shall be compatible with firefighting foams, retardants, and wetting agents. All joints and seams shall be extrusion double welded and tested for maximum strength and integrity. The transverse baffle partitions shall be manufactured of the same material as the main body and extend from the floor of the tank to the cover to allow for positive welding and maximum integrity. Baffling will meet or exceed NFPA 1901. All baffle partitions

shall interlock with one another and be welded to each other, as well as to the walls of the tank. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. All internal piping shall be constructed of schedule 80 polypropylene pipe. The tank shall have a vent overflow pipe that extends through the tank and exits under the vehicle. The tank sump shall have a plate welded approximately 2" above the sump to prevent water swirl. There shall be piping inside the tank with a suction tube to the sump. The suction tube shall extend down through the anti-swirl plate and baffles. All fittings in the tank shall be heavy duty polypropylene and shall be welded inside and outside using industry acceptable practices. Tank inlets shall have flow deflectors inside the tank. The end wall of the tank, closest to the pump mount location shall have vertical translucent panel sight gauges for water and foam.

Fill Towers: The tank shall have two (2) manual fill towers with vents. One (1) fill tower shall be for water. One (1) fill tower shall be for foam. The towers shall be constructed of 0.50" polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The towers shall be located at the rear corners of the tank. The towers shall have 0.25" thick removable polypropylene screens and a PT3 polypropylene hinged cover. A combination vent and overflow pipe shall be fastened inside the fill towers, approximately 1.50" down from the top.

Tank Outlets: One (1) 3" female NPT tank to pump suction fitting shall be located on the driver's side rear facing wall of the tank.

Tank Inlets: One (1) 1" female NPT tank fill fitting with flow deflector shall be located on the driver's side rear facing wall of the tank.

54.03 Intake/Discharge Plumbing & Valves

Plumbing Specifications: All plumbing shall be stainless-steel pipe or high-pressure hose. High-pressure hose and hump hose connections shall be installed where vibration or chassis flexing may damage or loosen piping. Victaulic fittings shall be utilized to join plumbing.

Valves: All valves shall be designed to operate under normal conditions up to 500 PSI and shall have dual seats to work in both pressure and vacuum environments. All valves and controls shall be easily accessible for service, repair, or replacement. The discharge and intake valves shall be either direct actuated quarter turn type or control rods directly connected to the valve handle from the rear mounted pump panel.

Caps: All discharges and intakes shall have NST thread brass chrome rocker lug style caps with chains unless designed to be pre-connected or otherwise specified.

Suction:

Intake Manifold: One (1) 3" stainless-steel manifold shall be connected to the inlet side of the pump.

Tank to Pump: One (1) 3" tank to pump valve labeled "TANK TO PUMP" shall be attached to the intake manifold. The valve shall be plumbed to the tank by 3" stainless-steel pipe and hump hose.

Primary Suction: One (1) 2.5" primary suction valve labeled "SUCTION 2.5" shall be attached to the intake manifold. The valve shall be plumbed to the intake by 2.5" stainless-steel pipe. The intake will terminate with a NHM fitting. A removable intake screen shall be installed to prevent debris from entering the pump.

Discharge:

Discharge Manifold: One (1) 2.5" stainless-steel manifold shall be connected to the discharge outlet of the pump. Discharge valves shall be attached to the discharge manifold by welded pipe nipples. The manifold shall include a quarter turn petcock drain valve at the base.

Rear Discharge: One (1) 1.5" valve labeled "REAR DISCHARGE 1.5"" shall be attached to the discharge manifold. The discharge shall face the rear of the apparatus and terminate with a NHM fitting.

Mid Body Discharge(s): One (1) 1.5" valve labeled “MID BODY DISCHARGE 1.5”” shall be attached to the discharge manifold. The discharge shall be plumbed with stainless steel pipe through the water tank and shall connect to the two (2) operational valves one (1) on each side of the body via T-adapter. The discharge shall terminate with a NHM fitting.

Tank Recirculation: One (1) 1" valve labeled "RECIRCULATE" shall be attached to the discharge manifold. The valve allows for recirculation of water when discharge valves are closed and for the pump to be used to refill the water tank.

54.04 Hose Reel(s) & Booster Hose

Hose Reel Location: One (1) Hannay brand model # EPF 30-23-24 shall be provided and installed at the rear of the apparatus body on the passenger side.

Hose Reel Specifications: The hose reel shall have capacity for 150' of 1" booster hose. The hose reel outlet connection shall be 1" NPSH thread. The hose reel shall include a 2/3 HP 12V electric motor for rewinding the hose. The rewind control shall be located on the rear section of the hose reel frame. The hose reel shall include a 70-amp breaker. The hose reel shall also include manual rewind capability. The pinion shaft for the manual rewind gear shall have an adjustable tension brake controlled at the reel. One (1) FH3 captive roller assembly, or equivalent, shall be included with the reel. The frame and drum shall be fabricated of steel with aluminum powder coat finish and the sprocket shall be chrome plated to minimize maintenance.

Booster Hose: 150' of Reel Lite 1" booster hose shall be provided and installed on the hose reel. The booster hose shall be well suited for fighting applications. The booster hose shall be non-collapsible and extremely kink resistant, even at low pressure, with a bend radius of less than 3.5". The booster hose shall include circular woven construction, single jacket, and combined with a helical interior reinforcement.

54.05 Front Turret and Ground Sweeps

Akron Model 3462 Bumper Turret with Forrestry Nozzle shall be installed on the Front Discharge and remote operating control system installed in the Center Console.

A two nozzle (left and right) ditch / ground sweep system shall be installed on the front of the chassis, with the ability to be directly controlled while moving in the center console area.

54.06 Instrument Panel

The instrument panel shall include the following components:

- Pump Engine OFF/RUN/START Control
- Engine Ignition ON Warning Light
- Primer Control
- Throttle Control
- Oil Pressure Warning Light
- Coolant Temperature Warning Light
- One (1) E-03 Tecniq LED Light and Switch for Panel Illumination
- Tachometer/Hour Meter

Intake & Discharge Pressure Gauges: One (1) 2.5” compound pressure gauge shall be provided and installed on the pump panel. The gauge shall display 30 inHg to 400 PSI. The gauge shall be Class 1 brand or equivalent.

Water & Foam Level Gauges: One (1) water level gauge and (1) foam level gauge shall be provided and installed. The gauges shall be FRC "TANKVISION PRO" model or equivalent. The gauges include ultra-bright LEDs for sunlight readability and two wide-viewing lenses for 180 degrees of clear viewing. The gauges include a self-calibration feature to allow for use on tanks of different shapes and sizes. The gauges shall flash when the tank level reaches 25% capacity. The gauge level indicators shall be driven by a pressure transducer mounted low on the tank to sense static water pressure.

PAINT, GRAPHICS & LABELS

55.01 Cab Paint

The chassis cab shall be painted Red at the OEM.

55.02 Compartment Door Paint

The compartment door shall be painted to match the chassis cab unless otherwise specified by the Purchaser.

55.03 Data & Safety Labels

The following labels and signs shall be affixed to the apparatus:

Apparatus Fluid Type and Quantities: A permanently mounted label displaying the following information shall be installed in the apparatus interior near the driver's seat.

- Pump Engine Oil
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid (if applicable)
- Chassis Engine Oil
- Chassis Engine Coolant
- Chassis Transmission Fluid
- Chassis Drive Axle(s) Lubrication Fluid Chassis Air Conditioning Refrigerant Chassis Air
- Conditioning Lubrication Oil Chassis Power Steering Fluid
- Chassis Front Tire Cold Pressure Chassis Rear Tire Cold Pressure
- Chassis Maximum Tire Speed Rating Chassis Manufacturer
- Chassis Production Number
- Chassis Year, Month Manufactured Chassis Vehicle Identification Number

Unit Identification Placard: A unit identification placard shall be installed on the center console. The placard shall state the name and address of the apparatus manufacturer and the apparatus unit number.

Pump Operating Instructions & Specifications: An identification plate shall be provided near the instrument panel with step-by-step pump operating instructions and pump specifications.

Component Labels: All controls, valves, gauges, ports, drains, and other components shall be labeled.

Warning Labels: The following warning labels shall be installed in the chassis cab and be visible from the driver's seating position.

- "Maximum number of personnel the vehicle is designed to carry (5)."
- “DANGER: Personnel must be seated and seat belts must be fastened while the vehicle is in motion. Death or serious injury may result when the apparatus is in motion.”
- "DO NOT MOVE APPARATUS WHEN LIGHT IS ON"
- "This apparatus is equipped with an air filter ember protection screen. Routine inspection is required."

- "WARNING: Noise hazards occur during siren operation."

55.04 Chevrons The exterior diamond plate surface of the tailboard apron shall be covered with standard red and lime diamond grade reflective chevrons.

55.05 Delivery timeline

Vehicle must be constructed, tested and delivered to Radnor by 10/20/2025.

OTHER

56.01 Detailing & Finalization

The apparatus shall be tested to ensure proper operation of all systems. The finalization process includes paint touch up, caulking, washing and detail, checking fluid levels, etc.

56.02 Operation, Service, & Certification Material

The following materials shall be provided with the completed apparatus:

- Operator Safety Information
- Pump Operation and Troubleshooting Instructions
- Maintenance and Lubrication Information
- Component Literature
- Replacement Parts List
- Electrical Diagrams
- Pump Test Certificate
- Weight Certificate
- Warranty Information

56.03 Warranty

The apparatus shall be covered by a 1-year limited warranty. Warranty includes parts and workmanship.