



**Middlefield**

**Vol. Fire Co.**

***New Brush 6  
Specification***

Middlefield Volunteer Fire Company  
405 MAIN STREET, SUITE 7, MIDDLEFIELD, CT 06455 | 860-349-7124 |  
[WWW.MIDDLEFIELDIRECT.ORG](http://WWW.MIDDLEFIELDIRECT.ORG)

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# Specification For Middlefield Vol. Fire Company Brush 6

406 Jackson Hill Road  
Middlefield, CT 06455

This specification shall meet **NFPA 1906** and the **Type 4** Fire truck qualifications.

**The entire Vehicle shall not exceed 9.5' (114") in overall height and 24' (288") in overall Length.**

## **INTRODUCTION**

The Town of Middlefield will receive sealed bids for the furnishing of One (1) Type 4 Brush Truck and equipment as specified until 4:00 PM, Tuesday, December 6th, 2022.

Bids must be clearly marked or stamped "PROPOSAL – BRUSH TRUCK" on both sides of a sealed envelope along with opening date and time. The Town of Middlefield will not be responsible for accidental opening and will immediately reject bids with improper identification.

All bids will be addressed to First Selectman, Town of Middlefield, 393 Jackson Hill Road, Middlefield, CT, 06455.

Bid Opening will be at the Middlefield Fire Company, 406 Jackson Hill Road, Middlefield, CT on Tuesday, December 6th, 2022 at 6:30 PM, where all bids will be opened and read aloud.

The purchaser reserves the right to reject any or all bids and to accept the bid which they deem to be in their best interest and will not necessarily be bound to accept the lowest bid. An authorized official of the company that will build the apparatus shall sign all bids. Authority granted by the corporation's board of directors that the person signing the bid can commit the corporation to a lawful binding contract shall be furnished with the bid. **BIDS SUBMITTED IN THE NAME OF AND/OR SIGNED BY A SALES REPRESENTATIVE WILL IMMEDIATELY BE REJECTED.**

Bidders must have in operation a factory adequate for the production of the apparatus as specified herein. All bidders shall have been in business for a minimum of five (5) years. Bidders must state in their bids the time that will be required to make delivery of the items they propose to furnish. This time must be stated in calendar days, not working days, and must not exceed 465 days. The time limit shall be subject to adjustment after award due to delays caused by strikes, riots, acts of God, or other causes beyond the

control of the contractor, limitations or restrictions by any governmental agency having jurisdiction over the subject matter of the contract. No such delivery time extension shall be made for delays. If not received by the stated delivery date, there shall be a one hundred (100) dollar, per day penalty until delivery is accepted.

Bid price received shall be valid for a period of 60 days from the date of submission.

Questions regarding these specifications can be directed to Assistant Chief Jeff DiCostanzo in writing by email to [jdicostanzo@middlefieldfirect.org](mailto:jdicostanzo@middlefieldfirect.org).

## **Bid Posting Narrative**

### **Wildland Type 4 Fire Engine – Middlefield**

The Town of Middlefield is accepting sealed bids for the furnishing of one (1) Type 4 Brush vehicle as specified. This vehicle shall include a 2 person, All wheel drive, Diesel engine, Commercial cab and chassis equipped with at minimum the following: 500 gallon per minute pump with pump and roll capability, a minimum of 800-gallon water tank, and a 15 gallon class A foam tank with foam system. Bids shall be submitted following all instructions listed within the specification. Bids must be received by Tuesday, December 6th, 2022 at 4:00 PM, addressed to First Selectman, Town of Middlefield, 393 Jackson Hill Road, Middlefield, CT 06455. Bid opening will be at the Middlefield Volunteer Fire Company, 406 Jackson Hill Road, Middlefield, CT 06455 on Tuesday, December 6th, 2022 at 6:30 PM, where all bids will be opened and read aloud. Any questions regarding these specifications can be directed to Assistant Chief Jeff DiCostanzo by email at [jdicostanzo@middlefieldfirect.org](mailto:jdicostanzo@middlefieldfirect.org).

# **INSTRUCTIONS TO BIDDER**

## **GENERAL INSTRUCTIONS AND REQUIREMENTS**

It is the intent of these specifications to cover the furnishing and delivery of a completed and soundly engineered apparatus as hereinafter specified. These specifications cover the requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform.

Safety is the number one priority of the Middlefield Volunteer Fire Company and bids shall take that into consideration for all aspects of the apparatus.

Each bid shall be accompanied by a set of "Contractor's Specifications", consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract must conform. The bidder information, exceptions, and bidder compliance pages (included at the end of the document) must be returned and completed by the bidder. Failure to return these forms will cause the bid to be IMMEDIATELY REJECTED - NO EXCEPTIONS. All bidders must submit a proposal. Returning a copy of our specifications indicating compliance is not acceptable. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all non-specified features.

The National Fire Protection Association Pamphlet #1906- 2016 edition, or most current edition, is part of these specifications, the same as if they were written out in full detail with the exception of the section dealing with "Equipment Recommended for Various Types of Apparatus." Bidders shall supply the equipment requested, with the buyer supplying the rest before the unit is put in service. The apparatus will also comply with all OSHA standards, Federal and State of Connecticut Motor Vehicles rules that are in effect at the time of contract signing.

The apparatus shall be the manufacturer's latest design and model, and custom built per our specifications. The Bidder shall have been building this type and model of apparatus for a minimum of five (5) years. Units with less than five (5) years of field experience WILL NOT BE CONSIDERED. The apparatus will be weighed just before delivery with all equipment installed and the number of personnel that there are seats for. The apparatus will not be accepted or paid for until this has been done. If the apparatus does not comply with the axle loading laws in the State of Connecticut it will be IMMEDIATELY REJECTED.

Each bidder shall furnish satisfactory evidence of his ability to construct the apparatus as specified and shall state the location of the factory where the apparatus is to be built. The manufacturer shall also show that he is able to render prompt service and to furnish replacement parts for apparatus.

To ensure the purchaser of a source for service and parts over the anticipated 30-year life of the apparatus, the apparatus manufacturer shall maintain a factory service and testing facility within 75 miles of the Town of Middlefield.

## **GENERAL INSTRUCTIONS AND REQUIREMENTS - CONTINUED**

A data plate shall be installed in the cab. This plate shall contain the following information and meet all the requirements of NFPA 1906:

Engine oil type and quantity Engine coolant, type, and quantity

Transmission fluid, type, and quantity

Drive axle lubrication fluid, type, and quantity

Paint code and manufacturer

An accident prevention sign that states the number of personnel the apparatus is designed to carry shall be mounted in the cab in an area visible to the driver. Signs stating "OCCUPANTS MUST BE SEATED AND BELTED WHEN THE APPARATUS IS IN MOTION" shall be provided and shall be visible at all seating positions. An accident prevention sign shall be located at the rear step area to warn personnel that standing on the step while the apparatus is in motion is prohibited.

### **MAXIMUM DIMENSIONS**

1. Overall length 24 feet

2. Overall height 9 feet 6 inches

### **WARRANTY**

The following warranty shall be furnished on the entire apparatus.

Bidder shall warranty each piece of fire apparatus manufactured by them to be free of defects in material and/or workmanship under normal use and service for a period of two (2) Years from date of delivery to the original user. In addition, the body must be warranted for twenty (20) years, the tank must have a lifetime warranty, and the pump must have a five (5) year warranty. Bidder's obligation under this warranty shall be limited to repairing or replacing at their election any part or parts manufactured by them, which upon examination by them, prove to be defective. Part or parts will be returned to bidder, freight prepaid, accompanied by a claim in writing. Normal wear and deterioration are excluded from this warranty. All warranty work is to include labor. It shall also be the bidder's responsibility to cover any towing charges incurred for any warranty claims if the apparatus is ever disabled or unsafe to operate. The warranty period shall commence on the date the vehicle is delivered to the first end user.

This warranty shall be printed on a company form and shall be included with your bid. If any component manufacturer has a longer warranty, it shall be included at no additional cost to the fire company. A copy of the component manufacturer's warranty shall be placed in the service manual included with the complete apparatus upon delivery. The bidder shall be the single source for all warranty claims on the apparatus. As this apparatus and equipment on it is only one of a kind to the Middlefield Volunteer Fire Company, every effort will be made to have any repair done in the firehouse. The local service center must be a full-time business.

#### **• Body Warranty**

The body shall carry a (10) Ten-year structural warranty from structural defects. All removable hardware and equipment, door, hinge, latch, lock assemblies, mechanical items, electrical components, and surface finishes are excluded from this warranty.

There shall be at least Two (2) year electrical warranty from any electrical defects.

The following will need to be answered using the attached form at the end of this document:

1. Distance in miles from service center to Middlefield Fire House? (One Way)
2. Is the service center an authorized warranty center for the chassis being built?
3. Is the service center an authorized warranty center for the apparatus being built?
4. Does the service center offer 24 hour /365 days a year emergency service?
5. Is the service center enclosed and provided inside storage?
6. The number of mobile fully equipped service units?
7. The number of E.V. T. certified Fire Apparatus Mechanics?
8. The number of A.S.E. certified Fire Apparatus Mechanics?
9. The number of full-time employees?

### **QUALITY AND WORKMANSHIP**

The design of the apparatus shall embody the latest automotive engineering practices. Workmanship shall be of the highest quality in its respective field. Special consideration will be given to the following points: accessibility of the various components which require periodic maintenance, symmetrical proportions, ease of handling, operation, and proper distribution of load.

The construction shall be rugged and ample safety factors provided to carry loads as specified and to meet the required road, speed and stationary conditions and tests. Welding shall not be employed in the assembly of the apparatus in a manner to prevent the ready removal of any component part for service lubrication and/or repairs.

### **GENERAL CONSTRUCTION**

The complete apparatus shall be designed and constructed with due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subjected when placed in service. All parts of the apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair.

The apparatus shall be designed and constructed and the equipment so mounted, with due consideration to distribution of the load between front and rear axle that all specified equipment loose equipment, and men will be carried without overloading or injuring the apparatus.



## **USER LIST**

Each Bidder shall include a complete User list of all units within 250 miles of the purchaser, constructed within the last five (5) years. This will include the customer's name, contact person, address, and telephone number.

## **PERFORMANCE TESTS AND REQUIREMENTS**

An electrical systems performance test shall be performed prior to delivery in accordance with NFPA-1906-2016. Full documentation shall be furnished as stated in the above standard.

A road test will be conducted with the apparatus fully loaded and a continuous run of twenty (20) miles or more will be made under all driving conditions. During this time, the apparatus shall show no loss of power or overheating. The transmission, drive shafts and axles shall run quietly and be free from abnormal noise or vibration throughout the operating range of the apparatus.

The apparatus must be capable of accelerating to 30 MPH from a dead stop within 25 seconds on a level paved highway without exceeding the maximum governed RPM of the engine.

The service brakes shall be capable of stopping the fully loaded unit within 35 feet from 25 MPH on level paved highway.

The fully loaded unit shall be capable of obtaining a speed of 55 MPH on a level concrete highway with the engine not exceeding 95% of its governed RPM (full load).

From a steady speed of 15 MPH, the apparatus shall accelerate to a true speed of 35 MPH within 30 seconds. This shall be accomplished without moving the gear selector.

The tank must fill to at least 95% on level ground. This will be verified by the below table being completed. All weights are to be done on a certified scale.

The apparatus shall be tested and approved by a qualified testing agency in accordance with their standard practices for pumping engines.

The contractor shall furnish copies of the Pump Manufacturer's Certification of Hydrostatic Test (if applicable), the Engine Manufacturer's current Certified Brake Horsepower Curve and the Manufacturer's Record of Construction Details.

## **VEHICLE WEIGHT**

An identification tag with the gross vehicle weight and height will be mounted in the cab in a location visible to the driver. Exact location to be determined by MVFC. The successful bidder shall furnish a weight certification showing weight on the front and rear axle, and the total weight of the completed apparatus at the time of delivery.

## **FAILURE TO MEET TESTS**

In the event the apparatus fails to meet the test requirement of these specifications on the first trials, second trials may be made at the option of the bidder within Thirty (30) days from the date of the first trials. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection.

Failure to comply with changes necessary to conform to any clause of the specifications within Thirty (30) Days shall also be cause for rejection of the apparatus. Permission to keep or store the unit in any building owned or occupied by the purchaser during the above specified time period with the permission of the builder should not constitute acceptance.

## **EXCEPTIONS TO SPECIFICATIONS**

The following specifications shall be strictly adhered to. Exceptions will be allowed if they are equal to or superior to that specified and provided that they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS". Each exception shall specifically reference the page and paragraph to which exception is being taken.

PROPOSALS TAKING TOTAL EXCEPTION TO SPECIFICATIONS WILL NOT BE ACCEPTABLE. Apparatus shall be inspected upon delivery for compliance with specification. Deviations will not be tolerated and will be cause for rejection of apparatus unless such deviations were originally listed in the bidder's proposal and specifically indicated on the "EXCEPTIONS" Page.

Bids will be rejected which substitute less substantial materials and/or methods of body construction than those specified. Since all manufacturers have the ability to purchase the materials described as well as to shear, fabricate and assemble body panels as specified, these areas are considered a strict requirement of the specifications.

Should any Bidder find during examination of the specifications, any discrepancies, omissions, ambiguities, or conflicts, or be in doubt as to their meanings, they shall request from the purchaser in writing, an interpretation of the correction thereof, no later than five (5) working days before the bid opening. Said request shall be addressed to Brush 6 replacement committee, Middlefield Volunteer Fire Co., 405-7 Main Street, Middlefield, CT. 06455.

## **INSPECTION TRIPS**

During the course of construction, the builder will be required to make arrangements for two (2) Inspection trips (Pre-Paint, and Final Inspection) to his factory by three (3) people. The cost of these trips shall be borne by the builder. If nothing is mentioned in the bid pertaining to the

inspection trips, it will be assumed that the bidder is taking exception and will be rejected. A price shall be given for an additional person on each inspection trip. Trips in excess of 250 miles shall be by commercial airlines.

The Bidder shall be able to take and to show digital pictures of the apparatus while under construction at the factory. This shall be at a web site that is accessible to the Fire Company on a standard computer. This shall start when the chassis is received until final completion. This shall be updated weekly or whenever changes are necessary. The Fire Company reserves the right to inspect the apparatus at any time with reasonable notice.

### **CONTRACT AWARD**

When analyzing the bid proposals, and in recommending a successful bidder, superior design, workmanship, materials, operating costs, location of factory, past experience, length of incorporation, compliance with specifications, price and completion time will be taken into consideration.

### **GENERAL CONSTRUCTION**

The apparatus shall be designed and the equipment mounted with due consideration to distribution of load between the front and rear axles so that all specified equipment, including filled water tank, a full complement of personnel and fire hose shall be carried without injury to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of the International Association of Fire Chiefs and National Fire Association (or American Insurance Association). Certified Laboratories certificate shall be submitted by the manufacturer. Weight of apparatus shall meet all federal axle load laws.

### **DELIVERY REQUIREMENTS**

The apparatus shall be completely equipped as per these specifications upon arrival and on completion of the required tests shall be ready for immediate service in the fire company of the purchaser. Any and all alterations required at the scene of delivery to comply with these specifications must be done at the contractor's expense.

### **PURCHASER RIGHTS**

The Purchaser reserves the right to accept or reject any bid. The purchaser also reserves the right to award in their best interest and reserves the right to waive any formalities.

## **U.S.A. MANUFACTURER**

The entire apparatus shall be assembled within the borders of the Continental United States to insure more readily available parts (without added costs and delays caused by tariffs and customs) and service, as well as protecting the purchaser should legal action ever be required.

## **PAYMENT**

Final payment for the apparatus shall be made at time of delivery of the completed vehicle. Due to insurance liability, the apparatus will not be left at the purchaser's location without full acceptance and payment or prior agreement between the Purchaser and bidder.

Discounts allowed for down payment or other progress payments may be offered as options, but shall not be a requirement of the base price.

Final delivery price shall not include any Local, State or Federal taxes. The Bidder shall not be liable for any State or Federal mandated tax or program after sale or delivery of the apparatus.

## **PRE-CONSTRUCTION CONFERENCE**

A pre-construction conference shall be conducted at the Middlefield Fire Company Headquarters, at which time all final designs be approved, prior to any sheet metal being cut. All expenses for travel, meals and lodging shall be the responsibility of the successful Bidder. Bidder shall indicate the intention to provide the required pre-construction conference in the proposal packet. ALL equipment mounting locations will be approved at the pre-paint conference.

## **APPROVAL DRAWING**

After the award of bid and pre-construction conference, a detailed layout CAD drawing depicting the apparatus layout and appearance including any changes agreed upon shall be provided for customer review and signature. The drawing will become part of the contract documents. The drawing shall consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, shall have a general layout view of the pump operator's panel scaled the same as the elevation views. Measurements shall also be included in the drawing.

## **PERFORMANCE BOND**

There shall be an option for a Performance Bond equal to (100%) ONE HUNDRED PERCENT of the total contract amount. The bond shall insure prompt and complete performance of any contract entered as a result of the award of this bid. The purchaser shall receive the bond no later than fourteen (14) days after the award of the bid. The rating of the bonding company shall be provided and its current liability at the time of the bid. The bidder shall also provide its current overall liability and the number of apparatus in production or on contract at the time of the bid submission.

## **LIABILITY**

The successful Bidder shall defend against any and all suits, assume all liability for the use of any patented process, advice or article forming a part of the apparatus or any part furnished under contract.

The Bidder shall provide proof of product liability insurance in the amount of \$2,000,000.

## **FINAL DELIVERY AND TRAINING**

Final delivery of the completed apparatus shall be made via drive-a-way, Fire Company Headquarters, at which time Fire Company personnel shall be properly instructed as to the proper use of the entire apparatus including, but not limited to, chassis, the apparatus and all equipment. Delivery shall be made by a factory employed Delivery Engineer who shall be responsible for complete instruction as to operation and maintenance of the chassis, and the completed vehicle.

Delivery engineers shall remain at the Fire Company for a sufficient time to provide thorough training of all personnel, or as instructed by the Chief of the Department. This shall be a minimum of eight (8) hours with at least four (4) hours occurring on a Saturday or Sunday. All meals, motel and travel costs shall be the responsibility of the successful bidder.

## **Cab & Chassis:**

### **• Chassis**

2023 or 2024 Model year Commercial cab and chassis NFPA compliant with the following: AWD, 6 Wheeled, Regular cab, Cummins L9 Diesel 330 hp motor, Allison 3000 EVS automatic transmission with PTO provision, Exhaust stack on passenger side, Jacobs brake with H/M/L settings, at minimum 16,000# front axle, 23,000# rear axle, 50 gal fuel tank, 6 gal DEF tank, NFPA compliant 911 air suspension driver and passenger seats, Gray vinyl interior, NFPA seat belts with activation display, NFPA vehicle data recorder, Gauge cluster, AC/Heat, Adjustable tilt and telescoping steering column, Dual West Coast bright finish heated mirrors with convex mirrors, dual air horns, painted steel wheels (black), Michelin XDS 12R 22.5 16 ply traction tires (or equivalent), 97dB backup alarm, Red paint with clear coat.

## **Chassis:**

### **• Rear D Rings**

One pair of one inch D ring loops will be welded to the rear receiver hitch. Ultimate breaking strength is 46,760 lbs, with a working load limit of 15,586 lbs each. Factory supplied tow hooks will be left on the front of the chassis.

### **• Console**

There shall be a custom aluminum console installed in the chassis cab between the front bucket seats. The console shall be used for mounting of siren controls and other instruments and switches. The top of the console shall be finished with a black cover and have interchangeable plates for mounting siren controls, radios, and other equipment. A dual cup holder plate will also be included.

A master disconnect switch shall be installed on a factory up-fitter switch. Red flashing LED door ajar hazard warning lights shall be mounted in the dash, there shall be a single light for each compartment door. Hazard lights shall be visible to both driver and passenger when in the seated position.

### **• Ground Lights**

Lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off of the apparatus. The lights shall be LED and illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. These areas shall include, but not be limited to the cab doors or running boards, and the rear step area. The ground lighting shall be switched with the options to be activated when the park brake is set, steady burn, or off.

### **• Wheel Chocks**

Two Folding wheel chocks shall be furnished and mounted in vicinity of the driver side rear wheel.

### **• Rear Receiver Hitch**

A Class V 2" receiver tube shall be installed at the rear of the apparatus with two safety chain attachment points. The receiver tube shall be rated up to 16,000 lbs gross trailer weight and 1,600 lbs tongue weight. A seven pin female trailer plug will be installed near the receiver as well as factory installed electric trailer brake controller.

- **Front Receiver**

A Class V 2" receiver tube shall be installed at the front bumper for future use. The receiver tube shall be rated for up to 16,000 lbs.

- **Grille Guard**

A front grille guard will be installed on the front bumper. Guard will be manufactured of steel piping and be black powder-coated. The grille guard shall still allow the chassis hood to be opened uninterrupted..

## **Emergency Lighting and Siren Package:**

- **Whelen Brush Truck Light Package (Or Equivalent)**

**All lighting must meet NFPA 1906 Standards for warning zones and include written certification.**

All warning light flash characteristics and scene light intensities shall be controlled by a Whelen Cencom Core-R control system with expansion outlets and light bar operating via the WeCanX communications protocol. A Whelen Model C399R shall be mounted in an accessible electrical compartment. An appropriate number of WeCanX output modules, model CEM16, will control the flash characteristics of all remote mounted warning lights. All emergency lighting and siren controls will operate through the control unit. Each operational button will be marked accordingly. All warning lights shall be wired for a steady burn or "cruise" capability.

Whelen LED light bar Red with two (2) white take down lights facing forward.

One (1) 100 watt black speaker will be installed behind the grill.

Two (2) Whelen M2 (or equivalent) series super LED surface mount lights with a chrome flange will be installed as follows for lower level intersection notification; Two (2) will be mounted on the outermost sides of the front bumper. Both Red in color.

Eight (8) Whelen M6 (or equivalent) series super LED surface mounted lights with chrome flanges will be installed as follows for lower level notification; Two (2) will be mounted on the front grill, forward facing (Red), Two (2) will be mounted at the rear of the fire body, rear facing (Red). Two (2) will be mounted on each side of fire body up high (red)

Six (6) Whelen M6V2 (or equivalent) series warning/scene lights surface mounted with chrome flanges will be installed, Two (2) will be mounted on the driver's side of the fire body, outward facing (Red), Two (2) will be mounted on the passenger's side of the fire body, outward facing (Red) Two (2) will be mounted at the rear of the Bulkhead, rear facing (Red) (scene lights to be wired with ground lighting circuit)

- **Back up Lights**

Two (2) LED reverse lights mounted on the fire body tailboard area (White).

- **Stop/Tail Lights**

Two (2) LED stop/tail lights mounted on the fire body tailboard area (Red).

- **Directional Lights**

Two (2) LED turn lights mounted on the fire body tailboard area (Red).

- **Back-up Alarm**

The backup alarm shall be an electronic 97-decibel rated alarm installed at the rear of the vehicle. This alarm shall alert personnel any time the transmission is shifted into reverse gear.

## **Scene Lighting:**

- **12v Telescoping Scene Lights**

Two (2) Whelen LED Pioneer (or equivalent) light heads with telescoping poles or equivalent shall be installed on the front of the fire body headache rack, one (1) each side. Light heads shall have side mount telescoping poles, LED, 12 volt DC, 75 watt, black in color. Lights shall be controlled from in the cab console with NFPA compliant switches. The Lights shall not exceed height of the headache rack when in the stow position.

- **12v Surface Mount Scene Lights**

Six (6) Whelen LED (or equivalent) surface mount light heads with chrome flange shall be installed on the upper rear of side body compartments, rear facing, one (1) each side. Two (2) surface mount lights shall be mounted up high on the driver and passenger side of the body. Scene lights shall be controlled from inside the cab as well as at the pump console with NFPA compliant switches.

## **Electrical Equipment:**

All electrical equipment installed by the manufacturer shall conform to current automotive electrical system standards and the requirements of the applicable NFPA 1906. Apparatus Standard.

Wiring shall be individually function coded and permanently color coded. The insulation shall meet SAE Standard J1128 in its latest edition for GXL or SXL temperature rating. All exposed wiring shall run in loom with a minimum 280 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to structural frame members along the entire run. At any point where wire or looms must pass through metal, rubber grommets shall be installed to protect the wire from abrasion.

Electrical connections shall be made using heat shrink or weatherproof connections. Circuits shall be protected with circuit breakers or fuse blocks.



- **Battery Charger**

A Kussmaul auto charge 1000 automatic battery charger (or equivalent) with status center be installed and connected to the chassis battery system to maintain the vehicle in a constant state of readiness. The Auto Charge 1000 is a fully automatic battery charger for vehicles with a single battery system. Remote voltage sensing is provided to compensate the charger output for the voltage drop in the charging wires. An Auto Charge 1000 indicator shall be mounted remotely from the charger assembly at receptacle location. The charger system shall receive power from the 120-volt shoreline receptacle.

- **Auto Eject Shoreline Receptacle**

A flush mount Kussmaul model 091-56-12-194 (or equivalent) Super Auto Eject 120-volt shoreline receptacle shall be installed on the far rear, left side of the apparatus and connected to the charging system. When the vehicle is started the shoreline will automatically eject to prevent the vehicle from being driven away with the line connected. The receptacle shall be supplied with a Red weatherproof cover unless determined otherwise during pre-build meeting. An industrial grade 120-volt connector designed to function with the auto eject will be provided. The auto eject shall carry a two-year manufacturer warranty.

- **Auxiliary Air Compressor**

A Kussmaul 091-9B-1-AD 120V 100 PSI (or equivalent) air compressor shall be provided and installed in the cab. The vehicle mounted air compressor shall ensure that the air brake system is properly pressurized for immediate response of the unit. A pressure switch shall regulate operation and shall automatically sense low air pressure in the brake system and restore the proper pressure.

The compressor shall be wired to the 120V shoreline connection.

## **Graphics Package:**

- **Graphics**

A graphics package included to provide; Department designed layout for lettering and/or logo for each chassis front door. Single color reflective graphic striping will be installed from front of chassis body to tail of fire body. Department will work directly with the manufacturer for design and layout.

- **Chevron for Brush Body**

Chevron reflective graphics for a brush body will be installed on at least 50% of the rear of the fire body; colors will be NFPA reflective red and yellow. Each chassis door will have D.O.T. conspicuity tape installed on the interior to illuminate when doors are open for safety.

- **Chevron Front Bumper**

Chevron reflective graphics shall cover the front bumper; colors will be NFPA reflective red and yellow.

## **Body:**

- **Flatbed Brush Body**

A minimum of a 12.5' flatbed body shall be installed. The body shall be constructed entirely of aluminum. The flatbed shall be a maximum of 100" in width. The main frame sills shall be made of aircraft grade 8" aluminum channel with the cross members made of aircraft grade 3" aluminum channel. The perimeter of the body shall be made of 3/16 wall aircraft grade 2" X 4" tubing. There shall be 3/16 gussets on every other cross member braced to the long sills. The body floor shall be covered with 1/8" polished aluminum tread plate. There shall be a bulkhead that will be behind the chassis cab approximately 100" wide and shall be no taller than the chassis cab height. There shall be tread plate mounted on the entire front of bulkhead for vegetation deflection and protection. The rear bumper will be trimmed out on top and sides with 1/8" aluminum NFPA tread plate. The bumper shall extend approximately 8" from the body, and be approximately 18 - 24" from the ground to the top of the tailboard with grab handle matching the width of the step.

Any association of dissimilar metals shall be designed so the two metals do not contact each other. There shall be an isolation barrier installed to prevent dissimilar metal reactions. All stop, tail, turn, corner, back up and DOT lights shall be LED. A fill port for one (1) DEF tank will be provided, if needed. Mud flaps shall be mounted behind the front and rear tires. A lighted license plate holder shall be provided at the rear of the body. Reflectors shall be installed on the apparatus in accordance with federal motor vehicle safety standards.

The entire underside of the body shall be coated with a rubberized, chemically formulated, effective rust preventative undercoating before the body is final mounted. The undercoating shall be applied prior to installation of the body onto the chassis to avoid spraying the product on fuel lines, cables, or other items that would cause normal maintenance to be hindered.

- **Mounting**

There will be six (6) mounting points bolted to the chassis frame and the body. These mounts will be painted black to match the underbody. The aluminum body shall be separated from the steel chassis frame rails by a 3/4" rubber separator for flex and to resist galvanic dissolution.

- **Pull out Steps**

Two (2) lighted pull out and down steps will be installed at the rear of the body under the rear factory step to assist with access to the tailboard pump and tank area. One (1) installed driver's side and one (1) passenger side.

One (1) lighted pull out and down step shall be installed on each side of the body to ease in accessing upper dunnage compartments.

- **Grab Handles**

One (1) grab rail on each side of the cab. Two (2) vertical grab rails on the rear of the body. One (1) grab handle on top of tank to access upper compartments.

- **LED D.O.T. Marker Lights**

LED D.O.T. clearance lights and reflectors shall be installed in conformance to the latest Federal DOT standards.

- **Labeling**

All required NFPA labeling will be installed on the apparatus where applicable.

- **Compartment Lighting**

LED Strip lighting will be installed in each upper body and underbody compartments for maximum illumination. Two (2) will be installed in the DS upper compartment and two (2) in PS upper compartment, one (1) in each underbody compartment. Lights shall be activated by door switch or via parking brake.

- **Compartment Door Warning**

All compartments shall be equipped with a door switch that activates a warning light in the cab to alert all occupants per NFPA Standards.

- **Shelving**

Two (2) aluminum shelves will be supplied with each of the two (2) rear compartments. Shelves will be fully vertically adjustable by mounting in a heavy duty tracking channel, have a 2" lip around the entire shelf with black snap lock along the upper edge and Turtle Tile in the base. Reflective DOT tape will be installed on the outer front for illumination when doors are open if applicable. Shelf placement will be determined at a pre-build meeting.

## **Apparatus Compartments:**

### **Crosslays**

There shall be Two (2) crosslays directly behind the rear cab, deployable from each side, forward of the water tank. These will be preconnected with a 1.5" discharge with swivels and each capable of housing 250' of 1 3/4" jacketed hose and must be easily accessible from ground level to deploy and repack.

- **Rear Compartment**

A compartment will be at the rear of the apparatus in the area between the frame rails, the access door will be bottom hinged and have a stainless steel 90 degree turn style latch. Compartment will have a rubber seal to shield from water, dirt and debris. The approximate compartment dimensions will be 24"W x 6"T x 144" D.

- **Underbody Box**

Two (2) black aluminum boxes will be installed under the flatbed body, forward of the rear wheels. One (1) driver's side and one (1) passenger side. The approximate compartment dimensions will be 18"D x 18"T x 48"W. Turtle Tile will be installed in the base of the compartments.

- **Underbody Box Rear**

If space and departure angle allows, Two (2) black aluminum boxes will be installed under the flatbed body, behind the rear wheels. One (1) driver's side and one (1) passenger side. The approximate compartment dimensions will be 18"D x 18"T x 24"W. Turtle Tile will be installed in the base of the compartments.

- **Topside Hose bed**

A fabricated polished tread plate open top storage compartment will be installed on the top of the booster tank for future department 3" flat hose storage. The rear portion of the box will be left open for hose deployment. The approximate compartment dimensions will be 90"L x 50"W x 12"T. The driver's side area of the box will be divided to create a dunnage area for storage between the fill towers.

- **Topside Body Compartments**

Two (2) fabricated aluminum compartments shall be installed on top of the fire body, one (1) driver's side and one (1) passenger side. Compartments will be manufactured out of .1875" polished aluminum tread plate. Compartment doors will be top hinged up swing style with stainless steel 90 degree turn style latches and strap making closing the door more accessible, each having gas shocks installed to assist with opening and closing. Compartments will be constructed to shield from water, dirt and debris. The overall compartment construction and shelf supports shall be fully welded. The approximate compartment dimensions of each will be 80"L x 20"D x 36"T, each having two (2) doors. Turtle Tile will be installed in the base of the compartments.

- **Topside Open Storage Basket**

A fabricated polished tread plate open top storage box will be installed on top of the passenger side upper body compartment for long handle tool storage. The approximate compartment dimensions will be 80"L x 20"W x 12"T.

- **Topside Storage Box**

A fabricated polished tread plate coffin style hose storage box will be installed on top of the driver's side upper body compartment for flat hose storage. The top lid will be side hinged up-swing style with rubber bungee style latches, having gas shocks installed to assist with opening and closing. The rear portion of the box will be left open for hose deployment. The approximate compartment dimensions will be 80"L x 20"W x 8"T.

- **Compartment D1**

Driver's side front compartment will be non-transverse, compartment dimensions will be approximately 40" W x 36"T x 20"D. Compartment door opening shall be supplied with one (1) LED lighting strip mounted vertically on the inside of the door opening and activated by

an automatic switch located at each door with Turtle Tile in the base and drain holes in the floor.

- **Compartment D2**

Driver's side rear compartment will be non-transverse, compartment dimensions will be approximately 40" W x 36" T x 20"D. Compartment door opening shall be supplied with one (1) LED lighting strip mounted vertically on the inside of the door opening and activated by an automatic switch located at each door with Turtle Tile in the base and drain holes in the floor.

Ventilated compartment with mounting equipment for one (1) standard Stihl chainsaw, backpack blower, and two (2) 2.5 gallon gas cans.

- **Compartment P1**

Passenger's side front compartment will be non-transverse, compartment dimensions will be approximately 40" W x 36" T x 20"D. Compartment door opening shall be supplied with one (1) LED lighting strip mounted vertically on the inside of the door opening and activated by an automatic switch located at each door with Turtle Tile in the base and drain holes in the floor.

Two (2) SCBA Mounting brackets and Two (2) spare cylinder brackets shall be installed on the back wall.

- **Compartment P2**

Passenger's side rear compartment will be non-transverse, compartment dimensions will be approximately 40" W x 36" T x 20"D. Compartment door opening shall be supplied with one (1) LED lighting strip mounted vertically on the inside of the door opening and activated by an automatic switch located at each door with Turtle Tile in the base and drain holes in the floor.

Mounting of one (1) set of firefighting Irons (flathead ax and standard halligan bar) and two (2) 36" New York style hooks.

- **Construction**

All compartments have fully welded seams and be able to support the items stored in them, as well as on top of them. They shall be constructed out of .1875" marine grade aluminum. All compartments have to sweep out style floors and be properly drained in case of water entry.

- **Equipment Securement**

All equipment not within a closed compartment must be secured with "cargo netting" or equivalent per NFPA Standards.

## **Water Tank:**

### **• Polypropylene Water Tank**

A UPF polypropylene water tank shall be mounted on the bed with the capacity of Eight Hundred (800) gallons. The tank shall be mounted on each end with 2" bolt down tabs using steel grade 8 high shear strength bolts. The entire tank shall be constructed of polypropylene. The outside of the tank shall be a black matt finish. The tank shall be provided with a fill tower and removable screen, located at the driver's front corner. Tank shall have an appropriate sized vent and a 3" overflow. Tank shall have an appropriate sized tank suction to allow full use of the water in the tank and have a 1" drain located at the rear of the tank for access. Tank shall have a liquid level sight gauge located at the rear of the tank. Tank shall be equipped with a minimum of one (1) 3" direct fill line piped to the rear of the apparatus easily accessible from ground level for ease of filling. Tank shall have the ability to safely hold on top, 400 ft of 3" supply hose, and a rear 10" Newton dump valve cutout. Tank shall be baffled according to Tank Manufacturer recommendation. The tank shall have a lifetime warranty.

### **Tank Gauge**

One (1) Fire Research model #WLA400-A00 "Tank Vision" kit or equivalent for water, including two (2) displays. These shall be located on the vehicle dash and at the truck pump operator's panel and be blue in color.

### **• Class A Foam Tank**

A 20 gallon foam tank will be integrated into the water tank. Tank shall be provided with a fill tower and removable screen, located at the driver's side rear corner. A liquid sight gauge will be located at the rear of the tank.

### **• Newton Dump Valve**

A ten (10) inch manual Newton Dump (or equivalent) Valve will be installed at the rear center of the water tank.

Valve will be model 1050-34 with an extended telescoping chute and top mounted activation handle.

## **Pump:**

### **• Darley HE 64RS Or Equivalent pump to meet a minimum 500 GPM @125 psi**

A gas or diesel operated pump will be installed on the rear of the body. Pump to include; a 12v starter with recoil rope start back-up, 6 gallon EPA approved fuel tank , discharge pressure gauge, loss of prime shutdown, start/stop controls, Vernier throttle, and panel light. Operating pressure to be a minimum of 500 gpm at 125 psi. Pump must be capable of pulling a draft from a static source of water and utilize the static source to meet the full pump capacity.

Plumbing will have a cast aluminum expandable discharge manifold with full port discharge ball valves consisting of; One (1) 1" booster reel supply discharge, one (1) 3" tank fill line, two (2) 1.5" preconnect discharges with pressure gauge, one (1) 3"(2.5" coupling) rear discharge with pressure gauge, with cap and chain, one (1) 3" tank to pump line with swing out ball valve (2.5"), one (1) 4" suction line with swing out ball valve with plug and chain. High pressure rubber hose will be used only where applicable. Each lever function shall be clearly labeled. All discharge diameters are minimum size requirements.

- **Foam System**

A

FoamPro, or equivalent class "A" foam proportioner will be installed in-line in the discharge plumbing system. Features fully automatic foam proportioning, low concentration warning indicator, injection percentages from 0.1% to 1.0%. Foam to be plumbed to all discharges. A gauge for the level of foam in the tank is to be provided at the pump operator's station.

- **Firefighting Reel**

One (1) 150ft capacity (1" booster hose) electric rewind hose storage reel, will be installed on the rear of the bed facing the rear. One (1) steel roller assembly will be mounted on a reel. A push button rewind switch and trip breaker will be mounted on the reel easily accessible from ground level.

## **Options List:**

The following shall be listed as options priced accordingly.

**Performance Bond** There shall be an option for a Performance Bond equal to One Hundred Percent (100%) of the total contract amount.

**Inspection Trip:** Additional person to attend each inspection trip.

**Roll-up doors** Upper body cabinets outfitted with non painted, Rom or Amdor roll-up doors with a red reflective stripe running the length of the compartment.

**Pump** Vehicle can be outfitted with a PTO driven Darley HM-500, Hale, or equivalent pump with a minimum capacity of 500 GPM at 125 psi while maintaining pump and roll capabilities. If a PTO pump is selected by the manufacturer, it shall be located behind the cab and body compartments configured accordingly with drawing.

**Crosslay configuration** Crosslay trough's may be utilized to ensure hose is capable of being repacked from the ground level easily.

**Dump Valve** Electrically operated dump valve.

**Equipment** The following equipment pricing shall be provided

One (1) Flat Head ax

One (1) Standard Halligan bar

Two (2) New York style 3' Firefighting hooks

Two (2) 10' lengths of 4' lightweight hard suction hose

150' Lightweight non-collapsible 1" booster hose

## **Misc:**

### **•Manual**

Two (2) Copies of all manufacturer warranties, operation manuals, CAD drawing, and wiring diagram will be supplied to the department at time of final inspection and acceptance. The chassis owner's manual will be supplied with the finished apparatus.

### **•Shipping and Delivery**

Shipping, FOB, Delivery and training shall all be provided by apparatus builder and/or their designee.

## **BIDDER INFORMATION**

*Form to be completed by the bidder and returned with a proposal.*

**BIDDER NAME:** \_\_\_\_\_



**ADDRESS:** \_\_\_\_\_

**PHONE:** \_\_\_\_\_

**EMAIL:** \_\_\_\_\_

1. Distance in miles from service center to Middlefield Fire House? (One Way)  
\_\_\_\_\_
2. Is the service center an authorized warranty center for the chassis being built?  
\_\_\_\_\_
3. Is the service center an authorized warranty center for the apparatus being built?  
\_\_\_\_\_
4. Does the service center offer 24 hour /365 days a year emergency service?  
\_\_\_\_\_
5. Is the service center enclosed and provided inside storage? \_\_\_\_\_
6. The number of mobile fully equipped service units? \_\_\_\_\_
7. The number of E.V. T. certified Fire Apparatus Mechanics? \_\_\_\_\_
8. The number of A.S.E. certified Fire Apparatus Mechanics? \_\_\_\_\_
9. The numbers of full time employees? \_\_\_\_\_

**VEHICLE INFORMATION**

1. Chassis Manufacturer \_\_\_\_\_
2. Overall Length \_\_\_\_\_
3. Overall Height \_\_\_\_\_
4. Gross Weight (with water) \_\_\_\_\_

**BID PRICE:** \_\_\_\_\_