



## Town of Colchester Instructions to Bidders 2021-05 Engine/Pumper Fire Apparatus



### SCOPE

It is the intent of the Town of Colchester to procure three (3) CAFS Attack Engine/Pumpers fire apparatus to withstand severe and continuous use encountered in the rural fire service. This fire apparatus shall be new and the latest production model, symmetrically proportioned and constructed with due consideration of the loads sustained.

The following specifications detail the requirements for the general design of the cab and chassis components, the fire pump and related systems and components, the water tank, apparatus body, electrical systems and components, painting and furnished equipment.

All components, including those not specifically mentioned herein, but which are necessary in order to furnish a complete fire apparatus, shall be furnished and installed to the latest standards and practices in the fire apparatus manufacturing industry, National Fire Protection Association Pamphlet No. 1901, latest edition (2016), entitled "Standard for Automotive Fire Apparatus" are minimum specifications. The following specifications may exceed those specifications. Any costs associated with these increased specifications shall be included in the bid.

### GENERAL REQUIREMENTS

If any bidder has questions in connection with these specifications, please contact Deputy Chief Donald Lee at [deputychief@colchesterct.gov](mailto:deputychief@colchesterct.gov). The Town of Colchester will communicate to the bidder and explain the specifications in detail. It is not the intent of these specifications to eliminate any qualified bidder.

The Town of Colchester will review the question, and where information sought is not clearly indicated or specified, in the Town of Colchester's opinion, will issue a clarifying or correcting addendum bulletin. Proper interpretation or the making of any necessary inquiry will be the Bidders responsibility. Oral answers will not be binding on the Town of Colchester.

To be considered, all proposals must be made in accordance with these "Instructions to Bidders". Any contract in which the Town of Colchester shall enter into will include these specifications in whole and or as amended.

## UNITED STATES 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.

Where the following detailed specifications require specific brand names, model number, dimension or capacities of components such as: axles, brakes, spring suspension, frame, steering gear, drive line, universal joints, engine, transmission, alternator, batteries, brake system, they have been specified for this apparatus because of their reliability or availability of replacement parts on a local basis.

Since components specified by brand name, model number, dimension, size or capacity are readily available to all manufacturers and or potential bidders, substitutes or alternates claimed to be equal may not be acceptable.

This **specification package**, along with manufacturer's specifications and any herein forms, questionnaires, and listed exceptions **shall be submitted** as a part of the bidder's entire bid proposal. A Bidders checklist has been provided to assist the Bidder in providing all necessary documentation. It is included in the appendix section.

In no case shall a Bidder photocopy the purchaser's specifications and submit as their proposal specifications and bid.

Each bidder is required to provide in their bid a "complete and accurate description" of their own detailed product and engineering specifications.

In the event the published literature or other furnished documentation by the bidder is at variance with the requirements of any item of this specification, the bidder shall explain in detail, with full engineering support data, the reasons why the proposed equipment will meet this specification and not be considered an exception thereto. Exceptions will be considered during the evaluation process. Acceptance of any exception by the Town of Colchester shall be final. Please refer to the line numbers in the left hand margin of these specifications when making such explanation.

**These specifications shall be construed as minimum.** Should the manufacturer's current published data or specifications exceed these at the time of bid, they shall be considered minimum and be furnished. Bidders shall furnish, free of charge with their bid, technical graphs, charts, photographs, engineering diagrams, drive train certification, or other means to show that the equipment proposed fully complies with this specification.

## **COMPANY HISTORY**

The Bidder shall identify the location of their facility where this fire apparatus is to be manufactured and assembled and the number of regular full time employees at this facility. A complete history of the Bidder's company shall be supplied in its bid.

Bids are requested from the responsible manufacturers who are engaged in the manufacturer of Fire Apparatus and Emergency Vehicles as their sole product. To insure reliable and complete acceptance of the fire apparatus, the bidder shall have been in operation for minimum of 5 years in the fabrication and manufacture of Fire Apparatus. No exception to this requirement.

Each bidder shall submit a list of a minimum of fifteen (15) Fire Apparatus, 6 of which is in similar configuration to one being bid within the past 3 years. Provide in the Bid information of those nearest to Colchester, Connecticut.

## **COMPANY RESPONSIBILITY**

The bidder warrants to the Town of Colchester, by submitting the bid, that the company's fire apparatus construction responsibility is the sole, single source for all components, parts, subassemblies, final assembly, finish (whether or not manufactured and or assembled by the companies own forces), including delivery and acceptance. The Bidder cannot make claim against the Town of Colchester for difficulties and delays in procurement, construction, delivery and acceptance of any items specified by the Bidder.

## **COMPLIANCE AND CERTIFICATIONS**

The Bid three (3) CAFS Attack Engine/Pumpers shall comply with all Federal, and State of Connecticut requirements for Fire Apparatus, and NFPA – 1901 2016 edition.

The fire apparatus shall comply with all federal and state Motor vehicle laws.

Upon delivery the following certifications and documentation shall be provided on CD or USB drives:

1. Apparatus manufacturer, model and serial number.
2. Chassis make, model and serial number.
3. Pump manufacturer, make, model, serial number, rated capacity, number of stages, and impeller diameter in inches and pump manufacture's tested pump curve.
4. Tank manufacturer, make, model, serial number
5. GAWR of front and rear axles.
6. Certified chassis weight distribution by wheel in pounds with water and manufactured mounted equipment front and rear from a certified scale.
7. Engine make, model, and serial number, number of cylinders, bore, stroke, and displacement. Compression ratio, rated horsepower, related speed per SAE J690 certification of Maximum Net Horsepower for Motor Trucks and Truck Tractors and no load governed speed.
8. Electrical system voltage and alternator output in amps.
9. Engine to pump gear ratio and transmission gear ratio used.
10. Pump transmission, make, model, and serial number.
11. Priming device type.
12. Foam system, make, model, serial number and foam system flow certification.

13. Water tank and integral foam tanks certified capacity.
14. Paint numbers
15. The pump manufacturers' certification of suction capability.
16. A copy of the apparatus manufacturer's approval for stationary pumping applications
17. The engines manufacturers' certified brake horsepower curve for the furnished engine.
18. The pump manufacturer's certified hydrostatic test.
19. The apparatus manufacturer's piping and related systems certified hydrostatic test.
20. Underwriter Laboratory certification of and test of the fire pump.
21. Low voltage (12V) written load analysis and test results as required in these specifications.
22. Water tank flow certifications (tank to pump).
23. All apparatus manufacturers' warranties, engine with extended warranty, transmission with extended warranty, pump and related component warranties and all other warranties not listed above.
24. Completed as built electrical (12 V and 120V) wiring diagrams, drawings, sketches and component literature including lighting and repair parts lists and diagrams.
25. The apparatus manufacturer as conforming to all applicable federal motor vehicle safety standards in effect and the date of contract shall certify the chassis. This will be attested to by the attachment of a FMVSS certification label on the vehicle by the apparatus manufacturer who will be recognized as the responsible final manufacturer.
26. All operational, repair, and repair parts manuals for the chassis components, pump and related systems, water tank, foam system, apparatus manufacturer installed piping systems and components and the 120V generator.

The bidder shall certify in their bid that a completed apparatus record file, of all components utilized in manufacturing this apparatus, be maintained by the bidding apparatus manufacturer. This record file shall also contain any and all reported deficiencies, all replacement parts required to maintain this apparatus, original purchase documents, including specifications, contract, invoices, incomplete chassis certificates, quality control reports and final delivery acceptance documents. The Town of Colchester shall have access to this file upon request. The record file shall be maintained for a minimum period of twenty (20) years.

## **CONTRACT EXECUTION - PAYMENT – TAXES**

Upon award of the bid, a sales contract will be drawn between the Town of Colchester and the manufacturer of the apparatus. A Town of Colchester Purchase Order shall be issued for the Contract Price. Contracts drawn between the Town of Colchester and a sales representative, dealer, distributor, or agent of the apparatus manufacturer will not be acceptable. (No Exceptions.) All bidders shall be required to detail in exact terms the payment for said three (3) CAFS Attack Engine/Pumpers in their proposal. The terms for payment for the Bid Price shall be "payment in full upon delivery and acceptance" of the three (3) CAFS Attack Engine/Pumpers. Alternate terms for payment for the chassis and/or Pump and/or Fire Apparatus Body portion shall be permitted, provided a 100% performance/payment bond is provided, and title to the chassis is received by the Town of Colchester. 100% shall mean the total contract price. Such plans must be detailed in the bid in the alternate section.

The Bid price shall not include any local, State or Federal taxes. The Town of Colchester will provide the necessary tax-exempt information. The Town of Colchester shall not be liable for any State or Federally mandated tax or program after the sale of this Fire Apparatus.

## **BID BOND AND/OR BID SECURITY**

Each bid must be accompanied by a bond certified by a bonding company authorized to conduct such business in the State of Connecticut in the penal amount of ten percent (10%) of the maximum amount of the bid including all "add" alternates made in the name of the Bidder for the Town of Colchester, Connecticut as payee. In lieu of a bond the bidder may submit a certified bank check without any conditional constraints in the amount ten percent (10%) of the maximum amount of the Bid including all "add" alternates made to the Town of Colchester, Connecticut. No cash or pass book submittals shall be acceptable. This requirement is to assure the Town of Colchester the adherence of the Bidder to their Bid, the execution of the Contract, Insurance(s) certificates and the furnishing of performance and payment bonds if required.

Within ten (10) business days after the award of the contract, if an award is made, the deposits or bonds of the remaining unsuccessful Bidders will be returned, or if all bids are rejected, the deposits will be returned. Within ten (10) business days after the execution of the Contract and acceptance of the Bidder's bonds and insurance certificates by the Town of Colchester, the bid bond or deposit of the successful Bidder will be returned. If the Bidder so elects not to provide a performance/payment bond the bid bond shall be retained until delivery and acceptance of the Fire Apparatus.

If the Bidder to whom the contract is awarded, refuses or neglects to execute the contract, or fails to furnish the required insurance certificates or any required Performance bond within 14 calendar days after notice of award, the amount of his deposit will be forfeited and shall be retained by the Town of Colchester, without any claims of mistake or misfortune or remedies in the defense of any action based upon such accepted Bid by the Bidder or Bonding Company, as liquidated damages. If the bidder is not required to post a performance bond by virtue of 100% payment upon delivery and acceptance has not delivered and been accepted by the Colchester Fire Department, within 30 days from the contract delivery date shall be cause for the cancellation of the contract and forfeiture of the Bid deposit, without any claims of mistakes or misfortune or remedies in the defense of any action based upon such accepted Bid by the Bidder or Bonding Company, as liquidated damages. In addition to the Bid Bond or Security Deposit the Bidder shall also be liable for and agrees to pay the purchaser on demand the difference between the price bid by him/her and the price for which the Contract shall subsequently relent, together with the cost of relenting, if any, less the amount of the deposit.

### **INSURANCE/BONDS**

A certificate of insurance shall be required prior to the contract execution of a minimum of \$5,000,000 non aggregate umbrella coverage for any and all perils to any part of, or completed assembly including the chassis, the module and all associated equipment, parts, or subassemblies. Coverage shall include any and all liability costs or awards arising from any personal injury or property damage claims during chassis delivery, transportation of components for the construction of, and for the construction of said fire apparatus, and delivery to Town of Colchester. Coverage shall remain in effect even if the chassis title has been properly transferred to the Town of Colchester and shall only terminate upon final acceptance of the three (3) CAFS Attack Engine/Pumpers by the Town of Colchester. The certificate shall be endorsed as to hold harmless the Town of Colchester, its agents and assigns for any and all costs or awards arising from any personal injury or property damage claims.

The Bidder shall, if required, secure a 100% performance bond from a State of Connecticut authorized company prior to the execution of the contract. The amount is for the total contract price and shall secure the Town of Colchester against any and all indebtedness, including the defense of any and all indebtedness, for the design, manufacturing, procurement of all materials, parts, equipment, assemblies, and sub assemblies and labor for the design and construction of any or all materials, parts, equipment, assemblies, sub assemblies or any subcontractor's material and labor including delivery of this Fire Apparatus.

The Bidder shall stipulate in the Bid under the appropriate section of the Bid Form, if the company carries product liability insurance, the amount of coverage and to what aggregate amounts to date if any awards have been paid.

The manufacturer shall notify the Town of Colchester in writing, within 24 hours of any accident that has occurred to any person or property damage or damage to major components or its completed assembly during construction and delivery of this Fire Apparatus.

## **DELIVERY SCHEDULE**

Bidder shall on the Bid form, state in **calendar** days, the time from contract execution to acceptance by the Town of Colchester a completed and equipped as specified three (3) CAFS Attack Engine/Pumpers without constraints as to delivery, manufacture, assembly or construction of any part, or sub assembly, or equipment.

## **INFRINGEMENT LIABILITY**

The accepted Bidder, shall defend any and all suits and assume all liability for use and all claims made against the Town of Colchester (T.O.C.) or any of its officials or agents for the use of any patents, process, device(s), or article(s) forming a part of the fire apparatus or any equipment furnished under contract.

## **MANUFACTURERS REPRESENTATIVE**

The successful bidder will designate a competent manufacturer's representative, to perform single source communications between the Town of Colchester and the fire apparatus manufacturer on all matters concerning the contract.

## **APPROVAL DRAWINGS**

Detailed scaled CAD drawings shall be approved by the Town of Colchester prior to execution of any construction of the fire apparatus. The Town of Colchester and the manufacturer shall retain a copy. Final drawings shall be approved by the Chief of the Colchester Fire Department with copies to both parties and included as part of the sales contract and copies thereof.

The drawing(s) shall indicate pertinent dimensions, component and equipment locations, pump and piping layout, lighting and etc., all compartment locations and dimensions. The drawings shall be a visual representation of the fire apparatus to be supplied. Changes to the contract shall be represented as an addendum sketch to be attached to the final drawings. If a conflict or omission arises between the drawings and the written specifications the item shall be supplied as if contained in both the drawings and the specifications. Copies of the final drawings and any addendum(s) shall be included in the delivery documentation.

## **PREBUILD CONFERENCE**

The Bidder shall at the convenience of the Town of Colchester and within 14 days of contract execution attend a pre-construction conference. The conference agenda is for the purpose of working drawing reviews, and any clarifications concerning the fire apparatus construction. The Chief of the Colchester Hayward Fire Department or designee shall sign all working drawings and or construction detail acceptance

## **PLANT INSPECTION VISITATION**

The Bidder shall allow the Town of Colchester plant inspection visitations during manufacturer's normal working hours with 24-hour notice. The Bidder shall not carry any amounts in their bid for the transportation, lodging, meals or entertainment for any person or contingent of Colchester Hayward Fire Department members.

## **CONTRACT CHANGES**

Any changes to the contract once initiated shall be in writing in a form mutually agreed to by both contract parties and clearly state the nature of contract change, and whether or not any costs are involved. The change order must state the nature of the contract change, the amount of the change, and if the delivery date changes. The "change order" shall be signed by a duly authorized company person and by the First Selectman of the Town of Colchester. For any change that increases the contract price shall be accompanied by a Town of Colchester purchase order.

## **WARRANTY REQUIREMENTS**

Manufacturer shall warrant the new three (3) CAFS Attack Engine/Pumpers manufactured by it against defects in material and workmanship provided the three (3) CAFS Attack Engine/Pumpers are used in a normal and reasonable manner for which it is intended. The warranty shall be to the Town of Colchester for a period of not less than ONE YEAR from the date of delivery. Prices for extended engine and transmission warranties, five (5) year shall be included in the base bid.

The "company" obligations under the warranty is limited to repairing or replacing, as the company may elect, any part or parts of such completed Fire Apparatus which the company's examination discloses to be defective in design, material or workmanship. The replacement of the part shall include full labor, and costs associated with the diagnostics to determine which part is defective.

The company shall provide a list of authorized repair facilities and the capability of the bidder to provide on site repairs for the Chassis, Pump and Apparatus Body and associated systems and components and all related components with the shortest travel distance from Colchester, CT. It shall be the manufacturer's warranty responsibility that any warranty work be expeditiously completed, with priority given to placing this unit back in service within 36 hours. The manufacturer shall bear all costs of receiving necessary warranty replacement parts by overnight delivery. Components not part of this general warranty, which are covered by other warranty's the bidder shall act as the agent for the Town of Colchester in expediting warranty work for these components.

The warranty work shall be completed in the Town of Colchester facilities at the discretion of the manufacturer, however if in-house repairs cannot be made, the manufacturer shall bear the cost of transportation to and from the repair facility including any towing or flatbed transportation required.

The manufacturer shall provide all warranty work required from other warranted components when such components or systems have failed in causation directly or indirectly or sequentially by altering or damaged caused in construction, assembly or delivery of the completed unit.

This warranty may not apply to:

a) Major chassis components or trade accessories such as chassis, engines, tires, signaling devices or batteries that carry separate warranty by the original manufacturer of such components. It shall be the



Bidders responsibility to register these warranty certificates and supply copies of such at the time of delivery.

b) Normal adjustments and maintenance service including filters that require replacement before the warranty period expires.

c) Normal wearing parts that are destined for failure prior to the warranty expiration of one year and the Town of Colchester estimate of 10,000 miles 1st year accumulation shall be listed on the Bid sheet.

d). Failures from the three (3) CAFS Attack Engine/Pumpers being operated in a manner or for the purpose not recognized by the manufacturer, State and Federal motor vehicle laws.

e). Any component or system that has been altered, repaired in any way so as, in the Company's sole judgment, to have adversely affected the units stability or reliability.

f). Items subjected to misuse, negligence, accident, improper maintenance, or damage due to acid or chemical spills.

The manufacturer shall make no representation that the Fire apparatus has the capacity to perform any functions other than those contained in the Company's written literature, catalogs or specifications.

No person or affiliated company representative is authorized to give other warranties or to assume any other liability on behalf of the manufacturer in connection with the sale, servicing, or repair of any Fire apparatus manufactured by the Company.

The manufacturer shall have the right to make design changes or improvements in its product in the future, without imposing any obligation upon itself, other than required by law or other adjudication to change or improve the unit covered under these specifications.

The exterior paint and finish on the completed fire apparatus shall be warranted against blistering, peeling, or bubbling due to defects in manufacturing or improper preparation of a period of five **(5) years** from the date of delivery. This warranty does not cover defects if the vehicle is damaged, dented, scratched, or fading due to heat or chemicals from the exposure of hazardous material or fire.

The manufacturer shall warrant to the Town of Colchester that the Fire Body (including pump housing) structure (exclusive of paint, finish, hardware) is structurally sound and free of all structural defects of design, material and workmanship and further warrants that it will maintain such structural integrity for a period of **ten (10) years** from the date of manufacture, as designated on a manufacture's certification plate attached thereto.

The cab and body shall be warranted against rust-through or perforation, due to corrosion from within, for a period of ten (10) years. Perforation is defined as a condition in which an actual hole occurs in a sheet metal panel due to rust or corrosion from within. Surface rust or corrosion caused by chips or scratches in the paint are not covered by this warranty.

The water manufacturer shall warrant the water tank for the "Lifetime" of the fire apparatus. A copy of the warranty shall be supplied to define additional details of this warranty.

The Fire pump shall be warranted for a period of two (2) years. The warranty shall cover parts and labor for the warranted components. A copy of the fire pump warranty shall be supplied to define all details of the warranty provisions.

## **SUBMISSION OF WARRANTY FORMS**

The Bidder must submit their own printed manufacturer warranty forms in exact compliance to the above minimum standards, without exceptions. Failure to comply to warranty specifications will result in rejection of the bid. All warranties shall be submitted and certified by the manufacturer; warranties by sales representatives, manufacturer's representatives or other agencies shall not be acceptable.

Re-submission of these minimum bid form warranties is NOT acceptable. Bidders must submit their own warranties, on their printed literature forms, (no exceptions).

## **CHASSIS RECEIPT**

If the contract states that the chassis is to be paid after receipt, or constructed by the Bidder, the Bidder shall fully inspect the chassis for compliance with the specifications and that the construction of the chassis has been completed in a workmanlike manner.

The manufacturer shall have the chassis manufacturer arrange for changes to comply with the specifications and quality of work. These changes shall be made prior to the Pump and Fire body installation.

The manufacturer shall record the mileage upon delivery and complete an acceptance record, transmitting such documentation within 36 hours to the Town of Colchester. Prior to payment release for the chassis, if required, the Town of Colchester must have in its possession the original title.

## **MATERIALS**

Materials shall conform to the specifications listed herein. When not specifically listed, materials shall be of the best quality for the purpose of custom fire apparatus practice. All materials shall be of first quality free of all defects and imperfections that affect durability and serviceability of the finished product.

## **DESIGN**

Design of the Fire Apparatus shall be in accordance with the best engineering practices. Equipment layout and accessory installation shall permit ease of accessibility for use, maintenance, and service. All components and assemblies shall be free of hazardous protrusions, sharp edges, cracks or other elements, which might cause injury to personnel or equipment.

All oil, air, water, refrigerant, and electrical wiring shall be located in protective positions properly attached to the frame or body structure and shall have protective loom or grommets at each point where they pass through structural members, except where a through-frame or body connector is necessary. These connectors however shall be a quality to withstand the physical elements to which they are exposed.

The following is the design criteria for the development of the enclosed specifications:

## **OVERALL DESIGN AND ENGINEERING**

- A. The general description of this fire apparatus:
  - 1. Custom 4 door cab and chassis, diesel engine, automatic transmission, 2000 gpm pump with side mount controls, and direct inject foam system with 200 cfm CAFS, (2) engines with 750 gallon (1) with 1,000 gallon polyethylene water tank all with (2) Two integral 30 gallon foam tanks, Fire body with side compartments and roll up doors, 2000 pound hose load. A 2000 pound miscellaneous equipment load (generator not included), 1,800 lb cab load.
- B. Weight distribution analysis within 95% of axle components (wheel ground weights).
  - 1. Utilize "A" above for maximum weights.
  - 2. Include extended front bumper, front suction, and appliances and other front bumper mounted components.
  - 3. Cab area to include 250 lbs. per seated position plus 300 lb. of other distributed load within the cab area.
  - 4. Submit calculated data and utilize for front and rear axle, wheel and tire capacity selections.
- C. Vehicle size
  - 1. Provide overall length, (restriction 29' 6") width, height, and wheel base dimensions minimizing the shortest wheelbase and over length possible and utilizing the widest step possible from the rear cab doors and ample room for the pump operator.
  - 2. Provide steering maximum cramp angle and turning radius with a 5" front suction piping.

Cab, Pump house or module, Fire Body, Design including overall flexation of chassis mounted sub assemblies, Structural & finish materials.

Walls  
Ceiling  
Floor  
Doors  
Cabinets  
Cabinet Doors
- E. Finishes
  - 1. Ease of cleaning surfaces, handles, fixed components, switches
  - 2. Durability of finishes.
- F. Warranty
  - 1. Length
  - 2. Coverage
  - 3. Optional Cost / Coverage
- G. Driver Ergonomics
  - 1. Position of switches, gages, operational controls
- H. Corrosion Protection

#### I. Serviceability

1. Simplicity of electrical design and component utilization.
2. Ease of troubleshooting component failures.
3. Ease of repair/replacement of components (accessibility)
4. Ease of alterations (access to components and wire-ways)
5. Location of apparatus chassis, chassis component service centers, pump service centers.
6. Location of apparatus and chassis stocking distributors

#### J. Environmental Systems

1. Engineered HVAC (Heating, and Air Conditioning).
2. Engineered calculated electrical system with submitted data.

In addition to the aforementioned design requirements certain sections of the bid are performance related specifications. It shall be the bidder's responsibility to properly design, manufacture and test these assemblies in order to comply with the performance requirements. Chapter 4 NFPA 1901.

These performance requirements are:

#### 1. Weight distribution

The following maximum weight loading shall be utilized to calculate axle and wheel ground weight distributions.

These calculations shall be included in the Bid.

The calculated weights are:

Left Front \_\_\_\_\_

Right Front \_\_\_\_\_

Left Rear \_\_\_\_\_

Right Rear \_\_\_\_\_

During acceptance, the chassis will be weighed on certified scales with loading as above. If the actual axle weights come within 95% of axle certified carrying capacities shall be cause for non-acceptance and a redesign and construction by the bidder will be required in order to comply with this specification.

#### 2. Speed and acceleration.

A. Maximum speed 65 to 68 MPH

B. Minimum acceleration 0% Grade, 0MPH to 50 MPH in 30 seconds with load above, maximum lighting and Air Conditioning on High.

D. Minimum acceleration 6% grade. 0MPH to 35 MPH in 25 seconds, and still gaining speed with same conditions as "B" above.

### 3. Stopping Distance NFPA 4.17

A. Within 35 feet from 20 MPH, not including reaction distance (0% grade, Dry asphalt road surface). With out front end pull or brake fade, wheel lockup or skid, same operational conditions and load in "2.B" above.

B. Brake test. 10 MPH Panic Stop, all wheels lock.

### 4. Parking Brake

A. Parking brake set, transmission in drive and reverse, engine speed 1000 RPM, with No vehicle movement.

B. Parking brake set, transmission in neutral, 30% grade, no vehicle movement.

### 5. Electrical Design

A. The bidder shall supply a list of all 12 volt connected loads including the chassis with their rated current draw.

B. A 20% increase factor shall be applied to the total above.

C. The alternator drive train shall be engineered to withstand the maximum load plus service factors in the "extreme duty" category. Alternator drive bearing design lateral forces shall not be exceeded.

### 6. HVAC Design

A. Bidder shall engineer the Air Conditioning System to withstand the following requirements:

1. Chassis manufacturer supplied Air Conditioning System shall have the capacity to cool the cab of the apparatus to a temperature of 75 degrees F., 50% RH with 95 degree F. and 80%RH Exterior temperature.

## **ENGINEERING SKETCHES**

The evaluation of the bids shall be based on many factors: Three of which shall be design, engineering reliability, and completeness of the sketches. No bidders proposal shall be considered unless complete engineering sketches are submitted with the Bid package. Failure to submit manufacturer's prepared sketches with the Bid will result in automatic rejection.

The submission of these engineering sketches is in addition to scaled drawing for the submission for construction purposes. The engineering sketches will allow the Town of Colchester the ability to fully evaluate the Bidders proposal, design engineering, and sketch quality in comparison to other bidders and to the Town of Colchester's specifications.

Sketches shall provide the following views.

Left side exterior  
Right side exterior  
Front exterior  
Rear exterior  
Top View  
Interior Cab Floor Plan

**Submission of "similar to" or other caveats or statements referring to "later submission of sketches after award of contract" will be cause to reject the bid.**

## **STRUCTURE AND COMPONENT EVALUATION**

To assist the Town of Colchester in evaluating the chassis cab, Pump housing and fire body construction including structural components, it would be helpful to provide photographs and or sketches of weldment structures with component sizes including thicknesses and sheet metal thicknesses walls, floors, overhead, door skins etc.

## **ACCESSIBILITY**

Parts and components should be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure. Whenever functional layout of operating components determines that physical or visual interference between items cannot be avoided, the item predicted to require the most maintenance shall be located for best accessibility.

Cover plates, which must be removed for component adjustment or part removal should be equipped with quick disconnection fastening or hinged panels.

Drains, filler plugs, grease fittings, bleeders and other check points for all components should be located so that they are readily accessible and do not require special tools for proper servicing. Design practices should minimize the number of tools required for maintenance.

All components shall be designed and protected so that heavy or other adverse weather conditions will not interfere with normal servicing or operation.

## **ELECTRICAL SCHEMATICS**

The efficient maintenance and service of this fire apparatus is of prime importance to the Town of Colchester. To properly maintain the vehicle electrical system, the fire apparatus must be constructed with the finest in electrical materials, components and workmanship.

To maintain the vehicles electrical system, the Town of Colchester must be provided with instructional manuals and complete electrical information and schematics. The electrical information shall be provided as follows:

12 and 120 volt wiring systems:

1. Graphic symbols for electric diagrams.
2. Terminal panel locations.
3. Wire colors and index.
4. Wire labeling, imprinting codes and index.
5. Parts list noting manufacturer and model numbers of components.
6. Master as built working drawing for electrical wiring systems.
7. Individual 8.5" X 11" computer drawn electrical schematics for each body electrical circuit, including chassis added components and controls, noting circuit number, wire size, switches, circuit breaker, terminals for that particular circuit and component.
8. A sample of the 8.5" x 11" electrical schematic must be submitted with the Bid.

## GENERAL CONSTRUCTION

The fire apparatus shall be constructed with due consideration to the nature and distribution of the load to be sustained, and to the general characteristics of the service performed.

1. All dimensions are subject to plus or minus 1/8" tolerance, in plane, trueness, alignment, or squareness. The loaded chassis as described in OVERALL DESIGN AND ENGINEERING section A.1, The general description of this fire apparatus, shall not be out of lateral level (side to side) as measured from the bottom of the chassis frame at the front and rear axle by more than 1/4".

The following specifications describe minimum requirements for proposed fire apparatus as designed for continuous reliable service.

The materials specifications are considered absolute minimum. Exceptions will not be accepted or permitted since all raw materials of the specified type are available to all manufactures. Since all custom manufacturers have the ability to shear, break, and weld as these specifications require, all basic design requirements shall be complied with.

## INSTRUCTIONAL MANUALS

**The manufacturer shall provide with the vehicle upon delivery, three (3) sets of complete delivery manuals. The manuals shall be in a three-ring notebook type binder(s), with reference tabs for each section of the vehicle. Within each section shall be:**

1. Individual component manufacturer instructions and parts manuals.
2. Warranty forms for the Chassis cab, and Fire Body.
3. Warranty forms for all major components (1 original, 2 copies).
4. Warranty instructions and format to be used in compliance to warranty obligations.
5. Wiring diagrams.
6. Working drawings of final body and compartment fabrication.
7. Necessary normal routine service forms, publications, components of module.
8. Technical publications on training and instructions for major body components.
9. Warning notices and safety related section for personnel protection.
10. ***Complete sets*** of chassis repair and parts manuals as configured.
11. All items as listed in the **COMPLIANCE AND CERTIFICATIONS** section, items 1 through 28.



## **DELIVERY**

Delivery from the manufacturer's final assembly location shall log the chassis mileage. Delivery shall be direct and continuous from the factory, no stops or detours or delays for demonstration purposes, sales promotions, etc. Chassis manufacturer dealer service must be completed in Connecticut if the odometer reading is in excess of 500 miles prior to delivery to the Town of Colchester.

The completed apparatus shall be delivered to the Town of Colchester with full written instructions provided to fire department personnel on operation, care, and maintenance of the apparatus, including warranties, and titles.

Delivery of the apparatus shall be by a factory trained delivery engineer, employed by the manufacturer (no exceptions). Transportation shall be by driving the completed fire apparatus from the factory's final assembly plant to Colchester, CT. Transportation by other means such as rail or truck flat bed or towing is not acceptable. The factory trained delivery engineer shall observe all chassis manufacturer break-in requirements.

Town of Colchester personnel shall be properly instructed as to the proper use of the entire apparatus including, but not limited to, chassis, fire pump system, the apparatus, and all equipment. Training shall be made by a factory-trained specialist who shall be responsible for complete instruction as to operation and maintenance of the chassis, and the completed vehicle.

The training specialist shall remain at the Town of Colchester for two (2) days (not less than eight (8) hours) each day, to provide thorough training of all personnel, or as instructed by Chief of the Department. One day of training shall be conducted on a Saturday. All meals, motel, and travel costs shall be the responsibility of the successful bidder.

Transportation shall be considered to include, but not limited to:

- A. Transportation of the Fire Apparatus to the Town of Colchester.
- B. Conducting day and or evening classes for instruction of fire department personnel and drivers in proper operation and maintenance.

The delivery engineer shall set delivery and instruction schedule with the Chief of the Department, or a person so designated to schedule day and or evening classes. Advance notice of at least one (1) week must be given advising the specific day on which the fire apparatus will arrive.

## **ACCEPTANCE**

Before acceptance of the fire apparatus to be furnished in this bid, the Town of Colchester shall have the right to inspect and test the fire apparatus and associated equipment to ascertain that all requirements of these specifications have been fully complied with and that all equipment is proper and complete within every respect and in perfect working order.

Testing shall include all performance specifications listed.

Acceptance time allowance shall be 72 hours, provided that no defects, adjustments, corrections or replacements are needed. In the event of acceptance / rejection by the Town of Colchester for any equipment, systems, accessories furnished under the contract, the Bidder shall, at its own expense, make such repairs or replacements the Town of Colchester considers necessary to conform to any clause of these specifications within 10 calendar days after notice is given to the manufacturer or its sales agent. Permission to keep or store the equipment in any building owned or operated by the Colchester Fire Department or other town owned facility during the above-specified time shall not constitute acceptance of same.

## **FORM OF THE BID**

**Failure to comply with all conditions mentioned under "Instructions to Bidders", or the failure to conform to the specifications, will be reasonable cause for the rejection of any Bid. Bid must be submitted on the attached "Town of Colchester, 2021 Fire Apparatus Bid Form". No Exceptions.**

Any Bid not in accordance with the "Instruction to Bidders" or containing bids not asked for, or not containing all statements contained on the said Bid form, shall be rejected.

Bids shall be enclosed in a sealed envelope marked on the out side of the envelope "Bid for the Town of Colchester CAFS Attack Engine/Pumpers". Pursuant to the specifications provided, the name of the bidder noted thereon, and shall be delivered at the time and place stated in the "Invitation of Bidders".

## **EXCEPTIONS, VARIATIONS OR CLARIFICATIONS**

These specifications are based upon design and performance criteria, which have been developed by the Town of Colchester as a result of extensive research and careful analysis of available data. Subsequently, these specifications reflect the only type of CAFS Attack Engine/Pumpers that is acceptable at this time. Therefore, major exceptions to these specifications will not be accepted. Certain exceptions may be accepted if they are minor, equal or superior to that which is specified.

All Bidders are required to submit these specifications in their proposal, noting items where the Bidders proposal differs. Consecutively number each exception, variation or clarification on attached sheet(s) to the Bid utilizing the line numbers in the left hand margin of this bid specification for reference.

For purposes of this Bid the term EXCEPTION means; A complete difference to the Town of Colchester specifications.

**VARIATION** means; a slight alteration of the Town of Colchester specifications,

**CLARIFICATION** means; to narrate the reasons the Bidder takes exception or variation to the Town of Colchester specifications and why their proposal equals or exceeds the Town of Colchester specifications.

Provide attached sheet(s) to reference the Bidders proposal when these specifications require information concerning materials, design, means and methods or other information.

Brand name or model number has specified some items. These have been carefully selected because of their reliability and availability for replacement locally. In order to be most responsive, items named, or an item "equal to" the particular item specified by brand name or model, should be contained in the bid proposal. It is the bidder's responsibility to prove to the Town of Colchester that an item bid as "equal to" a particular specified item, is truly of equal quality, design, and function as the specified item. The Town of Colchester maintains the right to make a final decision as to the acceptability of an item bid as "equal to" a particular specified item.

The Town of Colchester assumes that silence to any exception indicates that the paragraph, sentence, line, or item will fully comply with these specifications as determined by the Town of Colchester regardless of cost to the Bidder. Should the item not comply, when delivered, and the exception is not indicated, in the Bid, or is silent in the executed contract then the item shall be rejected. All items shall be given a general inspection for material, workmanship, and compliance with these specifications prior to acceptance.

Should the item not comply, and an exception was not taken, the Bidder shall be held responsible to fulfill that specification.

#### **WITHDRAWAL OF BIDS**

**Bids may be withdrawn by certified mail or telegraphic request from the Bidder prior to the time and date of the bid opening. Negligence on the part of the Bidder in preparing the bids confers no right for the withdrawal of the Bid after it has been opened. No bidder may withdrawal his Bid after the time and date set for the opening thereof.**

## BIDS

All Bids must be signed by the manufacturer or authorized sales representative of the manufacturer for the CAFS Attack Engine/Pumpers being Bid.

Each Bid must provide the full business name, address and telephone of the Bidder. Bids by a partnership must furnish the full name of all the partners and must be cosigned by each partner. Bids by a corporation, must be accompanied by the name of the state of incorporation and by the signature and designation of the President, Vice president, or Secretary. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixed to his/her signature the word "President", "Vice President", or, "Secretary", may be held to the Bid of the individual signing. Therefore satisfactory evidence of the authority of the officer signing the Bid in behalf of the corporation shall accompany the Bid. All signatures shall be notarized.

## EVALUATION OF BIDS

The Town of Colchester utilizing the specification design will evaluate bids received.

The Town of Colchester prior to the award of contract will require a statement of financial condition of the company and / or Dun and Bradstreet rating. Financial condition of the Bidder will be seriously considered during the bid evaluation, therefore the Bidder should submit statement(s) of financial condition.

The Bidder shall disclose any current or pending litigation regarding product liability claims, claims of failure to deliver, or claims of failure to comply with specified components or systems on completed fire apparatus.

**No right shall accrue to any person submitting a bid until such bids have been accepted and contract awarded in writing by the duly authorized representative of the Colchester Board Selectmen. The Colchester Board of Selectmen reserves the right to reject any and all bids and to accept the lowest responsible qualified bidder, in accordance with the Town of Colchester purchasing policy and be in the best interest of the Town of Colchester.**

The unit will be designed to conform fully to the "Automotive Fire Apparatus" requirements as stated in the NFPA 1901 Standard (2016 Revision) which will include but not limited to the following required chapters as stated in this revision:

Chapter 1 Administration	Chapter 14 Driving and Crew Areas
Chapter 2 Referenced Publications	Chapter 15 Body, Compartments and Equipment Mounting
Chapter 3 Definitions	Chapter 16 Fire Pump and Associated Equipment
Chapter 4 General Requirements	Chapter 18 Water Tanks
Chapter 10 Special Service Fire Apparatus	Chapter 19 Aerial Devices
Chapter 6 Initial Attack Apparatus	
Chapter 12 Chassis and Vehicle Components	
Chapter 13 Low Voltage Electrical Systems and Warning Systems	