## SALES AGREEMENT

THIS SALES AGREEMENT (this "Agreement") is made this 1st day of January, 2021 ("Effective Date"), by and between Boise Mobile Equipment, Inc., an Idaho corporation ("BME"), and Town of Castle Rock, a Government Entity ("Purchaser"). BME and Purchaser may collectively be referred to herein as the "Parties" and may individually be referred to herein as a "Party".

#### **RECITALS**

- A. BME manufacturers fire trucks and other emergency vehicles and equipment; and
- B. BME and Purchaser wish BME to manufacture and sell to Purchaser 2 (two)- Type 6 Fire Apparatus built on a Ford F550 chassis ("Fire Apparatus") in accordance with the plans and specifications provided by Town of Castle Rock Fire & Rescue Department and attached hereto as Exhibit A, which are made a part hereof ("Plans and Specs").

NOW THEREFORE, in consideration of the terms, covenants and conditions set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

# SECTION 1 MANUFACTURE AND SALE

BME hereby agrees to manufacture and sell the Fire Apparatus to Purchaser substantially in accordance with the Plans and Specs (subject to any revisions thereto agreed upon by the Parties), and Purchaser agrees to purchase the same. In the event the Plans and Specs include plans and/or specifications from both BME and Purchaser, and a conflict arises, BME's plans and/or specifications shall control.

# SECTION 2 PRE-CONSTRUCTION MEETING AND COMPLETION PERIOD

Within 30 days from the Effective Date, the Parties must complete a pre-construction meeting at BME's place of business. At this meeting, any changes to the Plans and Specs shall be finalized. In the event of any changes to the Plans and Specs at this pre-construction meeting (or at any other time), the Parties shall enter into a Change Order substantially in the form attached hereto as Exhibit B, which is made a part hereof. Change Orders shall detail changes to the Plans and Specs, Purchase Price and/or completion date. Within a commercially reasonable time from the completion of the pre-construction meeting, BME shall order the chassis from its manufacturer.

BME shall use commercially reasonable efforts to complete the Fire Apparatus by end of year 2021. This completion date is not a date certain and BME shall not be in default of this Agreement if the Fire Apparatus is not completed by end of year 2021. However, if BME is not moving forward in production in a timely manner, then Purchaser must give written notice to BME. BME shall have 30 days to address and resolve the matter at hand. If acceptable course correction is not made, then Purchaser retains the right to terminate the contract.

# SECTION 3 INSPECTION AND DELIVERY

BME shall notify Purchaser in writing upon the completion of the Fire Apparatus. Purchaser shall complete final inspection of the Fire Apparatus at BME's place of business within a reasonable amount of time after completion but not to exceed 30 days ("Inspection Period"). Unless otherwise specified in the Plans and

Specs, any costs and/or expenses incurred by Purchaser in conducting this inspection, including, without limitation, travel costs and expenses, shall be the sole responsibility of Purchaser. BME shall fully explain and demonstrate to Purchaser the proper method of operating the Fire Apparatus during this inspection.

Upon completion of this inspection, the Parties shall sign a Final Inspection Report substantially in the form attached hereto as Exhibit C, which is made a part hereof. In the event the Final Inspection Report lists items to be corrected by BME, these items shall be corrected by BME as soon as reasonably practicable. Once corrected, the Fire Apparatus shall be delivered to Purchaser pursuant to the delivery terms contained in the Plans and Specs. Upon delivery of the Fire Apparatus: 1) Purchaser shall again sign the Final Inspection Report acknowledging that the correction items listed in the Final Inspection Report have been corrected to Purchaser's satisfaction, 2) Purchaser shall execute a Fire Apparatus Receipt and Acceptance substantially in the form attached hereto as Exhibit D, which is made a part hereof and 3) BME shall deliver one copy of BME's current, applicable Owner's Manual to Purchaser. The date upon which Purchaser signs the Final Inspection Report acknowledging that the items are completed to its satisfaction shall be the "Acceptance Date".

In the event Purchaser does not complete the Fire Apparatus inspection within the Inspection Period, it shall be deemed that the Fire Apparatus is acceptable to Purchaser in all respects and the last day of the Inspection Period shall be deemed the "Acceptance Date".

# SECTION 4 PURCHASE PRICE AND PAYMENT TERMS

The total Purchase Price to be paid by Purchaser to BME for the Fire Apparatus is \$432000, Four Hundred and Thirty-two thousand dollars and no/100 ("Purchase Price"), this is for 2 (two) apparatus priced at \$216,000 each. Unless otherwise specified in the Plans and Specs, the Purchase Price does not include sales taxes or delivery charges. Delivery charges shall be the responsibility of Purchaser and shall be paid to BME at the same time the Purchase Price is paid to BME. Sales taxes shall also be the responsibility of Purchaser but shall be paid to BME only if it is BME's responsibility to collect the same and remit them to the appropriate governmental agency. In such event, sales taxes shall be paid to BME at the same time the Purchase Price is paid to BME. If the Fire Apparatus is exempt from sales taxes, it is Purchaser's duty to furnish to BME proper proof thereof.

The Purchase Price shall be due from Purchaser to BME in cash within 15 days (Thirty (30) days if left blank) following the applicable Acceptance Date ("Due Date"). In the event the Purchase Price is not paid in full by the Due Date, it shall be a default hereunder and, in addition to all BME's remedies for such default, interest shall begin to accrue on any unpaid balance of the Purchase Price at the rate of eighteen percent (18%) per annum beginning on the Due Date.

# SECTION 5 WARRANTIES

All warranties associated with the Fire Apparatus are detailed in the Plans and Specs. There are no other warranties (either express or implied), representations or understandings other than those expressly contained in the Plans and Specs. All warranty periods commence on the Acceptance Date. Notice of claimed warranty work must be provided to BME by Purchaser within the applicable warranty period. All warranty work will be performed at BME's place of business.

## Any modifications by Purchaser to the Fire Apparatus voids all warranties.

Notwithstanding any of the foregoing and subject to applicable law: 1) Any implied warranty of merchantability or fitness for a particular purpose associated with the Fire Apparatus shall be limited in duration to the earlier of one (1) year or the period in which owned by Purchaser; and 2) BME shall not be

# liable for any incidental or consequential damages associated with the Fire Apparatus.

# SECTION 6 ASSIGNMENT

Neither Purchaser nor BME may assign this Agreement, or any portion thereof, without the express written consent of the other.

# SECTION 7 NOTICES

All notices or other communications given with respect to the subject matter of this Agreement shall be in writing, and shall be served on the parties addressed as follows:

If to BME: Boise Mobile Equipment, Inc.

If to Purchaser:

Attn: Chad Moffat

5656 W. Morris Hill Road

Boise, Idaho 83706
(E) chad@bmefire.com

Town of Castle Rock Fire & Rescue Department James Gile 300 Perry Street

Castle Rock, CO 80104
(E) jgile@crggov.com

Any such notices shall be either (a) sent by certified mail, return receipt requested, in which case notice shall be deemed delivered three (3) business days after deposit, postage prepaid in the U.S. Mail, (b) sent by overnight delivery using a nationally recognized overnight courier, in which case it shall be deemed delivered one (1) business day after deposit with such courier, (c) sent by personal delivery, in which case notice shall be deemed delivered upon delivery or (d) sent by e-mail, in which case it shall be deemed delivered on the e-mail date, assuming proof of delivery is obtained. The above addresses may be changed by written notice to the other Party; provided, however, that no notice of a change of address shall be effective until actual receipt of such notice.

# SECTION 8 DEFAULT

Failure by either Party in performing any term, covenant or condition of this Agreement shall constitute a default hereunder.

# SECTION 9 REMEDIES

In the event of a default of this agreement by either party, the non-defaulting party shall provide written notice within 10 days of its discovery of any such default. Defaulting party shall have 15 days to cure the breach from date of notice.

# SECTION 10 CONFIDENTIALITY

Purchaser agrees that any and all BME information not already lawfully available to the public, including, without limitation, any information relating to BME and/or the Fire Apparatus, including all Plans and Specs, (whether now in existence or created subsequent to the Effective Date), including, without limitation, any process, method, design, procedure, engineering, technique, invention, merchandising, marketing, cost, or management information, without regard to the method or manner in which such information is kept or stored by BME, which Purchaser may in any way acquire by reason of this Agreement and the rights granted pursuant hereto, is SECRET and CONFIDENTIAL, and is the proprietary information of BME and shall not be improperly released by Purchaser to any person or entity other than those owners, agents and/or employees of Purchaser who are engaged in this transaction and/or will use the Fire Apparatus. Finally, said information is hereby designated as "Trade secret" as defined by Idaho Code, Section 48-801(5) and is subject to the enforcement mechanisms (including without limitation injunctive relief) set forth in the "Idaho Trade Secrets Act".

This Section shall survive the termination of this Agreement for whatever reason.

# SECTION 11 MISCELLANEOUS

It is agreed that this Agreement shall be governed by, construed, and enforced in accordance with the laws of the State of Idaho. The Parties agree that any litigation related to the performance of this Agreement shall be heard by the courts located in Ada County, Idaho, and the Parties agree to submit to the jurisdiction and venue of such courts. This Agreement shall bind and inure to the benefit of the respective permitted successors and assigns of the Parties. This Agreement shall constitute the entire agreement between the Parties and any prior understandings or representations of any kind preceding the date of this Agreement shall not be binding upon the Parties. Any modification, amendment and/or waiver of this Agreement, or any portion thereof, shall be binding only if evidenced in writing, signed by the Parties. The Parties hereto agree to execute any further agreements and documents, and/or perform any other acts, reasonably necessary to effectuate the terms and intent of this Agreement. Each and every recital above is incorporated herein by this reference. Each individual executing this Agreement on behalf of an entity, hereby represents and warrants that his/her entity has duly and properly authorized the execution of this Agreement by such individual and that this Agreement is enforceable against his/her entity in accordance with its terms. The Parties have either (i) been represented by separate legal counsel, or (ii) have had the opportunity to be so represented. Thus, in all cases, the language herein shall be construed simply and in accordance with its fair meaning and not strictly for or against a Party, regardless of which Party prepared or caused the preparation of this Agreement. This Agreement shall survive the transfer of the Fire Apparatus from BME to Purchaser.

In the event it shall become necessary for either Party to this Agreement to retain legal counsel to enforce any term, condition, or covenant of this Agreement, the prevailing Party shall be entitled to recover its reasonable attorneys' fees and costs of suit, including any attorney fees and costs incurred in any bankruptcy or appellate proceeding.

If any term, condition or covenant of this Agreement shall be held invalid or unenforceable to any extent, the remaining terms, conditions, and covenants of this Agreement shall not be affected thereby and each of said terms, covenants, and conditions shall be valid and enforceable to the fullest extent permitted by law.

[End of Text]

Date.  BME:  Boise Mobile Equipment, Inc., an Idaho corporation  By: Name: Chad Moffat Title: President	ctive
Boise Mobile Equipment, Inc., an Idaho corporation  By: Name: Chad Moffat	
By: Name: Chad Moffat	
Name: Chad Moffat	
ATTEST: TOWN OF CASTLE ROCK	
Lisa Anderson, Town Clerk  David L. Corliss, Town Manager	
Approved as to form: Approved as to content:	

Norris W. Croom, Fire Chief

Michael J. Hyman, Town Attorney

# Exhibit A

# Fire Apparatus Plans and Specifications

See attached.

# **CASTLE ROCK, CO**

# FORD F550 CHASSIS TYPE 6 WILDLAND VEHICLE SPECIFICATIONS

**September 15, 2020** 

# BODY AND STRUCTURAL WARRANTY

Boise Mobile Equipment will warrant each new apparatus body, if used in a normal and reasonable manner, against structural defects caused by defects in material, design or workmanship for a period of ten (10) years, covering parts & labor to the original purchaser which will start on day of acceptance.

This warranty will not apply to:

- Normal maintenance services or adjustments
- To any vehicle which will have been repaired or altered outside of our factory in any way so as, in the judgment of BME, to affect it's stability, nor which has been subject to misuse, negligence, or accident, nor to any vehicle made by us which will have been operated to a speed exceeding the factory rated speed, or loaded beyond the factory rated load capacity.
- Commercial chassis and associated equipment furnished with chassis, signaling devices, generators, batteries, or other trade accessories as they are usually warranted separately by their respective manufacturers.
- Shipping costs of parts or apparatus for purposes of repair or replacement of parts. This warranty is in lieu of all other warranties, expressed or implied. All other representations as to the original purchaser and all other obligations or liabilities, including for incidental or consequential damage on the company's behalf unless made in writing by the company.

# WATERAX FIRE PUMP WARRANTY

A one (1) year warranty on the Waterax BB-4-D902 fire pump will be provided. The provisions of this warranty will be described in the completed apparatus documentation.

# PLUMBING WARRANTY

The stainless steel fire pump plumbing will carry a ten (10) year parts and labor warranty against defects in workmanship and perforation corrosion.

# AKRON VALVE WARRANTY

The Akron valves will carry a ten (10) year parts and labor manufacturer's warranty. Provisions of this warranty will be provided with the completed apparatus documentation.

# WATER TANK WARRANTY

Castle Rock Fire Department

The polypropylene water tank that is specified to be supplied with this apparatus will be warranted by the water tank manufacturer for a "lifetime" period from the date that the apparatus is put into service. The tank manufacturer will repair, at no cost to the purchaser, any problems caused by defective materials and/or workmanship. The warranty will cover the reasonable costs of removing the water tank from the apparatus and reinstalling it after the completion of the covered warranty repairs, but will not cover any liability for the loss of service or downtime costs of the apparatus.

# **PAINT WARRANTY**

Boise Mobile Equipment, Inc will provide a seven (7) year paint warranty which will cover peeling and/or de-lamination of the top coat and other layers of paint, cracking or checking, loss of gloss caused by cracking, checking or chalking, and any paint failure caused by defective paint materials covered by the paint manufacturer's material warranty.

FORD CHASSIS SPECIFICATIONS -- DIESEL ENGINE

# **CHASSIS SPECIFICATIONS**

One (1) 2021 FORD F550, 4 x 4, dual rear wheels (DRW), Four (4) door XLT super crew cab and chassis

GVWR: 19,500 pounds

Wheelbase: 179"

Cab to Axle: 60"

4X4: Electronic -Shift-On-the-Fly (ESOF)

Bumper and Grille: chrome plated

Tow Hooks: front

Driving Front Axle and Suspension: Extra Heavy-Service front suspension, 4.88:1 ratio

Transfer Case: manually controlled in cab, high and low range

Tires: two (2) 225-70Rx19.5G BSW Max Traction

Front Wheels: two (2) steel disc wheels, painted both sides to match package

# Castle Rock Fire Department

Rear Axle and Suspension: wide track rear axle, extra HD suspension package, stabilizer bar, differential locker

Tires: four (4) 225-70Rx19.5G BSW Max Traction

Rear Wheels: four (4) steel disc wheels, painted both sides to match package

Spare tire: (1) 225-70Rx19.5G BSW Max Traction

Spare wheel: (1) steel disc, painted both sides to match package

Braking System: four (4) wheel disc brake system with an Anti Lock (ABS)

Engine: 6.7L, 4V OHV Power Stroke V8 Turbo Diesel, B20

Engine Block Heater: 120-volt coolant heater, with exterior mounted straight blade receptacle

Cooling System: a coolant mixture protected to -30 degrees Fahrenheit

Exhaust System: horizontally mounted, discharge on right side aft of wheels

Regeneration: Operator Commanded Regeneration with Inhibit

Fuel Tanks: Dual tanks. 28 gallon side mount; 40 gallon rear mounted, left side filler extension

Transmission: TorqShift 6-speed automatic

Steering: power steering system

Batteries: two (2) heavy-duty 12-volt batteries

Alternator: Dual, (Total 357-Amps)

Fire / Rescue Prep Package W/EPA Special Emissions (LPO)

Cab Construction: XL Series super crew cab four (4) door steel construction, sun visors(2), tinted glass, roof clearance lights, grab handles interior

Mirrors: manually extended trailer type (2), heated

Cab Paint: single color, Race Red

Air bags front and air bags curtains side

## Castle Rock Fire Department

Climate Controls: controls for heat and air conditioning

Window and Door Controls: Power window and door lock controls

Cab Instruments: standard type, cruise control, (4) upfitter switches, auxiliary power plug

Printed Manuals: one (1) printed chassis operation manual

Cab Accessories: AM/FM/CD radio, two radio speakers and antenna

# CAB SEATING AND WEIGHT ALLOWANCE

A warning label will be installed in the cab to indicate seating positions for four (4) people. A weight allowance of 250 pounds will be calculated for each person.

# **DATA PLAQUE**

A data plaque will be provided and installed on the inside of driver's door. The data plaque will contain the required information based on the applicable components for the apparatus:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump, generator, or other component lubrications
- Other NFPA applicable fluid levels or data as required
- Paint manufacturer, type, and color number
- Tire Speed Ratings

Location will be in the driver's compartment or on driver's door.

# **DIMENSION DATA LABEL**

The cab dash area will have an apparatus dimension label installed. The label will be highly visible, indicating the overall height, length, width and weight of the vehicle.

# WARNING LABEL -- NO RIDING ON REAR

A warning label stating: "NO RIDING ON REAR OF APPARATUS" will be installed on rear of the apparatus. The label will be applied to the vehicle at the rear step area. The label will warn personnel that riding in or on these areas, while the vehicle is in motion, are prohibited.

# WARNING LABEL -- SEAT BELT USEAGE

A warning label, stating: "DANGER- Personnel Must Be Seated And Seat Belts Must Be Fastened While Vehicle Is In Motion Or DEATH OR SERIOUS INJURY MAY RESULT" will be provided in the apparatus cab interior. This label will be located so that it is visible from all seating positions.

# VEHICLE FINAL STAGE MANUFACTURER LABEL

A final stage manufacturer label will be installed by the fire apparatus body manufacturer in compliance with applicable motor vehicle standards.

# **MANUFACTURER LOGO**

The apparatus will include a Boise Mobile Equipment logo plaque which will be affixed at the rear of the apparatus.

# **FRONT TOWING PROVISIONS**

Two (2) front towing provisions will be installed in the bumper.

# NEDERMAN EXHAUST EXTRACTION

The exhaust outlet will be configured to allow connection of the in station Nederman exhaust extraction system.

# **REAR MUD FLAPS**

The apparatus will have black mud flaps installed behind the rear wheels that will meet the current D.O.T. requirements.

# **CAB DOOR REFLECTIVE PANELS**

The cab doors will include white reflective trim installed inside each door. This trim will be approximately 5" in height and as long as the door is wide.

# AIR FILTER EMBER PROTECTION SCREEN AND WARNING LABEL

An ember protection screen and warning label, stating: "This apparatus is equipped with an air filter ember protection screen; routine inspection is required," will be provided and installed in the apparatus cab interior. This label will be located so that it is visible from the driver's seating position.

# AIR FILTER EMBER PROTECTION SCREEN WARNING LABEL

A warning label, stating: "This apparatus is equipped with an air filter ember protection screen; routine inspection is required," will be provided and installed in the apparatus cab interior.

# EMBER SEPARATOR -- FRESH AIR INTAKE TO CAB

The cabin air filter will be protected by an ember guard with a maximum mesh opening of 0.039 inches.

# EMBER SEPARATOR WARNING LABEL

A final stage manufacturer will install an applicable warning label for cleaning the NFPA required ember separator screen.

# **EMBER SEPARATOR**

The final stage manufacturer will install an ember separator within the fire pump engine air intake system.

# TRANSFER CASE SKID PLATE

The final stage manufacturer will install a removable heavy duty steel skid plate assembly to protect the transfer case.

# RADIATOR SKID PLATE

The final stage manufacturer will install a removable heavy duty steel skid plate assembly to protect the radiator.

# **DIESEL EMISSIONS FLUID (DEF) TANK SKID PLATE**

The final stage manufacturer will install a removable heavy duty steel skid plate assembly to protect the diesel emissions fluid (DEF) tank.

#### **AUXILLIARY REAR SPRING - SUPER SPRING**

Super Springs model (PSP-7?) spring package will be provided and installed to the rear spring assembly to reduce rear spring defection and improve leveling of finished appqaratus.

# WATERAX BB-4-D902V PUMP

The pump/engine shall perform to the standards of ISO 9 and NFPA 1906 medium pressure rating of 50 GPM. Typical pump performance from 5 foot draft under standard NFPA conditions shall be 65 GPM @ 350 PSI, 95 GPM @ 250 PSI, 105 GPM @ 150 PSI, and 105 GPM @ 100 PSI.

The pump shall provide a maximum pressure of 400 PSI and a maximum flow of 100 GPM. It shall be capable of operating to a maximum pressure of 600 PSI and be capable of passing a hydrostatic test of 550 PSI for 10 minutes per NFPA 1906 specifications.

The pump intake shall be a 2" Male NPSH hose thread and be an integral part of the pump intake cover. The pump discharge shall be a 1-1/2" Male NPSH hose thread and be an integral part of the pump body. The pump intake and discharge shall be in locations where applicable hose thread adapters can be installed without interference.

The pump shall be a 4-stage centrifugal pump with the pump body, diffusers, and impellers made of an anodized corrosive resistance aluminum. The impeller must be aluminum to match the pump body and diffusers in order to prevent galvanic corrosion from taking place between pump components.

The impellers shall be 3.67 inches in diameter.

The pump shaft shall be stainless steel supported by two maintenance free bearings and shall not be co-linear to the engine's drive shaft. A sealed roller bearing shall be located externally from the pump and a sintered bronze bushing shall be located within the pump cover. In addition, the pump seal shall be a mechanical rotary seal, shall be externally pressurized and shall incorporate a blisterresistant carbon seal face, silicon carbide seat, and fully integrated drive bushing.

A 1-1/2 NPSH priming port shall be located on the top side of the pump near the intake cover. The pump shall be coupled to a horizontal belt driven speed increaser with a quick release clamp capable of being removed by hand and without any additional tools. The quick release clamp system shall allow for the entire pump assembly, pump body with all its internal and external components, to be removable and capable of being service at a location away from the gasoline engine and fire apparatus upon which it was part of. It shall also allow for the swapping out of the same or different performance pump assemblies within a minute's time.

The belt driven speed increaser shall be a low maintenance timing belt and pulley system. The belt shall be a high quality timing belt and the drive pulley shall mount directly on the engine drive shaft through a means of a keyed tapered locking device. The increaser shall be a 1 to 1.88 ratio. In addition, a dampening device shall be provided between the pump shaft and pump shaft pulley.

Both the pump and speed increaser shall be painted red.

The engine shall be a 4 cycle Kubota horizontal drive water cooled diesel engine. The engine rating shall be 24.8 HP and shall meet current EPA and CARB emission standards.

The electrical system of the engine shall be 12 VDC. It shall have an electric starting system. It shall also have a 25 amp regulating alternator and be pre-wired with a 3 feet engine harness to allow it to connect to a mating control harness via an 8-pin industrial sealed quick-connect connector

The engine muffler system shall be a single vertical side mounted muffler. The muffler system shall be equipped with a forestry approved spark arrestor.

# WATERAX 12 VOLT ELECTRIC PUMP PRIMER

The electric primer shall be a 12 VDC piston type vacuum pump with 3/8 female NPT intake and discharge ports. The body of the electric primer shall be a corrosive resistant aluminum with bronze sleeves and a composite piston. It shall pull a maximum current of 105 amps and have a vacuum of 22 in-Hg. The electric primer shall weigh 8.1 pounds.

# PUMP PERFORMANCE TEST AND CERTIFICATION

Upon completion, the apparatus will undergo a complete pumping test that conforms to the requirements of NFPA Standard 1906 (latest edition) for the size and type of pump provided. The test will consist of a continuous one-half hour test pumping at rated capacity and rated net pump pressure, a vacuum test of the primer system and plumbing, a tank discharge flow test and a pressure test of the apparatus piping.

The chassis engine and transmission, the pump and other components of the apparatus will show no undue heating, leaks, or other defect. The results of the test will be documented to establish the performance of the apparatus and to further insure that the unit will perform satisfactorily when placed into service. The test results will be certified in writing, with the certification provided to the purchaser for their records at the time of delivery of the completed apparatus.

# TRUCK IDENTIFICATION PLATE

A durable truck identification plate, fabricated from corrosion resistant metal, will be provided and installed on the pump operator's panel. The plate will state the name and address of the apparatus manufacturer, the serial number of the unit and the pump performance test results.

# **MASTER PUMP DRAIN**

One (1) Trident, multiple-port drain valve, fabricated from bronze, will be provided and controlled at the pump operator's control panel. The valve will be opened by turning a rotary hand wheel. The valve will be plumbed to drain both the discharge and intake sides of the pump, the relief valve and other plumbing components as required.

The valve will be placed as low as possible to provide proper drainage of the components plumbed to it. The valve will be rated to 600 PSI minimum and suitable for daily valve actuation.

# SKID PUMP PLUMBING- GENERAL

The plumbing system will utilize stainless steel piping incorporating hosing to allow for flex. The piping will utilize TIG welding to provide a complete seal. Hard angles will be avoided when possible to improve water flow characteristics. The piping will utilize Victaulic couplers whenever possible to allow flex as the body module flexes.

Threaded sections of piping will be avoided to reduce the leak potential of the system. Victaulic couplers will be used in place of threading to reduce leak potential. Schedule 10 stainless steel piping will be used for transport type piping. Schedule 40 stainless steel will be used for areas requiring threading to provide a stable threading base. Brackets will be installed to support threading locations thereby reducing the potential for leaks.

All hoses will be connected directly to the tank due to the different flex ratios of the tank to body. Any front discharges, any rear discharges, and all cross lays will use hose to reach the actual discharge. The use of hose will be utilized due to the difference in flex or movement between the discharge location and the pump connection. Drain lines will be provided at the lowest points in the plumbing system to allow for complete drainage. Bleeders will be provided for all gauges to relieve pressure after use.

All piping will be hydrostatically tested to assure structural integrity in accordance with NFPA standards, with the test results submitted to purchaser upon delivery.

The plumbing will be unpainted.

# **AUXILIARY FUEL SYSTEM**

The fuel system for the auxiliary fire pump will be plumbed to the chassis fuel system. There will be a separate fuel pickup tube mounted in the chassis fuel tank specifically for a separate engine driven pump assembly. There will be an electric fuel pump with regulator and fuel hose furnished between the chassis fuel tank and the auxiliary pump.

# **AUXILIARY FIRE PUMP ELECTRIC START WIRING TO CHASSIS**

Properly sized 12 volt positive and negative cables will be provided from the chassis battery to the auxiliary fire pump.

# **AUXILIARY PUMP EXHAUST SYSTEM**

The auxiliary fire pump and engine assembly will have a muffler and exhaust pipe. The exhaust pipe will be routed to just behind the passenger side bootster reel.. An additional guard will be installed where the pipe is exposed to touch by an operator.

# LOW PRESSURE PUMP SHUT-DOWN

If the fire pump runs out of water and the pressure decreases to zero, an automatic pressure switch shall detect the condition, and after 1 minute the device shall turn off the fire pump operation.

# LOW OIL PRESSURE / HIGH TEMPERATURE PUMP SHUT-DOWN

If the fire pump has low oil pressure or high engine temperature, automatic pressure switches will detect the condition, and the device will turn off the fire pump operation. There will be an override switch provided and installed on the operators pump panel to allow the system to be disabled when required.

# **AUXILIARY PUMP RUNNING INDICATOR**

The auxiliary fire pump installation will have "run light" and on-off switch on the cab console.

# 2-1/2" GATED INTAKE -- REAR

One (1) 2-1/2" gated suction intake will be installed on rear area to supply the fire pump from an external water supply. The valve will be a controlled with a direct quarter-turn ball valve control handle and will have 2-1/2" NH male thread with removable screen. The pump plumbing to the intake will be with full flow flexible hose or piping with Victaulic couplings. The color coded label will be installed near the control handle.

The specified valve will have a direct actuated 'local' control, Akron valve handle.

# **ADAPTER**

An Akron Brass Style 337, item 03370122 rigid female to male adapter shall be provided. The adapter shall be constructed of Pyrolite. It shall be 2.5" NH female inlet by a 1.5" NH male outlet.

# WATER TANK SUPPLY LINE TO FIRE PUMP

A 2.5" water tank to pump line shall be installed with a 2.5" full flow quarter turn ball valve and piping. The line shall be equipped with a hump hose with stainless steel hose clamps.

# FIRE PUMP DISCHARGES

# 1-1/2" DISCHARGE LEFT SIDE

One (1) 1-1/2" discharge will be installed on the left side of the body forward of the hose reel and controlled by a quarter turn ball valve. The discharge will have 1-1/2" NSTM male hose threads and label adjacent the control handle.

One (1) Akron 8815 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

The Class A foam system will be piped to the specified discharge.

# 1-1/2" DISCHARGE RIGHT SIDE

One (1) 1-1/2" discharge will be installed on the right side of the body ahead of the hose reel, controlled by a quarter turn ball valve. The discharge will have 1-1/2" NSTM male hose threads and label adjacent the control handle.

One (1) Akron 8815 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

One (1) chrome plated brass 1.5" NH rocker lug cap with a securing chain or cable will be installed on the discharge.

The Class A foam system will be piped to the specified 1-1/2" discharge.

# 1-1/2" REAR DISCHARGE

One (1) 1-1/2" discharge will be installed on the rear, controlled by a quarter turn ball valve. The discharge will have 1-1/2" NH male hose threads and nameplate label adjacent the valve control handle.

One (1) Akron 8815 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum

environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

One (1) chrome plated brass 1.5" NH rocker lug cap with a securing chain or cable will be installed on the discharge.

The Class A foam system will be piped to the specified 1-1/2" discharge.

# 1.5" DISCHARGE WATER ONLY- REAR

One (1) 1-1/2" water-only, labeled #19, discharge will be provided at the rear pump operator's panel. The discharge will be plumbed with stainless steel pipe and/or 1-1/2" flexible high pressure hose, and will terminate with 1-1/2" NST male threads.

One (1) Akron 8815 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

One (1) chrome plated brass 1.5" NH rocker lug cap with a securing chain or cable will be installed on the discharge.

**ROLLERS-COVERS-TRAYS** 

# **ALUMINUM TRAY -- 2-1/2" HOSE**

An aluminum hose tray for maximum capacity of 2-1/2" double jacket hose will be provided on top of the spare tire compartment. It will measure approximately 55-1/8-inches long, 15-inches wide and deep enough to match the height of the other top compartments.

# **ALUMINUM TRAY -- 1-1/2 " HOSE**

An aluminum hose tray for 200 feet of 1-1/2" single jacket hose will be provided to the left of the suction hose storage compartent. It will measure 30 inches long, 7 inches wide and 12 inches deep.

# **VINYL HOSELAY COVERS**

The 2-1/2" and the 1-1/2" hose boxes will be covered with red vinyl soft covers securely attached to protect hose from weather and prevent lose of hose.

# **HOSE REELS**

Two (2) Hannay aluminum hose reels will be installed. The reels will have leak proof ball bearing swing joint, adjustable friction brake, electric 12 volt rewind and manual crank rewind provisions. The reels will be plumbed with wire reinforced, high-pressure hose coupled with brass fittings. The reels will be designed to hold 100 feet of 1 inch inside diameter booster hose.

The reel will be provided with a #227 2/3 HP 12 volt electric motor for rewinding the hose back on to the reel. This motor will be controlled with two (2) Cole Hersee brand, Model #M-612 momentary push button switches, located directly adjacent to the hose reel, one (1) on each side of the apparatus body. The hose reel will have provisions for being rewound manually. The pinion shaft for the manual rewind gear will be equipped with an adjustable tension brake, controlled at the hose reel.

Hose guides mounted low with four sided roller assemblies will be provide on each reel to the outside of the body. The reels will be mounted forward on the body and behind the cab protector.

# **HOSE REEL DISCHARGE**

One (1) 1" discharge will be piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve will be controlled on pump panel. A nameplate label will be provided near the valve control handle.

Two (2) Akron 8810 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

Two (2) push button hose reel rewind controls {will/shall} be installed adjacent the reel area.

The hose reel and hose will be equipped with 1" NPSH hose threads.

The Class A foam system will be piped to the specified discharge.

The hose reels will be mounted on the left and right side, top of the body. One (1) on each side.

The hose reels will be mounted on the left and right side, on top of hose storage boxes. One (1) on each side with drop down doors. Each hose storage area will be approximately 30-3/4-inches wide, 7-3/4-inches high and 21-1/2-inches deep. Provision for preconnecting hose to right and left discharges included in design of the doors.

#### **REEL MOUNTED HOSE**

One (1) 100 foot length of 1" water hose shall be installed on each hose reel. The hose shall be equipped with chrome plated pin lug couplings and have an 800 PSI working pressure.

# FOAM SYSTEM

A FoamPro electronic foam system will be provided. The system will be designed for use with Class A foam concentrate. The foam proportioning operation will be designed for direct measurement of water flows and will remain consistent within the specified flows and pressures. The system will be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.

The system will be equipped with a control module suitable for installation on the pump panel. There will be a microprocessor incorporated within the motor driver that will receive input from the system's flowmeter, while also monitoring the foam concentrate pump output. The microprocessor will compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump. A "foam capable" paddlewheel-type flowmeter willbe installed in the discharge side of the piping system.

The control module will enable the pump operator to:

- Activate the foam proportioning system
- Select the proportioning rates from 0.1% to 1.0%
- See a "low concentrate" warning light flash when the foam tank level becomes low and in two (2) minutes, if the foam concentrate has not been added to the tank, the foam concentrate pump shall be capable of shutting down.

A 12-volt electric motor driven positive displacement plunger pump will be provided. The pump capacity range will be 0.1 to 1.7 GPM (6.4L/min) at 200 PSI (13.8 BAR) with a maximum operating pressure up to 400 PSI (27.6 BAR). The system will draw a maximum of 30 amps at 12 volts. The motor will be controlled by the microprocessor which will be mounted to the base of the pump. It receives signals from the control module and power the 1/3 horsepower (.25 Kw) electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.

A full flow check valve will be provided in the discharge piping to prevent foam contamination of the fire pump and water tank. A 5 PSI (.35 BAR) opening pressure check valve will be provided in concentrate line.

Components of the complete proportioning system as described above will include:

- Operator control module
- Paddlewheel flowmeter
- Pump and electric motor/motor driver
- Wiring harnesses
- Low level tank switch
- Foam tank
- Foam injection check valve
- Main waterway check valve

#### • Flowmeter and tee

The foam system will be installed and calibrated to manufacturer's requirements. In addition the system will be tested and certified by the apparatus manufacturer to applicable NFPA standards.

The foam system design will be tested and pass environmental testing in accordance to SAE standards.

An installation and operation manual will be provided for the unit. The system will have a one (1) year limited warranty by the foam system manufacturer.

The FoamPro 1601 Series foam system will be provided with a control cable from the controller to the foam pump assembly.

The FoamPro 1601 Series foam system will be provided with a standard pump panel mounted FoamPro control head.

A FoamPro brass flowmeter will be provided. The flowmeter will be installed in the "foam capable" discharge line. The flowmeter will have maximum accuracy between the flow range of 10 GPM and 320 GPM and be capable of operation between 3 GPM to 380 GPM. The tee will have NPT and Victaulic inlet and outlets connections.

A FoamPro instruction and system rating label will be provided. The label will display information for a FoamPro 1601 Series foam system and will meet applicable sections of the NFPA standards.

# **PUMP AREA COVER DOORS**

One door, approximately 44-1/4-inches by 19-inches, will be provided over the pump area. The door will have a stainless stell hinge on the driver's side and latch closed. The door will be fabricated from 3/16" aluminum embossed diamond plate, with an aluminum 2" x 2" x 3/16" square tube support frame.

# **PUMP PANEL**

The pump panel will be constructed of 14 gauge stainless steel. It will be of the minimum size needed to provide operation of the pump.

# WATERAX PUMP CONTROL PANEL

The WATERAX pump controlls will be installed in the Boise Mobile custom using the original panel to allow use of their gauges and controls.

# **WATER TANK GAUGE**

One (1) Fire Research TankVision model WLA2000 tank gauge will be installed on the pump panel. The water tank indicator kit will include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator will show the volume of water in the tank on nine (9) easy to see super bright LEDs.

# **CAB MOUNTED -- WATER TANK GAUGE**

One (1) Fire Research brand, Model WL2500 tank level gauge, will be provided on the cab center console, within view of the driver's seating position, to monitor the water tank liquid level. The gauge will indicate the water tank liquid level on an LED bar graph display, and will be wired in common with the sensor circuit for the pump operator's panel-mounted gauge.

# **CLASS A FOAM TANK GAUGE**

One (1) Fire Research brand, Model WL 2600 tank level gauge will be provided on the pump operator's panel to monitor the foam concentrate storage tank level. The gauge will indicate the foam concentrate storage tank liquid level on an LED bar graph display.

# **TEST DATA AND SAFETY PLACARDS**

The pump panel will be provided with labels required by applicable sections of NFPA #1901. The labels will be installed at the operator's area that provides rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, will also be included. The labels will be provided with all information at the factory and be attached to the apparatus prior to delivery.

# **REAR MOUNT PUMP PANEL LIGHTING**

One (1) Weldon #2025 light(s) will be installed under a rear mount pump panel light hood. The light(s) will have clear lenses and will be controlled by a switch located on the operator's instrument panel.

# **PUMP PANEL LIGHT BEZELS**

There will be one (1) CPI bezels installed on the pump panel, as a mount for the pump panel lights.

# **DESIGN AND SCOPE OF MINI PUMPER BODY**

The body will be designed and constructed of commonly available structural components for ease of repair and maintenance. The body will be of a modular design with the body structure independent of the chassis frame rails. The body module will be mounted to the chassis frame rails utilizing a unique double spring mounting system for flexibility and durability over the lifetime of the apparatus. The fabrication of the body will be of welded construction to withstand the rigors of fire service use.

The body will be designed to incorporate and support the tank, compartments, and all other equipment intended to be stored in or mounted to the body module. The body skeleton and compartment framework will be designed of tubular members for increased strength and stress resistance. There will be no sheet metal or extrusions utilized in the foundation or structural components of the body module due to their critical role in assuring lifetime durability, functionality and usability.

# **BODY FRAMEWORK**

The entire body framework will be fabricated of 6061-T6 aluminum architectural style tubing. The body framework will be a completely welded unit, forming a connected, stable frame for strength, longevity and providing the skeleton of the body module. The internal upright members of the framework will act as support for the top layer of the body module. The external upright members will act as an exoskeleton providing form and support for compartments while acting as the external surfaces of the module. The framework will define the compartment openings and provide a rigid mounting location for all compartments and doors.

The foundation cross-members will be placed perpendicular to the chassis frame rails in the wheel well area extending the full width of the body and will be constructed of 3 inch high x 2 inch wide x .250 inch tubing. The foundation members parallel to the chassis frame rails will be constructed of 3 inch square x .250 inch tubing and will connect the foundation cross members and extend the full length of the body.

All tank support cross members will be placed to support the water tank as per the tank manufacture's recommendation. These supports will be constructed of 3 inch high x 2 inch wide x .250 inch aluminum tubing. The tank support angles will be constructed of 4 inch x 4 inch x .250 inch thick angles and will be placed at the tank sides parallel to the chassis frame rails to provide lateral support for the tank and protection from debris from the wheels.

The internal upright supports for any ceiling and top component will be placed to provide support for all components and will be constructed of aluminum tubing measuring 2 inch square x .250 inch wall thickness. All front to rear connecting members will be 3 inches high x 2 inches wide x .125 inch wall thickness and will be placed in between the interior upright support members to provide rigidity, stability and support to all top layer components. All gussets will be constructed of 2 inches high x 3 inches wide x .250 inch thick plate which will be placed on the top and bottom of the foundation cross members where they intersect with the exterior members.

# **BODY MOUNTING SYSTEM**

The mounting assembly will be designed to isolate and protect the body module from vibration and twisting stresses imparted by the flexing of the chassis frame rails. The body module will employ spring loaded body mounting assemblies. Each two piece mounting assembly will be designed to positively position the body on the frame rails while preventing lateral and forward or aft movement. Mounting assemblies will be placed forward and rearward of the rear axle as necessary to provide a strong and stable mounting of the body module.

Each mounting assembly will consist of a "male" upper mounting bracket and a "female" lower mounting bracket. The upper mounting brackets will be fabricated from .250 inch thickness steel plate, with .250 inch painted steel lower mounting brackets. The upper mounting brackets will be welded directly to the foundation connecting members. The lower mounting brackets will be bolted to the exterior side facing surface of the chassis frame rails.

The mounting brackets will be aligned and connected by two (2) 5/8 inch diameter grade 8 bolts equipped with compression springs. The springs will be of the appropriate tension rating for the weight requirements of the body module. The mounting assembly will be designed to completely eliminate sheering forces on the mounting bolts.

The foundation connecting members will be placed on top of the chassis frame rails for added strength and stability. The foundation members will be isolated from the steel chassis frame rails by .25 inch thickness steel plates which have .5 inch thick 80 durometer rubber pads vulcanized to the bottom surface of each plate. The steel plates will be welded to the bottom of the foundation, doubling as additional gussets at foundation cross member joints.

# **BODY MATERIAL**

All materials utilized will be of the correct type, alloy, and thickness to withstand the intended usage and provide protection against cracking, corrosion or metal fatigue. The body compartments will be fabricated using .125 inch 5052-H32 aluminum for most compartments unless otherwise stated. Any use of proprietary parts or materials in the construction of the body will be unacceptable, due to potential delays or difficulties in an event of future repairs or when service becomes necessary.

All external upright supports for integral compartments will incorporate a second set of upright supports constructed of 3 inch wide x 2 inch deep x .250 inch wall thickness and will be located outboard of the internal upright supports to provide a rigid structure for the compartments to be mounted to. The compartment openings will be constructed of 3 inch high x 2 inch wide x .125 inch wall thickness cross members and will be placed in between the external upright supports to define the openings of all enclosed body compartments again, providing a rigid mounting location for compartments.

# **COMPARTMENT FLOOR-SWEEP OUT STYLE**

Each compartment will feature a raised floor sufficient enough so the lip of the compartment will clear the frame rail of the body module to allow debris to be removed easily from the compartment. A hat shaped support will be placed under the floor to improve stability and prevent bowing of the floor with use and age.

# **COMPARTMENTATION**

All compartments will be constructed of smooth aluminum and welded for strength and will be sealed from the elements. The compartments will be attached to the aluminum superstructure only, in order to maintain a truly

modular design. Each compartment will include ventilation louvers which will be provided on each side panel of the compartment to maximize moisture evacuation for the protection of the equipment and the compartment itself. Louvers will be placed in the ventilation holes to prevent debris transfer to and from the inside of the body module. Each compartment will feature a smooth edges and surfaces from the walls to each weld without sharp edges in the material.

# COMPARTMENT FLOOR-SWEEP OUT STYLE

Each compartment will feature a raised floor sufficient enough so the lip of the compartment will clear the frame rail of the body module to allow debris to be removed easily from the compartment. A hat shaped support will be placed under the floor to improve stability and prevent bowing of the floor with use and age.

## **COMPARTMENT DFF**

One full height compartment will be provided on the driver's side of the apparatus body, forward of the rear wheels. This compartment will span from the front of the body to the front of the rear wheel well quarter panel in width and from below the horizontal compartment walkway to the rub rail in height. Approximate compartment dimensions: 29" wide x 40" high x 19" deep.

# **COMPARTMENT FLOOR DRAIN**

The compartment will be provided with rear corner floor drains to the underside of the body.

# COMPARTMENT SILL PLATE

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# ADJUSTABLE SHELVES

There will be two (2) adjustable shelves installed; and the shelves will be constructed of .125" thick smooth aluminum plate and be mounted in the specified compartment with double bolt aluminum shelf brackets. Each shelf will have a broken front edge, and a broken rear edge for added strength and reinforcement.

# COMPARTMENT SHELF GRATING

The specified compartment shelf will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The compartment shelf and or shelves will have a red and white 3M Diamond Grade reflective stripe applied horizontally on the front edge. The stripe will be a 2" minimum in width.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

# **COMPARTMENT DCU**

One horizontal compartment will be provided above the rear wheel well on the driver's side of the apparatus body. This compartment will span between the full height compartments fore and aft of the rear wheel well quarter panel in width and from below the horizontal compartment walkway to the top of the rear wheel well quarter panel in height. Approximate compartment dimensions: 48" wide x 18" high x 19" deep.

# COMPARTMENT FLOOR DRAIN

The compartment will be provided with rear corner floor drains to the underside of the body.

# **COMPARTMENT SILL PLATE**

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# **ADJUSTABLE SHELF**

There will be one (1) adjustable shelf installed; and the shelf will be constructed of .125" thick smooth aluminum plate and be mounted in the specified compartment with double bolt aluminum shelf brackets. The shelf will have a broken front edge, and a broken rear edge for added strength and reinforcement.

# **COMPARTMENT SHELF GRATING**

The specified compartment shelf will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The compartment shelf and or shelves will have a red and white 3M Diamond Grade reflective stripe applied horizontally on the front edge. The stripe will be a 2" minimum in width.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

# **COMPARTMENT DRF**

One compartment will be provided on the driver's side of the apparatus body aft of the rear wheels. This compartment will span from behind the rear wheel well quarter panel to the rear of the body in width and from below the horizontal compartment walkway to the top of the wheel well in height. Approximate compartment dimensions: 19" wide x 40" high x 19" deep.

# COMPARTMENT FLOOR DRAIN

The compartment will be provided with rear corner floor drains to the underside of the body.

#### COMPARTMENT SILL PLATE

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# ADJUSTABLE SHELF

There will be one (1) adjustable shelf installed; and the shelf will be constructed of .125" thick smooth aluminum plate and be mounted in the specified compartment with double bolt aluminum shelf brackets. The shelf will have a broken front edge, and a broken rear edge for added strength and reinforcement.

The compartment shelf and or shelves will have a red and white 3M Diamond Grade reflective stripe applied horizontally on the front edge. The stripe will be a 2" minimum in width.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

# **COMPARTMENT PFF**

One full height compartment will be provided on the passenger's side of the apparatus body forward of the rear wheels. This compartment will span from the front of the body to the front of the rear wheel well quarter panel in width and from below the horizontal compartment walkway to the rub rail in height. Approximate compartment dimensions: 29" wide x 40" high x 19" deep.

# COMPARTMENT FLOOR DRAIN

The compartment will be provided with rear corner floor drains to the underside of the body.

# COMPARTMENT SILL PLATE

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# **ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING**

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# ADJUSTABLE SHELVES

There will be two (2) adjustable shelves installed; and the shelves will be constructed of .125" thick smooth aluminum plate and be mounted in the specified compartment with double bolt aluminum shelf brackets. Each shelf will have a broken front edge, and a broken rear edge for added strength and reinforcement.

# COMPARTMENT SHELF GRATING

The specified compartment shelf will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The compartment shelf and or shelves will have a red and white 3M Diamond Grade reflective stripe applied horizontally on the front edge. The stripe will be a 2" minimum in width.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

# **COMPARTMENT PCU**

One horizontal compartment will be provided above the rear wheel well quarter panel on the passenger's side of the apparatus body. This compartment will span between the rescue style compartment forward of the rear wheel well to the rear of the body in width and from below the horizontal compartment walkway to the top of the rear wheel well quarter panel in height. Approximate compartment dimension: 48"wide x 18" high x 19" deep.

# **COMPARTMENT FLOOR DRAIN**

The compartment will be provided with rear corner floor drains to the underside of the body.

# **COMPARTMENT SILL PLATE**

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

#### **COMPARTMENT PRF**

One compartment will be provided on the passenger's side of the apparatus body aft of the rear wheels. This compartment will span from behind the rear wheel well quarter panel to the rear of the body in width and from below the horizontal compartment above the rear wheel well quarter panel to the rub rail in height. Approximate compartment dimensions: 19" wide x 40" high x 19" deep.

# **COMPARTMENT FLOOR DRAIN**

The compartment will be provided with rear corner floor drains to the underside of the body.

# COMPARTMENT SILL PLATE

The compartment will feature a polished stainless steel sill plate protecting the painted surface of the compartment when items are accessed.

# ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable Uni-Strut equipment mounting tracks will be installed inside the compartment with two (2) channels on the left wall and two (2) channels on the right wall. The tracks will be positioned to provide support for equipment mounting. The length of the tracks will be sized to allow for optimum use of the compartment interior.

# ADJUSTABLE SHELF

There will be one (1) adjustable shelf installed; and the shelf will be constructed of .125" thick smooth aluminum plate and be mounted in the specified compartment with double bolt aluminum shelf brackets. The shelf will have a broken front edge, and a broken rear edge for added strength and reinforcement.

The compartment shelf and or shelves will have a red and white 3M Diamond Grade reflective stripe applied horizontally on the front edge. The stripe will be a 2" minimum in width.

# **COMPARTMENT GRATING**

The compartments will be fitted with removable interlocking vinyl Dri-Dek grating. This material will be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

## **COMPARTMENT BL**

A vertical storage compartment for the spare tire shall be provided. The compartment opening will be located at the back of the body, and will be an integral component of the water tank assembly, constructed from the same material as the water tank. The compartment will be located alongside the pump and to the left side of the apparatus. The compartment will include a locking, vertically-hinged door.

# TOP OF TANK COMPARTMENT

An Aluminum Diamond Plate storage compartment will be provided on top of water tank. This compartment will extend to the back of the water water tank in length, be 34-inches wide and 15-inches deep. The lift up cover will be hinged to the right side of the vehicle and it will be lockable with same keys that fit the other compartments.

# PASSENGER SIDE DUNNAGE COMPARTMENT

The passenger's side dunnage compartment will be located at the top outer edge of the body; above the passenger's side compartments. This compartment will be made from aluminum diamond plate. Approximate dimensions are 66-inches wide x 23-inches high x 21-3/4-inches deep.

Door to this compartment is to be a lift up door on the passenger side of the vehicle, accessible from the ground alongside the apparatus.

# DRIVERS SIDE DUNNAGE COMPARTMENT

The driver's side dunnage compartment will be located at the top outer edge of the body; above the driver's side compartments. This compartment will be made from aluminum diamond plate. Approximate dimensions are 66-inches long x 23-inches high x 21-3/4-inches deep.

The forward half of the compartment will be enclosed with a lift up door accessible from the ground beside the apparatus. The rear section of the compartment will be open to the top and fit with nylon straps to secure an ice cooler.

# SLIDE-IN REAR SUCTION HOSE COMPARTMENT

The right rear of the apparatus body will have a slide-in hard suction hose storage compartment with an aluminum door to store three (3) 1-1/2-inch. The approximate inside dimensions will be: 15-inches high, x 5-inches wide, and a minimum of 98-inches long front to rear. The compartment will be an integral part of the body and will provide ample space for storage of the specified hard suction hose.

# WHEEL WELL LINERS

Wheel well liners designed to protect the body from impact resulting from road debris thrown by the tires will be installed. The removable liners will be constructed from UHMW material to encompass the entire inner wheel well area. The liners will be secured with threaded fasteners.

# REAR WHEELWELL PAINT PROTECTION

Clear apint protection film (Clear Bra) will be installed at each rear wheel opening. The film will provide a seemless, self healing barrier protecting the paint finish against damage.

# **FUEL / DEF FILL ACCESS**

A Cast Products aluminum enclosure with hinged access door will be installed in the driver's side wheel well area to accommodate the fuel / DEF fill assembly.

# RUB RAILS, CLEARANCE LIGHTS, AND REFLECTIVE TAPE

The sides of the lower body area fore and aft of the wheel well area will be provided with 2" x 1.5" x .250" extruded aluminum rub rails, with end caps or angled corners. The rub rails will be equipped with white DOT type reflective striping, and clearance lights installed as specified.

# FRONT OF BODY -- PROTECTIVE SURFACE

The entire front of the apparatus body will include a protective surface, constructed of aluminum tread plate material.

# FRONT CORNERS OF BODY -- PROTECTIVE SURFACES

The front corners of the apparatus body will include a protective surface installed. The surface will be constructed of mirror finish stainless steel material.

# **REAR BODY PANELS**

The rear tail panels of the apparatus body will be unpainted, to accommodate chevron striping.

# **OUTER REAR BODY PANELS -- PROTECTIVE COVERING**

The rear outer panels of the body will have protective surfaces installed on the corners. The protective covering will be constructed of mirror finish stainless steel material.

# **TOP OF BODY COMPARTMENTS -- PROTECTIVE SURFACES**

The top of the side compartments will have a protective surfaces installed. The surface will be constructed of aluminum tread plate material.

## **SCUFF OR KICK PLATES**

Polished stainless steel material will be installed in specified locations for kick or scuff plate applications.

# ANODIZED ALUMINUM DRIP RAIL

All enclosed compartment doors will be provided with an anodized aluminum drip rail above the doors.

# ALUMININUM – COMPARTMENT DOOR, HINGED OVERLAP

Four (4) single, vertically hinged doors will be provided and will be fabricated of aluminum. The frame of the door will be constructed of 1.75" x 1.75" x 1.25" aluminum tubing to prevent corrosion and provide structural support. The spacing created by the frame tubing will be filled with Styrofoam for added insulation and noise reduction. The exterior surface will be .125" aluminum for durability. The interior surface will be .080"

aluminum. There will be no mechanical fasteners, such as bolt heads or rivets on the inside or outside of the doors.

The exterior of the door will overlap the opening of the compartment. A .75" lip will be constructed around the opening of the compartment and the exterior of the door. A rubber seal will be installed on the .75" lip on both the compartment and the door to provide for a double seal against water and dust. A rain gutter will be mounted above the door creating a third layer of water protection.

The door will be designed utilizing a D-ring style latch system. A 6" stainless steel D-ring latch, large enough to accommodate a gloved hand, will be mounted on the exterior of the door. A stainless steel bezel will be installed to house and protect the D-ring latch mechanism. The easily serviced bezel will be mounted utilizing stainless steel screws. The D-ring latch mechanism will be a double catch design. The first catch will engage to secure the door in the event of improper closure. The second catch will seal the door from water and other elements once the door has been properly closed.

The door will be mounted using a stainless steel piano style hinge and a .250" diameter hinge pin for stability. The vertical hinge will be mounted to the body frame with threaded inserts and stainless steel screws.

A gas strut will be utilized to hold the door in the open position and to prevent the door from slamming during closing. The gas strut will be mounted directly to the door with a stainless steel bracket assembly for stability and ease of maintenance. The gas strut will be mounted to the interior of the compartment with a fully adjustable assembly.

The exterior of the compartment doors and the door frames will be painted to match the body in quality and tone. The interior surface will not be painted, it will be sanded utilizing a dual orbital technique.

# ALUMININUM - COMPARTMENT DOORS, DROP DOWN HINGED OVERLAP

Two (2), horizontally hinged drop down doors will be fabricated from aluminum. The doors will feature exterior surfaces which overlap the opening of the compartments. The exterior surface will be .125" aluminum for durability and damage resistance. The interior surface will be .080" aluminum for structural support and overall appealing appearance of the compartment. The frame of the doors will be constructed of 1.75" x 1.75" x .125" aluminum tubing to prevent corrosion and provide structural support. The spacing created by the frame tubing will be filled with Styrofoam for added support and dent resistance, temperature insulation, and noise reduction.

A .75" lip will be constructed around the opening of the compartments and the exterior of the doors. A rubber seal will be installed on the .75" lip of both the compartment and the door to provide for a double seal against water and dust. A rain gutter will be mounted above the doors for an added third layer of water protection.

The doors will be designed utilizing a D-ring latch system. A large, to accommodate a gloved hand, 6 inch stainless steel D-ring latch will be mounted on the exterior of the doors to allow the doors to seal and fasten in the closed position. A stainless steel bezel will be installed to house and protect the D-ring latching mechanism.

The easily serviced bezel will be mounted utilizing stainless steel screws for added stability of the mechanism and ease of maintenance in the event of damage. The D-ring locking mechanism will be of a double catch design. The first catch will engage to secure the door in the event of improper closure. The second catch will seal the door to water and other elements once the door has been properly closed.

The doors will be mounted with a stainless steel hinge with a .250" diameter hinge pin for stability. The horizontal hinges will be mounted to the body frame with threaded inserts and stainless steel screws.

Stainless steel cables will be utilized to hold the doors in the open position. The cables will be mounted directly to the doors with a stainless steel bracket assembly for stability and ease of maintenance. The cables will be mounted to the interior of the compartments with fully adjustable assembly for ease of adjustment and maintenance while increasing stability.

The exterior of the compartment doors and the door jams will be painted to match the body in quality and tone. The interior of the doors will not be painted due to lack of exposure and inherent resistance to corrosion. The interior of the doors will be sanded utilizing a dual orbital technique. The sanding will provide for a smooth, regular, scratch free surface on the interior of the doors. The exterior skin to door frame joining will be painted to provide a moisture proof seal.

#### **ALUMINUM DIAMOND PLATE LIFT UP DOORS**

Three Aluminum diamond plate lift up door will be provided into the the dunnage boxes accessible from the the ground. Locking latches and gas strut hold open devices will be provided.

#### ALUMINUM DIAMOND PLATE DROP DOWN DOORS

Aluminum diamond plate lift up door will be provided into the the dunnage boxes accessible from the the ground. Locking latches and gas strut hold open devices will be provided.

#### **REAR STEP**

The rear step will have a frame work constructed of 2" x 2" x .125" gauge aluminum structural angles and channels on the exterior perimeter with center supports forming an independent assembly welded to the rear body structural framing to provide body protection and a solid rear stepping platform.

The walking surface of the rear step will be aggressive DIAMOND BACK aluminum extrusions that complies to applicable NFPA standards. Outer edge of rear step will have extruded rubrail 2" x 1" aluminum channel with reflective 1" wide white striping. The rear step and body will be constructed so that the angle of departure is not less than 8 degrees when fully loaded. When the vehicle is fully loaded the maximum height of the rear step will be no higher than 24".

The rear of the apparatus body will have a label: "DO NOT RIDE ON REAR STEP, DEATH OR SERIOUS INJURY MAY RESULT".

#### FOLDING STEP -- RIGHT REAR

Three (3) 8" square folding steps of die cast aluminum with stainless steel springs will be provided. The steps will be installed on the rear right side of the body.

#### **REAR STEP LIGHT**

One (1) LED step light with clear lens will be installed on the rear step of the apparatus body, wired to parking brake circuit.

#### **CAB PROTECTION BARRIER**

One (1) cab protection barrier will be provided at the upper forward end of the body, structurally integral to the body, spanning between the horizontal walkways above the enclosed side body compartments. The horizontal top and angled side framework of the barrier will be fabricated from 2" x 2" square aluminum tubing.

Aluminum expanded metal will be welded to this framework. The approximate dimensions of the assembled barrier will be 77" wide at the bottom, 71" wide at the top, with a height to the top ofthe cab, conforming to the shape of the chassis cab.

#### WATER TANK CAPACITY

The water tank will be a poly water tank with a capacity of 400 gallons.

#### **SPARE TIRE STORAGE**

A storage compartment for one (1) spare tire will be provided, located toward the rear of the deck, on the left side of the apparatus beside the pump. The storage compartment will be an integral component of the water tank assembly with interior dimensions of approximately 41-inches high X 13-inches wide X 36-inches deep. The compartment door shall include one (1) or two (2) adjustable overlapping positive catch style lockable latches of sufficient design to ensure lasting function and integrity. The storage compartment shall not sag and the door shall open and close freely.

The water tank will be constructed of polypropylene, nitrogen-welded and tested inside and out. The tank manufacturer will define the floor, top, sides, ends, and baffles material thicknesses. The tank will carry a lifetime warranty.

The transverse and longitudinal swash partitions will be interlocked and welded to each other as well as to the walls of the tank. The partitions will be designed and equipped with vent holes to permit air and liquid movement between compartments. The .cover will be recessed .375" from the top of the side walls. Hold down dowels will extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes will be provided in the top area of the water tank.

The water tank manufacturer will certify the capacity of the water tank prior to delivery of the apparatus. This capacity will be recorded on the manufacturer's record of construction and the certification will be provided to the purchaser when the apparatus is delivered. Tank construction will conform to applicable NFPA standards.

The water tank will be configured in a rectangular style with consistent widths on the sides from top to bottom.

#### NFPA COMPLIANCE

The water tank construction will conform to applicable NFPA standards.

#### TANK SUMP AND DRAIN PROVISIONS

A 12" square x 4" deep sump will be installed in the bottom of the water tank. The water tank sump will be equipped with anti-swirl device. The sump will be provided with a 3" drain plug fitting for drainage purposes.

#### WATER TANK DRAIN PROVISIONS

A 3" plugged drain provision will be installed in the bottom of the water tank, sump, or plumbing for water tank draining and the flushing-out of debris.

#### **CLASS A FOAM TANK SPECIFICATIONS**

The Class A foam tank will have a capacity of 10 gallons.

A separate free standing non-corrosive foam tank(s) will be provided and will meet applicable sections of NFPA standards. The foam concentrate tank outlet connection will be designed and located to prevent aeration of the foam concentrate and will allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.

#### FOAM TANK FILL AND VENTING PROVISIONS

The foam concentrate tank will be provided with a fill pipe having a volume of not less than 2 percent of the total tank volume. The filler opening will be capped with a sealed air-tight threaded cover. The fill opening will be designed to incorporate a removable screen and will be located so that foam concentrate from a five (5) gallon container can be dumped into the tank.

The foam tank filler will be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent will not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent will be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent will be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color coded label or visible permanent marking that reads "CLASS A -- FOAM TANK FILL" will be placed at or near the foam concentrate tank fill opening. An additional label will be placed at or near any foam concentrate tank fill opening stating the type of foam concentrate the system is designed to use.

Any restrictions on the types of foam concentrate that can be used with the system will also be stated, along with a warning message that states "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

A 3/4" PVC fitting will be provided on the foam tank for connection of the foam tank to the suction side of the foam system.

A 3/4" diameter connection, piping, and gate type valve will be installed for the foam tank for draining purposes.

#### Water Tank Drain and Valve Control

A 1.5" connection {will/shall} be installed in the bottom of the water tank and 1.5" gate type manually operated valve.

#### Tank Fill Valve -- Left Rear

A valve for direct filling of the tank will be supplied. The 1/4 turn valve will be configured with 2-1/2" NH female threads, debris screen, threaded plug with retention chain and lever handle. The valve will be located on the left rear of the body.

One (1) Akron 8825 series swing-out style valve(s) will be supplied and installed. All valves will be designed to operate under normal conditions up to 500 PSI and will have dual seats to work in both pressure and vacuum environments. All valves and controls will be easily accessible for service, repair or replacement.

The specified valve will have a direct actuated 'local' control Akron Model TSC valve handle.

One (1) chrome brass 2.5" NH rocker lug plug with a securing chain or cable will be installed on the intake.

#### **BACK PACK FILL SYSTEM**

There will be one (1) back pack fill system provided and installed on the left lower area of the pump panel. The valve plumbing will be 3/4" I.D. hose.

#### 12 VOLT ELECTRICAL SPECIFICATIONS

The following describes the low voltage electrical system on the apparatus including all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The apparatus manufacturer will conform to the latest Federal DOT standards, current automotive electrical system standards and the applicable requirements of NFPA.

Wiring will be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected. Voltage drops will not exceed 10 percent in all wiring from the power source to the using device. The wiring and wiring harness and insulation will be in conformance with SAE and NFPA standards. The wiring harness will conform to SAE J-1128 with GXL temperature properties. Exposed wiring will be run in a loom with a 290 degree Fahrenheit rating. Wiring looms will be properly supported and attached to body members. Electrical conductors will be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

All wiring connections and terminations will provide positive mechanical and electrical connections and be installed in accordance with the device manufacturer's instructions. When wiring passes through metal panels, electrical connections will be with mechanical type fasteners and rubber/plastic grommets

Wiring between the cab and body will be split using Deutsche type connectors or enclosed in a terminal junction panel allowing body removal with minimal impact on the apparatus electrical system. Connections will be insulated with heat shrink tubing to resist moisture and foreign debris such as grease and road grime. Weather resistant connectors will be provided throughout the system.

Electrical junction or terminal boxes will be weather resistant and located away from water spray conditions. When required, automatic reset breakers and relays will be housed in the main body junction panel.

There will be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless enclosed in an electrical junction box or covered with a removable electrical panel. Wiring will be secured in place and protected against heat, liquid contaminants and damage and will be uniquely identified at least every six inches (6") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA standards.

Low voltage protective devices will be provided for the electrical circuits. The devices will be accessible and located in required terminal connection locations or weather resistant enclosures. Over current protection devices will be automatic reset type suitable for electrical equipment and will meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors will have a direct current rating of 125 percent of maximum current for which the circuit is protected. Electro-magnetic interference suppression will be provided in the system as required in applicable SAE standards.

The electrical system will include the following:

Electrical terminals in weather exposed areas will have a non-conductive grease or spray applied. All terminal plugs located outside of the cab or body will be treated with a corrosion preventative compound.

All electrical wiring will be placed in a protective loom or be harnessed.

Exposed connections will be protected by heat shrink and or a sealed connector.

Large fender washers will be used when fastening equipment to the underside of the cab roof and all holes made in the roof will utilize a weatherproof strain relief.

Electrical components installed in exposed areas will be mounted in a manner that will not allow moisture to accumulate inside.

A service loop will be provided behind all electrical appliances to allow them to be pulled away from their mounting area for inspection and service work.

Warning lights will be switched in the chassis cab with labeled rocker type switches located in an accessible location. Individual rocker switches will be provided only for warning lights provided exceeding the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches will be appropriately identified as to their function. For easy nighttime operation, an integral indicator light will be provided to indicate when a circuit is energized.

A single warning light switch will activate all required warning lights. This switch will allow the vehicle to respond to an emergency "calling for the right of way". When the parking brake is activated, a "blocking the right of way" system will be automatically activated per NFPA requirements. All "clear warning lights" will be automatically shed on actuation of parking brake.

Upon completion of the vehicle and prior to delivery, the apparatus will be electrically tested and the electrical testing, certifications, and test results will be submitted with delivery documentation per the requirements of NFPA.

#### **ELECTRICAL WIRING HARNESS**

The electrical system will be divided into separate harnesses. The individual harnesses will be connected with Deutsch type quick connectors. The electrical power to all apparatus lighting and accessories will be supplied by an ignition activated solenoid.

#### CAB CONSOLE

The cab will be equipped with an operator's control console located between the driver's and officer's seats. This console will be designed to be of sufficient size to allow for the installation of the switches and controls listed below. The console will be designed to have removable panels to allow for access to the internally mounted electrical components and wiring. This console will be painted with a non-glare black finish.

The console will contain the switches used to control the emergency light circuits, including a "Master" switch, and the general illumination lighting circuits. It will also contain the siren control head.

#### **BATTERY ON INDICATOR LIGHT**

One (1) "Battery On" indicator light, with a green lens, will be provided on the console facing driver's seating position. This light will illuminate anytime the battery switch is turned to the "ON" position.

#### **BATTERY CHARGER**

A Kussmaul Autocharge Model #091-12-12 automatic battery charger will be provided and installed behind the rear seat on the driver's side. I will be wired to the 12 volt batter and will receive its power from the Auto-Eject receptacle mount in the left fender.

#### 120 VOLT SHORE POWER RECEPTACLE

A Kussmaul model 091-55-20-120-BW amp "Super Auto-Eject" shore power receptacle will be provided with hinged weatherproof cover and an enclosure for protection from road dirt and damage. This shore power receptacle will be mounted forward of the emargency warning light in the area over the rear wheels on the driver's side.

The shore power cord's plug will be "ejected" when the chassis's engine starter is engaged and the receptacle will be wired to the battery charger.

#### **IDENTIFICATION LIGHTS**

LED identification lights will be installed on the vehicle as required by applicable highway regulations.

#### LICENSE PLATE BRACKET

A chrome plated license plate bracket with LED light will be provided at the rear of the apparatus.

#### **STOP AND TAIL LIGHTS**

Two (2) Whelen Model #M6BTT/M6FC, 4" x 6" LED stop and tail lights with red lenses {will/shall} be provided. The light {will/shall} be furnished with a optic polycarbonate lens for maximum light spread and furnished with a 6" wire pigtail.

#### TURN SIGNALS

Two (2) Whelen M-Series 4" x 6" LED directional lights will be provided. The turn signal lights will incorporate amber LED's for a maximum population configuration with an amber non-optic polycarbonate lens. The light head will have six (6) flash patterns. The encapsulated housing will be moisture and vibration resistant

and furnished with a 6" wire pigtail.

#### **BACK-UP LIGHTS**

Two (2) Whelen M-Series, 4" x 6" rear LED back-up lights will be installed.

#### TAILLIGHT BEZELS

Two (2) Whelen M Series housings will be installed at the rear of the apparatus for four (4) Whelen M-Series stop-tail-turn-backup and warning lights.

#### **MAP LIGHT**

One (1) Havis Shields #C-MAP-T-LED 12" LED map light, 12 volt, with a gooseneck arm an on-off switch located on the base of the light will be installed.

#### **CAB GROUND LIGHTS**

Four (4) 4" diameter LED ground lights will be installed under the cab step area in compliance with NFPA standards; and activated with the parking brake.

#### **GROUND LIGHTS - MID BODY**

Two (2) LED ground lights will be installed under the mid-body compartment floor, one on each side of the apparatus, wired to parking brake circuit.

#### **GROUND LIGHTS - UNDER REAR STEP**

Two (2) LED ground lights will be installed under the rear step area, one on each side of the apparatus, wired to parking brake circuit.

#### **REAR STEP LIGHTS**

Two (2) LED step lights with clear lens will be installed at the rear step of the apparatus body, wired to parking brake circuit.

#### **DECK LIGHTS**

Two (2) Buyers Products LED 360 degree floodlights with on/off switch will be installed. One each side of the cab protector.

#### **HOSE BED OR DECK LIGHT**

One (1) Buyers Products LED 360 degree swivel floodlight with on/off switch {will/shall} be installed at the rear corner of the body.

#### **COMPARTMENT LIGHTING**

Two (2) Code 3 800 Series Corner LED lights will be installed in each of the specified compartment(s).

#### **COMPARTMENT LIGHTING**

Two (2) Code 3 800 Series Corner LED lights will be installed in each of the specified compartment(s).

#### **COMPARTMENT LIGHT SWITCHES**

Each interior compartment light will be automatically controlled by a door activated "On-Off" switch.

#### DOOR OPEN WARNING LIGHT

A door open warning light will be installed on cab dash. The light will be a flashing 1" jumbo incandescent light with a red lens. The light will include a label, "Do Not Move Apparatus When Light is ON".

#### **RADIO ANTENNA INSTALLATION**

There will be two (2) radios. One to be VHF, and one to be 800 Meg, antennas each will be installed on the apparatus at a location determined by the purchaser. The antenna cable will be routed to the cab interior, terminating at the location of the radio mounting bracket.

#### **RADIO PRE-WIRE**

Two locations in the chassis cab interior will be wired with battery power, battery ground, switched power, and radio rebroadcast wires to the siren or PA; and labeled to simplify radio installation. Location of the wires will be one set to the front console and one set behind the rear seats for the radios bases. Each location will have one positive lead, one negative lead, one ignition switched lead and a pair for the radio rebroadcast.

#### **12 VOLT POWER SOURCE**

There will be two (2) 12 volt plug-in utility power connection(s) rated at 20 amps provided and installed in the cab console.

#### **USB CHARGING PORT**

Four (4) USB charging port(s) shall be installed in the cab of the truck for the fire departments accessory devices. The USB charging port shall have two (2) USB connections and shall have a 5 volt, 3.1A output.

#### **BACK UP ALARM**

One (1) solid state back up alarm will be provided at the rear of the apparatus. The back up alarm will be wired to the reverse circuit of the transmission, and will provide an audible alarm to the rear of the apparatus when reverse gear is selected. The alarm will have a volume of 87 to 112 db while in operation.

#### **HEADLIGHT FLASHER**

One (1) Code 3 Model #360HL wig-wag flasher will be provided. This will flash two loads of up to 8 amps each.

#### **ELECTRONIC SIREN**

Whelen CenCom Sapphire Model CCSRNTA3, electronic siren will be provided. The siren control head shall have a 3-position slide switch and 18 push button control head with amplifier control module with pigtails, traffic advisor module and microphone with CCMICX20

#### SIREN SPEAKER

One (1) Code 3 brand, Model #Z100, 100 watt siren speaker will be provided and mounted behind the driver's side of the front bumper. The speaker will be wired to the specified electronic siren controller.

#### **ZONE A/B/D FRONT UPPER -- LIGHTBAR**

One (1) Whelen brand, Freedom IV LED light bar will be provided and installed on the cab roof, facing forward. The light bar will be 55" wide, and shall contain ten (10) flashing Super-LED modules, one red (1) at each forward corner, one amber (1) at each rearward corner, two (2) forward-facing white and four (4) forward facing red. The light bar will have clear lenses on entire front, back and all sides.

An Opticom Infrared Emitter, Model 795H will be mounted in the forward facing center section of the lightbar.

The light bar will be permanently mounted to the cab roof and wired to the "Lightbar" switch in the cab center console.

#### **OPTICOM EMITTER**

One (1) Opticom Infrared System Model 795H Low-Profile Emitterwill be added to the light bar, forward facing. The emitter will be within the lightbar assembly. The Opticom emitter will turn on with the emergency master switch.

#### **ZONE A -- LOWER FRONT WARNING LIGHTS**

Two (2) Whelen M6 Series Model # M6R warning light shall be provided. The warning light shall incorporate Linear Super-LED® and Smart LED® technology. The M6R configuration shall consist of 18 red Super-LEDs and a red optic polycarbonate lens.

The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses.

The specified Whelen M6 lights will be equipped with chrome plastic flange type light bezel mountings.

#### **ZONE B AND D -- INTERSECTION LIGHTS**

Two (2) Whelen M4 Series Model # M4R warning light will be provided. The warning light willincorporate Linear Super-LED® and Smart LED® technology. The M4R configuration will consist of 12 clear Super-LEDs and a polycarbonate lens. The lens color will be red and equipped with chrome plastic bezels. The warning light, with the aid of two screws, will have the ability to be installed as a surface mount warning light.

The lens/reflector assembly will be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens will provide extended life/luster protection against UV and chemical stresses.

The specified Whelen M4 lights will be equipped with chrome plastic flange type light bezel mountings.

## **ZONE B AND D -- LOWER REAR CORNER WARNING LIGHTS**

Two (2) Whelen M6 Series Model # M6# warning light shall be provided mounted rearward. The warning light shall incorporate Linear Super-LED® and Smart LED® technology. The M6# configuration shall consist of 9 red Super-LEDs and 9 amber Super-LED's with a clear optic polycarbonate lens.

The lens/reflector assembly shall be sealed and resistant to water, mointure, dust, and other environmental.

The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses.

The specified Whelen M6 lights will be equipped with chrome plastic flange type light bezel mountings.

#### **ZONE C -- LOWER REAR WARNING LIGHTS**

Two (2) Whelen M6 Series Model # M6RC warning light shall be provided. The warning lights shall incorporate Linear Super-LED® and Smart LED® technology. The M6RC configuration shall consist of 18 red Super-LEDs and a clear optic polycarbonate lens. The warning lights, with the aid of two screws, shall have the ability to be installed as a surface mount warning light.

The M6RC shall utilize optic collimators and a metalized reflector for maximum illumination. The warning light shall include an internal flasher with 164 Scan-Lock<sup>TM</sup> flash patterns including a variety of CA Title 13 compliant patterns, left/right, top/bottom, in/out, and steady burn. The M6RC shall also provide synchronize and low power features. The M6RC shall meet KKK 1822F, NFPA 1901, and SAE specifications.

The lens/reflector assembly shall be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The light engine shall be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC board shall be conformal coated for additional protection.

The warning light is covered by a five year factory warranty.

#### TRAFFIC ADVISOR

Whelen Model #TAD6, traffic advisor will be provided. The 24" traffic advisor {will/shall} have six (6) 2" x 5" 3/16" (5mm) amber LED light heads with amber optic polycarbonate lenses for maximum light spread. The light heads will be fully encapsulated to protect against moisture and vibration. The lights will be mounted within extruded aluminum housing with a black powder coat finish. The traffic advisor will include a remote control head, Model #TACTLD1, which will operate the unit. The control head will have a LED direction indicator and will be back lit for greater visibility.

The traffic advisor will have 20' of 9 conductor cable for wiring purposes and will be surface mounted to the vehicle. The control head will have a bail bracket included in the installation kit for mounting. The traffic advisor will have total dimensions of 2-7/8" high x 2-1/4" wide x 36" long.

#### FRONT MOUNTED ELECTRIC WINCH

A Warn Winch Company 12,000 pound capacities, 12-volt electric winch system will be installed on the front of the apparatus with a 4 way roller will be installed to guide the cable. It will have forward and reverse gears, a three stage planetary gearing and a sliding ring gear clutch that will permit free-spooling for quick unwinding of cable.

The winch will be remote controlled.

A captive roller will be installed to guide the winch cable at front bumper.

Winch shall have 125.00' of 3/8" galvanneal wire rope with hook, pre-spooled on drum.

## **BOISE MOBILE OFF ROAD BUMPER / GRILL GUARD**

A heavy weight black steel bumper with grille/brush guard will be installed on the apparatus. The guard will provide protection for the center portion of the chassis grille and the headlights. It will have provisions for off roads lights and mounting of an electric front winch.

#### **BODY PAINTING SPECIFICATIONS**

The body will feature a single color paint configuration which involves a two-step process thereby ensuring a durable, high gloss finish.

The metal of the body will be acid washed with a phosphoric acid solution in order to remove impurities and etch the metal from a chemical level which will improve adhesion. The body will then be sanded, and cleaned. Any imperfections or defects in the metal will be smoothed with premium body filler and sanded smooth. All body and components will then be primed, then thoroughly sanded with all surfaces meticulously inspected for any imperfections, which will be properly corrected. An epoxy primer will be utilized on all painted and coated surfaces and will prepare the metal for the final paint. The primer will be used to create a first level seal allowing interaction between the subsequent substrates. All surfaces will then be painted with a base coat of premium paint following the guidelines as established by the paint manufacturer. The body will be painted using a single color to match the cab primary color, and then will be buffed to a high gloss finish.

#### INTERIOR COMPARTMENT FINISH

The compartment interiors are to be sealed for leaks and the inside surface areas cleaned and prepped, then finish painted with Zolatone #20-11 (Apollo Gray).

#### **TOUCH-UP PAINT**

Touch-up paint and activator will be furnished with the completed truck at final delivery.

#### **VEHICLE NUMBERING PLATES**

There will be interchangable vehicle numbering plates mounted on each side of the body. Painted the same color as the body, the plates will be held in aluminum frames. Lettering to be provided and location to be determined at pre-construction meeting.

#### **VEHICLE SIGNAGE PLATES**

There will be interchangable vehicle SIGNAGE plates mounted on each side of the body. Painted the same color as the body, the plates will be held in aluminum frames. Lettering to be provided and location to be determined at pre-construction meeting.

#### **MALTESE CROSSES**

Two (2) Scotchlite reflective gold Maltese crosses with black outlining will be applied to the apparatus. The crosses will be 12" in diameter. Purchaser will determine location of Maltese crosses.

#### **CAB AND BODY STRIPING**

The cab and body will have a straight Scotchlite reflective stripe applied horizontally. The stripe will be similar to Castle Rock Fire example in photos showing lettering and color. The logos and stripe shall conform to and be applied in accordance with NFPA standards.

#### COMPARTMENT DOOR EDGE STRIPING

The hinged compartment doors will have a red and white 3M Diamond Grade reflective stripe applied on the edges. The stripe will be a 2" minimum in width.

#### **CHEVRON STRIPING**

The outer rear panels of the body will have Scotchlite brand 6" wide reflective red and amber striping installed over 50% of available area. The Chevron style stripe will be applied at a 45-degree angle, pointing towards the center upper portion of the rear panel.

#### **SUCTION HOSE**

Three (3) 1.5-inch x 8 foot lengths of flexible suction hose will be provided and equipped with lightweight couplings. It will be fit into the suction hose compartment.

#### WHEEL CHOCK MOUNTS

Two (2) Zepher brand, Model #40 mounting brackets, will be provided and installed on the apparatus body. The mounting locations for the chock blocks will be one (1) each side at the rear of apparatus body.

#### FIRE EXTINGUISHER, 10 POUND, RATING

An Ameriex 20 pound, A B C Fire Extinguisher with mounting provisions will be provided.

#### **SPANNER SET**

Red Head Style #148-3 lightweight spanner set with mounting bracket shall be provided and shipped loose with the apparatus. The set shall include one (1) Style 105 hydrant wrench and two (2) Style 101 spanner wrenches.

#### NOZZLE AND HOSE EQUIPMENT MOUNTINGS

The following quantities and sizes of hose adapter and nozzle holders will be provided with the completed apparatus:

- 1. Six (6) 3/4" GHT screw/threaded type
- 2. Seven (7) 1" NPSH screw/threaded type
- 3. Two (2) 1-1/2" NPSH screw/threaded type
- 4. Eleven (11) 1-1/2" NH screw/threaded type
- 5. Two (2) 2-1/2" NH screw/threaded type
- 6. One (1) 2-1/2" NH Akron quick release type

# **DRIP TORCH**

There will be two (2) drip torchs provided and installed.

## **DRIP TORCH HOLDER**

There will be two (2) drip torch holders provided and installed.

# **REFLECTOR**

A set of three (3) triangular reflectors will be provided.

## Exhibit B

# **Change Order Form**

See attached.

## **CHANGE ORDER**

CHANG	GE ORDER NUM	IBER:					
in that of ("BME' follows	certain Sales Agree') and the Town	ement by and betw	orized to change and ween Boise Mobile E Purchaser"), dated th	quipment, Inc.	, an Idaho	corporation	ed
Request	ted Change Order	(s), including mod	ification to Purchase	Price and/or c	ompletion	ı date:	
Line #	Part Number		Description		Qnty	Unit Cost	Ext. Price
						oment Total	
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Name: Title:							
APPRO	VED:						
BME:							
Boise M	lobile Equipment,	Inc., an Idaho cor	poration				
By: Name: Title:							

	4		

#### Exhibit C

# **Final Inspection Report**

See attached.

# **EXHIBIT C:**

## FINAL INSPECTION REPORT

	This Final Inspection Report (this "Report") is made effective this day of
	, 20, by and between Boise Mobile Equipment, Inc., an Idaho corporation
("BME	
("Purch	aser").
	Division beauty and an analysis and an amount to DME that DME to 1 1 1 1 C 11 11
antiafor	Purchaser hereby represents and warrants to BME, that BME has completed and performed to the
batterea	tion of Purchaser all of BME's duties and obligations under that certain Sales Agreement by and
the fall	n BME and Purchaser dated effective the day of, 20, other than owing items which BME agrees to correct as soon as reasonably practicable:
me ton	owing nems which divid agrees to correct as soon as reasonably practicable;
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-	
<del></del>	
Boise N	Mobile Equipment, Inc., an Idaho corporation
201001	Tooks Esquipment, men, an ideale sorporation
By:	
Title	
1100.	
	, a(n)
By:	
Title:	
Tiue.	
Thooh	ove referenced correction items have been corrected to Purchaser's satisfaction.
I ne ab	ove referenced correction items have been corrected to Purchaser's satisfaction.
	2(4)
	, a(n)
D.,,	
By:	
Name:	
Title:	
Date:	

### Exhibit D

# Fire Apparatus Receipt and Acceptance

See attached.



# Final Acceptance Release

A final inspection was performed by workmanship, operation and adherence to Department.		
BME Production #	VIN#_	
The apparatus is accepted for delivery and	payment.	
Exceptions:		
[] NONE		
By signing this Final Inspection Release the the apparatus and/or other damages result been delivered.		
Customer Representative Signature// Date		Mailing Address
()	_	
Phone	/ /20	
BME Representative Signature		Mileage