

**CITY OF STURGEON BAY**  
**FINANCE/PURCHASING & BUILDING COMMITTEE**  
**Tuesday, February 9, 2016**  
**Council Chambers, City Hall - 421 Michigan Street**  
**4:00pm**

1. Roll call.
2. Adoption of agenda.
3. Consideration of: Request to Waive Snow Removal Fees.
4. Consideration of: Replacement/Bids of Sturgeon Bay Fire Dept. Tender #3.
5. Convene in closed session in accordance with the following exemptions:

Deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session. Wis. Stats. 19.85(1)(e)

- a. Consideration of: Purchase of Property.

Move to reconvene in open session to take formal action upon preceding subject of closed session, if appropriate; or to conduct discussion or give further consideration where the subject is not appropriate for closed session consideration. The Committee may adjourn in closed session.

6. Review of unfinished business list.
7. Review bills.
8. Adjourn.

NOTE: DEVIATION FROM THE AGENDA ORDER SHOWN MAY OCCUR.

Notice is hereby given that a majority of the Common Council may be present at this meeting to gather information about a subject over which they have decision-making responsibility. If a quorum of the Common Council does attend, this may constitute a meeting of the Common Council and is noticed as such, although the Common Council will not take any formal action at this meeting.

Posted:  
Date: 02/05/16  
Time: 10:50 a.m.  
By: TM

Finance/Purchasing & Building Committee Members:  
Stewart Fett, Chair  
Jerry Stults, Vice Chair  
Edward Ireland

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WELCOME TO DELICIOUS®

Finance Committee,

I am writing regarding two invoices received for our property located at 845 Egg Harbor Road. We are asking for you to kindly waive the invoices for snow removal. We understand that you tried to contact all property owners, but since the property was just recently purchased and is still vacant, we did not receive any notice.

As with our other business (Culver's), we intend to be great corporate citizens. Now that we have been made aware of the requirement, we have contracted our snow removal service to take care of the property at 845 Egg Harbor road after every snowfall.

We continue to look forward to making improvements to this property that will have a positive impact on Egg Harbor Road, and in that spirit ask your consideration in this matter.

Warm Regards,



Rob Esposito

robeposito8@gmail.com

Cell: 630-946-9142

CITY OF STURGEON BAY  
 421 MICHIGAN ST  
 STURGEON BAY, WI 54235  
 (920) 746-2900

ESPOS, LLC  
 6000 LAKESHORE RD  
 STURGEON BAY WI 54235-

**INVOICE**

Invoice Date: 01/19/2016  
 Invoice #: 2016023  
 Invoice Amt: \$125.00  
 Customer #: ESPOS  
 Due Date: UPON RECEIPT

DESCRIPTION	HRS/QTY	COST/UNIT	AMOUNT
SNOW REMOVAL SIDEWALK SNOW REMOVAL TAX PARCEL 2816216000116 @ 845 EGG HARBOR RD ON 1/15/16	1.00	\$100.00	\$100.00
ADMINISTRATIVE FEE	1.00	\$25.00	\$25.00
SUB-TOTAL:			\$125.00
TAX:			\$ .00
AMT. PAID:			\$ .00
INVOICE TOTAL:			\$125.00

DOOR COUNTY REAL PROPERTY LISTING  
CURRENT ASSESSMENT

01/19/2016

281 6216000116 R 2016

*Old Taco Bell*

845 EGG HARBOR RD

Geo.Loc. 15 281 4 27 26 05 2 04  
000

ESPOS LLC,

**MAIL TO:**

ESPOS LLC

Map#: 0524

**LEGAL DESCRIPTION**

05 27 26 Ac .65

COM

1711.74'S, 416.27'S50\*W,

283.80'S48\*W, 20'N41\*W &

210

.53'S48\*W N1/4 COR SEC

5:S

48\*W150' S41\*E189.79'

N48\*E

150' N41\*W189.79' BG.

DOC# 792075 QCD

DOC# 785995 WD

DOC# 590580 V 692 P790

WD

V 491 P 746

6000 LAKESHORE RD

STURGEON BAY WI 54235

**CURRENT TAX ASSESSMENT AS OF 2015**

CODE	ACRES	LAND	IMPROVE	TOTAL
L2	.65	154000	173000	327000
TOTALS	.65	154000	173000	327000

**COMMENTS**

CLOSE WINDOW

CITY OF STURGEON BAY  
 421 MICHIGAN ST  
 STURGEON BAY, WI 54235  
 (920) 746-2900

ESPOS, LLC  
 6000 LAKESHORE RD  
 STURGEON BAY WI 54235-

**INVOICE**

Invoice Date: 01/13/2016  
 Invoice #: 2016014  
 Invoice Amt: \$125.00  
 Customer #: ESPOS  
 Due Date: UPON RECEIPT  
 Reprint Date: 01/13/2016

DESCRIPTION	HRS/QTY	COST/UNIT	AMOUNT
SNOW REMOVAL	1.00	\$100.00	\$100.00
TAX PARCEL 2816216000116 AT 845 EGG HARBOR RD ON 1/4/16 ADMINISTRATIVE FEE	1.00	\$25.00	\$25.00
			=====
SUB-TOTAL:			\$125.00
TAX:			\$ .00
AMT. PAID:			\$ .00
INVOICE TOTAL:			\$125.00
			=====

DOOR COUNTY REAL PROPERTY LISTING

01/12/2016

CURRENT ASSESSMENT

281 6216000116 R 2016

*Old Taco Bell*

845 EGG HARBOR RD

Geo.Loc. 15 281 4 27 26 05 2 04  
000

ESPOS LLC,

**MAIL TO:**

ESPOS LLC

Map#: 0524

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CODE	ACRES	LAND IMPROVE	TOTAL
L2	.65	154000 173000	327000
TOTALS	.65	154000 173000	327000

**COMMENTS**

CLOSE WINDOW

**Clarizio, Valerie J.**

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**From:** Clarizio, Valerie J.  
**Sent:** Thursday, February 04, 2016 9:18 AM  
**To:** Clarizio, Valerie J.  
**Subject:** FW: 845 Egg Harbor Rd

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**From:** Lenius, Jen  
**Sent:** Monday, February 01, 2016 2:33 PM  
**To:** Bordeaux, Bob  
**Subject:** 845 Egg Harbor Rd

I looked through my notes from the snow storm on December 28<sup>th</sup> and the sidewalk snow removal charges. I looked up the property owner for the Old Taco Bell building at 845 Egg Harbor Road. It is owned by Espos, LLC. 6000 Lakeshore Road. I looked up the address and found a phone number of 920-823-0004. I called on 12/31/15 at 2:15 but there was no answer and no answering machine to leave a message for.

Sincerely,  
*Jennifer Lenius*  
Municipal Services Assistant

City of Sturgeon Bay  
835 N. 14th Avenue  
Sturgeon Bay, WI 54235

920-746-2912  
920-746-2906 (fax)

*While we try to teach our children all about life, our children teach us what life is all about.*

## EXECUTIVE SUMMARY

**TITLE:** Replacement/Bids of Sturgeon Bay Fire Dept. Tender #3

**BACKGROUND:** Request for bids to replace Tender #3, a 1991 GMC TopKick 1800 gallon tender w/500 gpm pump, was advertised in accordance with the City of Sturgeon bay Purchasing Policy. Three (3) bids were sent out with three (3) being returned. The bid specifications included a Freightliner chassis with a custom box, Waterous 1250 gpm pump, 2000 gallon tank and a majority of the equipment to make the unit ready for service.

The Fire Department is looking to use the proceeds from the sale of the current unit to outfit the unit with a radio, headsets, and other required make-ready equipment which will be installed either in house or contracted locally. Funds expended on the truck and equipment will not exceed the net budgeted amount of \$265,000.00

**BIDS RECIEVED:**

<b>CUSTOM FAB &amp; BODY:</b>	<b>\$271,559.00</b>
Freightliner Chassis	\$100,830.00
Apparatus Body including pump	\$170,729.00
Meets all specifications	
Trade In for old Tender #3	\$10,000.00
Add on for brow light	\$677.00
Estimated lead time:	
Chassis:	6 months
Body build/install:	4-5 months
<b>TOTAL BUILD TIME:</b>	<b>10/11 Months from bid acceptance</b>

<b>MARION BODY WORKS:</b>	<b>\$299,910.00</b>
Freightliner Chassis	
Apparatus Body including pump	\$299,910.00
Not all specifications met	
No trade in allowed	
2 different light bar add on amounts	\$2,223.00
<b>Total completion time:</b>	<b>9-10 months</b>

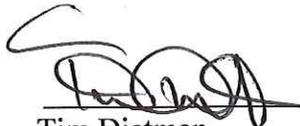
<b>PIERCE MFG:</b>	<b>\$331,775.00</b>
Freightliner Chassis	\$102,000.00
Apparatus Body including pump	\$229,775.00
Prepay discount if paid with contract	\$10,765.00
Price increase end of February	\$8,976.00
Not all specifications met	
No trade in allowed	
<b>Total completion time:</b>	<b>11 months</b>

Of the 3 bids received only 1 has met the specifications and is within budget.

**FISCAL IMPACT:** \$280,000.00 was included in the Fire Department's 2016 Capital Budget for this vehicle, as well as a \$15,000.00 trade in value for a net budget amount of \$265,000.00. Additionally, the 2016 budget shows this item being purchased with debt proceeds.

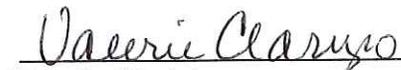
**RECOMMENDATION:** Accept the Bid from CUSTOM FAB & BODY without the trade in allowance and without the add-on of the brow light. Declare the 1991 GMC TopKick 1800 gallon tender w/500 gpm pump surplus, and allow the use of the sale proceeds to be used to purchase a radio, headsets and other required equipment to outfit the new unit in an amount not to exceed the net amount of \$265,000.00 as allocated in the 2016 capital budget.

PREPARED BY:

  
\_\_\_\_\_  
Tim Dietman  
Fire Chief

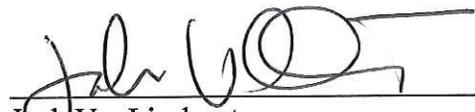
2/3/2016  
Date

REVIEWED BY:

  
\_\_\_\_\_  
Valerie Clarizio  
Finance Director/City Treasurer

2/3/16  
Date

APPROVED BY:

  
\_\_\_\_\_  
Josh VanLieshout  
City Administrator

2/3/16  
Date





## **CITY of STURGEON BAY FIRE DEPARTMENT**

**Tim Dietman  
Fire Chief**

421 Michigan St  
Sturgeon Bay, WI 54235

920-746-2916 Station 920-746-2405 Office  
920-746-6901 FAX  
Email: [tdietman@sturgeonbaywi.org](mailto:tdietman@sturgeonbaywi.org)

### **Competitive Sealed Bids – 01/11/2016**

The Sturgeon Bay Fire Department is seeking sealed bids for:

one (1) 1250 gpm, 2000 gal., Pumper/Tender

Bid must meet or exceed all of the specifications listed. Any change to the specifications such as, but not limited to, makes, models or dimensions must be listed on a separate sheet indicating the change to the specifications and the page number containing the original specification. Bids must include delivery to the Sturgeon Bay Fire Department and any payment options that are available.

Bidder may also provide trade in pricing on a 1991 GMC TopKick, 500gpm pump, stainless steel tank. More info can be obtained and truck can be seen at the Sturgeon Bay Fire Station.

The successful bidder will be required to post a performance security in the amount of 2-1/2 percent (2.5%) of the proposal. Security shall be in the form of a certified check or acceptable guarantee, payable to the City of Sturgeon Bay. The City of Sturgeon Bay Reserves the right to reject any or all bids, parts of any or all bids, or to waive technical errors or omissions in the bid, or to negotiate purchase of products or services which best meet the needs of the City of Sturgeon Bay.

Bids will be received until 2:00 p.m., on February 01, 2016

Send Bids to: City of Sturgeon Bay  
421 Michigan Street  
Sturgeon Bay, WI 54235

Mark Envelope: **Sealed Bid for  
Pumper/Tender**

Any questions or clarifications regarding the bid specifications should be forwarded to:

Fire Chief Tim Dietman  
421 Michigan Street  
Sturgeon Bay, WI. 54235  
(920) 746-2405

**Sturgeon Bay Fire Department**  
Sturgeon Bay, WI  
Pumper-Tender Specification

Dated: 01/11/2016

**INTRODUCTION**  
**PROPOSAL REQUIREMENTS**

**General Information**

Each bidder must indicate his compliance with these specifications by marking "YES" or "NO" in the appropriate column for each paragraph of this specification. Indicating "YES" to a paragraph will mean full compliance; indicating "NO" will mean an exception is being taken. All exceptions must be fully explained on a separate page, titled "Exceptions", giving reference to the page and paragraph where the exception is being taken. Failure to comply with this requirement will result in the bid proposal being rejected. It is the intent of these specifications to secure apparatus constructed to withstand the severe and continuous use encountered during emergency firefighting services. The apparatus will be of the latest type, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained. These specifications detail the requirements for general design criteria of cab and chassis components, fire pump and related components, water tank, fire body, electrical components, painting, and equipment. In evaluating the bid proposals to determine which proposal is the most advantageous, these major items will be considered.

Apparatus and equipment must meet the specific requirements and intent of the requirements as specified herein. All items of these specifications will conform to the character of the proposed apparatus and the purpose for which it is intended. Criteria as specified by the National Fire Protection Association Pamphlet No. 1901, latest edition, entitled "Suggested Specifications for Motor Fire Apparatus", as approved by the American Insurance Association and International Association of Fire Chiefs, is hereby adopted and made a part of these specifications the same as if they were written out in full, insofar as they apply and are not specifically modified in the following detailed specifications. Bidder will provide only that equipment as required in the following specifications. The fire apparatus and equipment to be furnished in meeting these specifications must be the products of an established, reputable fire apparatus and/or equipment manufacturer. Each bidder will furnish satisfactory evidence of the manufacturer's ability to construct, supply service parts and technical assistance for the apparatus specified. They must state the location of the factory and location for post delivery service. Each bidder will supply proof of product liability and facility insurance equal to or exceeding \$1,000,000.00. This will be provided as part of the proposal. The contractor will supply, at the time of delivery, at least one (1) copy of the following documents:

A) The manufacturer's record of apparatus construction details, including the following information:

1. Owners name and address
2. Apparatus manufacturer, model, and serial number
3. Chassis make, model, and serial number
4. GAWR of front and rear axles
5. Front tire size and total rated capacity in pounds
6. Rear tire size and total rated capacity in pounds
7. Chassis weight distribution in pounds with water and manufacturer mounted equipment front and rear
8. Engine make, model, serial number, number of cylinders, bore, stroke, displacement and compression ratio, rated horsepower and related speed per SAE J690 certification of Maximum Net Horsepower for Motor Trucks and Truck Tractors, and no load governed speed.
9. Type of fuel and fuel tank capacity
10. Electrical system voltage and alternator output in amps.
11. Battery make and model, capacity in CCA
12. Transmission make, model and type
13. Pump to drive through the transmission yes or no
14. Engine to pump gear ratio and transmission gear ratio used.
15. Pump make, model, rated capacity in gallons per minute, serial number, number of stages and impeller diameter in inches.
16. Pump transmission make, model and serial number.
17. Priming device type.
18. Type of pump pressure control system.
19. Auxiliary pump make, model, rated capacity in gallons per minute, serial number, number of stages, and impeller diameter in inches.
20. Water tank certified capacity in gallons
21. Paint numbers
23. Company name and signature or responsible company representative

A) If the apparatus has a fire pump, the pump manufacturer's certification of hydrostatic test.

B) If the apparatus has a fire pump, a 3<sup>rd</sup> Party certification of inspection and test for the fire pump.

C) Weight documents from certified scale - showing actual loading on the front axle, rear axle(s) and overall vehicle (with the water tank full but without personnel, equipment and hose) - will be supplied with the complete vehicle to determine compliance with Section 8-1.

D) Written load analysis and results of electrical performance test required in Chapter 9.

E) If the apparatus is equipped with a water tank, the certification of water tank capacity, (Section 15-6).

The chassis will be certified by the apparatus manufacturer as conforming to all applicable federal motor vehicle safety standards in effect at the date of contract. This will be attested to by the attachment of a FMVSS certification label on the vehicle by the contractor who will be recognized as the responsible final manufacturer. The successful bidder will be responsible for preparing and maintaining a record file of parts and assemblies used to manufacture the apparatus. These records will be maintained in the factory of the bidder for a minimum of twenty (20) years. File will contain copies of any and all reported deficiencies, all replacement parts required to maintain the apparatus, and original purchase documents including specifications, contract, invoices, incomplete chassis certificates, quality control reports and final delivery acceptance documents, the purchaser will have access to any and all documents contained in this file upon request.

Bids will be addressed and submitted in accordance with the advertised "Bid Notice". The words "**Fire Apparatus Bid**", the date, and the bid opening time must be stated on the face of the bid envelope. It is the bidder's responsibility to see that their proposals arrive on time. Late proposals, telegram, facsimile or telephone bids will not be considered. Each bid will be accompanied by the bidder's detailed description of the apparatus and equipment it proposes to furnish in the same order as bid specifications. It is the intent of these specifications to cover the furnishing and delivery of a complete and soundly engineered apparatus equipped as specified. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who will be solely responsible for the design and construction of all features. Some items have been specified by brand name or model number. These have been carefully selected because of their reliability and availability for replacement locally. In order to be most responsive, items named, or an item "equal to" the particular item specified by brand name or model, should be contained in the bid proposal. It is the bidder's responsibility to prove to the Purchaser that an item bid as "equal to" a particular specified item, is truly of equal quality, design, and function as the specified item. The Purchaser maintains the right to make a final decision as to the acceptability of an item bid as "equal to" a particular specified item. No exception will be allowed for any of the aforementioned instructions. Bids not submitted in accordance with these instructions will be rejected.

### **Special Conditions**

No bid will be considered unless the bidder can meet the special conditions stated herein.

- 1.) The parent company of the apparatus manufacturer must be 100% owned and operated in the United States of America. NO EXCEPTIONS!
- 2) The complete apparatus must be manufactured in the United States of America.
- 3) Completed apparatus shall meet or exceed current NFPA standards.

### **Prices and Payments**

The bid price will be on an accepted basis by the Fire Department at the manufacturer's location. Total price on bidder's proposal sheet must include all items listed in these specifications. Listing any items contained in the specification as an extra cost item, unless specifically requested to do so in these specifications, will automatically be cause for rejection. Bidder will compute pricing less federal and state taxes. It is understood that any applicable taxes will be added to the proposed prices, unless the purchaser furnishes appropriate tax exempt forms. The chassis shall be part of the total bid package. The chassis price shall be paid upon its completion and delivery to the body builder. The remaining balance shall be paid in full upon acceptance by the fire

Department before the apparatus leaves the manufacturer's facility, unless prior approval is given by the manufacturer owner/management.

All bids shall be valid for a minimum of sixty-60 days.

### **City's Right to Accept or Reject**

The City of Sturgeon Bay reserves the right to accept or reject any bid, any part of a bid, or any combination of two (2) or more bids which may be deemed to be in the best interest of the City. The City further reserves the right to reject any or all bids.

### **Bid Evaluation**

Bids received will be evaluated by Purchaser, Fire Chief and Apparatus Committee. This evaluation will be based as a minimum on the following criteria:

1. Commitment for expedient delivery.
2. Commitment to the general conditions contained herein, including warranty
3. Completeness of the proposal, i.e. the degree which it responds to all requirements and requests for information contained herein.
4. Manufacturing and delivery schedule.
5. Contractor's demonstrated capabilities and qualifications.
6. Equipment supplier and/or local representative's demonstrated capabilities and qualifications.

### **Bid Performance Security**

The lowest responsible bidder awarded the bid will be required to issue a certified check in the amount of 2.5% (two and one half percent) of the bid, payable to the City of Sturgeon Bay, as a guarantee that the bid contract will be executed. The bidder will be required to submit Performance Security within ten (10) days of the notice of award and prior to notice to proceed with equipment acquisition. Failure to do so may result in rejection of bid.

### **Exceptions to Specifications**

Exceptions will be referenced to the paragraph and page of these specifications where the item appears. Drawings, photographs, and technical information about the exception will be included as necessary. Any exceptions may be considered during the evaluation process, and the decision will be final. Proposals taking total exceptions to specifications will not be accepted.

### **Technical Information**

Bidder will furnish free of charge, upon request, technical information, graphs, charts, photographs, engineering diagrams, steering geometry, drive train certifications, instruction guides, or other documentation as requested to show that the equipment offered fully complies with these specifications.

### **Delivery Time**

Each bidder will state the completed apparatus delivery time based on the number of calendar days, starting from the date the sales contract is signed and accepted by the apparatus manufacturer.

### **User's List**

Each bidder will include a current "User's List" with a minimum of fifteen (15) units that are within 300 miles of the purchaser. This list will include customer name, person to contact, address and telephone number. Failure to include this list will result in rejection of the bid.

### **Material and Workmanship**

All equipment furnished will be guaranteed to be new and of current manufacture, to meet all requirements of these specifications, and to be in intended use condition at time of delivery. All workmanship will be of high quality and accomplished in a professional manner so as to insure a functional apparatus with a pleasing, aesthetic appearance.

### **Warranty**

The apparatus shall be warranted and free from defects in materials and workmanship under normal use and service for a period of one (1) year on the complete apparatus. Apparatus body components shall be warranted from the individual components manufacturer.

*Body:* There shall be a 10-year or 100,000 mile warranty on the structural integrity of the aluminum apparatus body to the original purchaser. There shall be a copy of the body warranty provided with the completed apparatus at delivery.

*Paint/Corrosion:* The apparatus shall be supplied with a seven (7) year NON-PRORATED paint and corrosion warranty from the delivery date of the apparatus.

*Plumbing:* The apparatus shall be supplied with a ten (10) year plumbing warranty from the delivery date of the apparatus.

*Tank:* The tank shall have a lifetime warranty provided from the tank manufacturer.

*Pump:* The fire pump shall have a five (5) year standard warranty provided by the pump manufacturer.

*Chassis:* The apparatus chassis will be provided with a warranty through the chassis builder.

### **Contract Award**

The Purchaser reserves the right to reject any or all bids deemed to be unresponsive. The Purchaser also reserves the right to waive any informalities, irregularities and technicalities in procedure. The Purchaser reserves the right, before awarding the contract, to require a bidder to submit evidence of his qualifications as may be deemed necessary. Documentation which may be required is financial soundness, technical competency, and other pertinent qualifications of a bidder, including past performance (experience) with the Purchaser. Upon award of contract, the sales contract will be between the Purchaser and the manufacturer of the apparatus. Contracts between the Purchaser and a sales representative, dealer, distributor, or agent of the apparatus manufacturer will not be acceptable. (No Exceptions.)

### **Sales Engineer**

The successful bidder will designate a competent individual, acceptable to the purchaser, to perform the contractor's sales engineer functions. The sales engineer will provide a single point interface between the purchaser and the contractor on all matters concerning the contract.

### **Drawings**

Detailed blue prints will be required in the bid package. The drawing must be of the exact vehicle being bid and must show the following features:

- 1) Right side of vehicle
- 2) Left side of vehicle
- 3) Top of vehicle
- 4) Rear of vehicle

Detailed blue prints and written specifications will be approved by the purchaser prior to any metal being sheared or cut for the unit. The purchaser, manufacturer's representative and the apparatus manufacturer will each have a copy of this blue print and specifications. Upon purchaser's approval, this print and specifications will become a part of the total contract. Drawing will show, but is not limited to, such items as the chassis being utilized, lights, sirens, all compartment locations and dimensions, special suction, discharges, etc. Blue print will be a visual interpretation of the unit as it is to be supplied.

### **Delivery**

Delivery of the apparatus to the Sturgeon Bay Fire Department will be made by department personnel after the inspection and acceptance at the manufacturer's facility, unless prior arrangements are made with the sales engineer and/or manufacturer.

### **Instruction Manuals/Drawings, Schematic**

In accordance with standard commercial practices, applicable to each vehicle (including body and special equipment) furnished under the contract, the following listed manuals and schematics, in the quantity specified, will be provided at time of delivery of each vehicle. The contractor will supply at time of delivery, at least one copy of a complete operation and service manual covering the complete apparatus as delivered and accepted. The manual will contain the following:

- A) Descriptions, specifications, and ratings of chassis and pump.
- B) Wiring diagrams
- C) Lubrication charts
- D) Operating instructions for the chassis, any major components such as a pump and any auxiliary systems.
- E) Instructions regarding the frequency and procedures recommended for maintenance.
- F) Parts replacement information

### **Vehicle Fluids Plate**

As required by N.F.P.A., the contractor will affix a permanent plate in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle: A permanent plate in the driving compartment will specify the quantity and type of the following fluids used in the

vehicle:

- A) Engine oil
- B) Engine coolant
- C) Chassis transmission fluid
- D) Pump transmission lubrication fluid
- E) Pump primer fluid
- F) Drive axle(s) lubrication fluid
- G) Air-conditioning refrigerant
- H) Air-conditioning lubrication oil
- I) Power steering fluid
- J) Cab tilt mechanism
- K) Equipment rack fluid
- L) Generator system lubricant

**Principle Apparatus Dimensions & G.V.W.R.**

The principle dimensions of the completed apparatus will not exceed the following **maximum** acceptable dimensions:

- OVERALL LENGTH: 420" (35ft)
- OVERALL WIDTH: 102"
- OVERALL HEIGHT: 132"
- WHEELBASE: 267"

The axle and total weight ratings of the completed apparatus will not be less than the following minimum acceptable weight ratings:

- MINIMUM FRONT G.A.W.R.: 16,000 lbs.
- MINIMUM REAR G.A.W.R.: 30,000 lbs.
- MINIMUM TOTAL G.V.W.R.: 46,000 lbs.

Each proposal must include the principle dimensions, front G.A.W.R., rear G.A.W.R., and total G.V.W.R. of the proposed apparatus. Additionally, all bidders will provide a weight distribution of the fully loaded, completed vehicle; this will include a filled water tank, specified hose load, 2,000 lbs. of miscellaneous equipment, and an equivalent personnel load of 200 lbs. per seating position.

**Chassis Specification**

Description	Weight Front	Weight Rear
Price Level		
M2 PRL		
Data Version		
SPECPRO21		
Vehicle Configuration		

Description	Weight Front	Weight Rear
M2 106 CONVENTIONAL CHASSIS 2017 MODEL YEAR SPECIFIED SET BACK AXLE - TRUCK STRAIGHT TRUCK PROVISION LH PRIMARY STEERING LOCATION	5,759	3,503
<b>General Service</b>		
TRUCK CONFIGURATION DOMICILED, USA (EXCLUDING CALIFORNIA AND CARB OPT-IN STATES) RESCUE AND EMERGENCY SERVICE GOVERNMENT BUSINESS SEGMENT LIQUID BULK COMMODITY TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS MAXIMUM 8% EXPECTED GRADE SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE MEDIUM TRUCK WARRANTY EXPECTED FRONT AXLE(S) LOAD : 16000.0 lbs EXPECTED REAR DRIVE AXLE(S) LOAD : 30000.0 lbs EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 46000.0 lbs		
<b>Truck Service</b>		
RESCUE - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in		
<b>Engine</b>		
CUM ISL 350 HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM	640	30

Description	Weight Front	Weight Rear
<b>Electronic Parameters</b>		
68 MPH ROAD SPEED LIMIT CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT PTO MODE ENGINE RPM LIMIT - 1100 RPM PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED PTO RPM WITH CRUISE SET SWITCH - 700 RPM PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM PTO MODE CANCEL VEHICLE SPEED - 5 MPH PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND ONE REMOTE PTO SPEED REMOTE PTO SPEED 1 SETTING - 900 RPM PTO MINIMUM RPM - 700 REGEN INHIBIT SPEED THRESHOLD - 0 MPH		
<b>Engine Equipment</b>		
2016 ONBOARD DIAGNOSTICS/2010 EPA/CARB/GHG14 NO 2008 CARB EMISSION CERTIFICATION STANDARD OIL PAN ENGINE MOUNTED OIL CHECK AND FILL ONE PIECE VALVE COVER SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER DR 12V 275 AMP 40-SI BRUSHLESS PAD ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE (2) ALLIANCE MODEL 1231, GROUP 31, 12 VOLT MAINTENANCE FREE 2250 CCA THREADED STUD BATTERIES	10	

Description	Weight Front	Weight Rear
BATTERY BOX FRAME MOUNTED STANDARD BATTERY JUMPERS SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER CAB WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN		
NON-POLISHED BATTERY BOX COVER		
POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT	8	
CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR AIR COMPRESSOR DISCHARGE LINE		
GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING		
CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY TURBO WITH ON/OFF DASH SWITCH	20	
RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL	10	5
AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE EXITING FORWARD OF REAR TIRES ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH STANDARD EXHAUST SYSTEM LENGTH		

Description	Weight Front	Weight Rear
RH HORIZONTAL TAILPIPE, EXIT FORWARD OF REAR TIRES AT 90 DEGREES 6 GALLON DIESEL EXHAUST FLUID TANK 100 PERCENT DIESEL EXHAUST FLUID FILL LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION DIESEL EXHAUST FLUID PUMP MOUNTED AFT OF DIESEL EXHAUST FLUID TANK STANDARD DIESEL EXHAUST FLUID TANK CAP HORTON DRIVEMASTER ON/OFF FAN DRIVE AUTOMATIC FAN CONTROL WITHOUT DASH SWITCH, NON ENGINE MOUNTED CUMMINS SPIN ON FUEL FILTER COMBINATION FULL FLOW/BYPASS OIL FILTER 1100 SQUARE INCH ALUMINUM RADIATOR ANTIFREEZE TO -34F, ETHYLENE GLYCOL PRE- CHARGED SCA HEAVY DUTY COOLANT GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES RADIATOR DRAIN VALVE LOWER RADIATOR GUARD ALUMINUM FLYWHEEL HOUSING ELECTRIC GRID AIR INTAKE WARMER DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH	20	20
<b>Transmission</b>		

Description	Weight Front	Weight Rear
ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION	200	60

**Transmission Equipment**

ALLISON VOCATIONAL PACKAGE 170 - AVAILABLE ON 3000/4000 PRODUCT FAMILIES WITH VOCATIONAL MODEL RDS AND EVS  
 ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES  
 PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY  
 SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY  
 NEUTRAL AT STOP - DISABLED, FUELSENSE - DISABLED  
 VEHICLE INTERFACE WIRING CONNECTOR WITH PDM AND NO BLUNT CUTS, AT BACK OF CAB  
 ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED  
 (2) CUSTOMER INSTALLED CHELSEA 277 SERIES PTO'S PTO MOUNTING, LH SIDE AND TOP RH SIDE OF MAIN TRANSMISSION  
 MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN

Description	Weight Front	Weight Rear
PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED TRANSMISSION PROGNOSTICS - ENABLED 2013 WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK TRANSMISSION OIL CHECK AND FILL WITH CROSSOVER TO CLEAR LH PTO AND DIRECT MOUNT PUMP SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)		
<b>Front Axle and Equipment</b>		
DETROIT DA-F-16.0-5 16,000# FL1 71.0 KPI/3.74 DROP SINGLE FRONT AXLE	190	
MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT BRAKES, DOUBLE ANCHOR, FABRICATED SHOES FIRE AND EMERGENCY SEVERE SERVICE, NON- ASBESTOS FRONT LINING CONMET CAST IRON FRONT BRAKE DRUMS SKF SCOTSEAL PLUS XL FRONT OIL SEALS VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL STANDARD SPINDLE NUTS FOR ALL AXLES MERITOR AUTOMATIC FRONT SLACK ADJUSTERS	10	
TRW TAS-85 POWER STEERING POWER STEERING PUMP 2 QUART SEE THROUGH POWER STEERING RESERVOIR SYNTHETIC 75W-90 FRONT AXLE LUBE	40	
<b>Front Suspension</b>		



Description	Weight Front	Weight Rear
HALDEX AUTOMATIC REAR SLACK ADJUSTERS ORGANIC SAE 80/90 REAR AXLE LUBE		
<b>Rear Suspension</b>		
30,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD SPRING SUSPENSION - 1.50" AXLE SPACER STANDARD AXLE SEATS IN AXLE CLAMP GROUP FORE/AFT CONTROL RODS		230        10
<b>Brake System</b>		
AIR BRAKE PACKAGE WABCO 4S/4M ABS WITH TRACTION CONTROL REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES FIBER BRAID PARKING BRAKE HOSE STANDARD BRAKE SYSTEM VALVES STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM STD U.S. FRONT BRAKE VALVE RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE BW AD-9 BRAKE LINE AIR DRYER WITH HEATER AIR DRYER MOUNTED INBOARD ON LH RAIL STEEL AIR BRAKE RESERVOIRS CLEAR FRAME RAILS FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, BOTH RAILS OUTBOARD BW DV-2 AUTO DRAIN VALVE WITHOUT HEATER ON ALL TANK(S)	20	

Description	Weight Front	Weight Rear
<b>Trailer Connections</b>		
UPGRADED CHASSIS MULTIPLEXING UNIT UPGRADED BULKHEAD MULTIPLEXING UNIT		
<b>Wheelbase &amp; Frame</b>		
6950MM (274 INCH) WHEELBASE 7/16X3-9/16X11-1/8 INCH STEEL FRAME (11.11MMX282.6MM/0.437X11.13 INCH) 120KSI	610	360
1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT 1600MM (63 INCH) REAR FRAME OVERHANG	230	460
FRAME OVERHANG RANGE: 61 INCH TO 70 INCH CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 161.2 in CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 158.2 in CALC'D FRAME LENGTH - OVERALL : 366.39 CALC'D SPACE AVAILABLE FOR DECKPLATE : 161.2 in CALCULATED FRAME SPACE LH SIDE : 228.15 in CALCULATED FRAME SPACE RH SIDE : 217.21 in SQUARE END OF FRAME FRONT CLOSING		
CROSSMEMBER LIGHTWEIGHT HEAVY DUTY ALUMINUM ENGINE	-12	
CROSSMEMBER STANDARD MIDSHIP #1 CROSSMEMBER(S) STANDARD REARMOST CROSSMEMBER STANDARD SUSPENSION CROSSMEMBER		

Description	Weight Front	Weight Rear
<b>Chassis Equipment</b>		
THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE ENDS	30	
FRONT TOW HOOKS - FRAME MOUNTED BUMPER MOUNTING FOR SINGLE LICENSE PLATE FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS GRADE 8 THREADED HEX HEADED FRAME FASTENERS	15	
<b>Fuel Tanks</b>		
50 GALLON/189 LITER SHORT RECTANGULAR ALUMINUM FUEL TANK - LH RECTANGULAR FUEL TANK(S) PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS FUEL TANK(S) FORWARD PLAIN STEP FINISH FUEL TANK CAP(S) ALLIANCE FUEL FILTER/WATER SEPARATOR WITH HEATED BOWL AND PRIMER PUMP EQUIFLO INBOARD FUEL SYSTEM HIGH TEMPERATURE REINFORCED NYLON FUEL LINE	20	
<b>Tires</b>		
MICHELIN XZA2 ENERGY 315/80R22.5 20 PLY RADIAL FRONT TIRES	56	
MICHELIN XZY-3 315/80R22.5 20 PLY RADIAL REAR TIRES		160
<b>Hubs</b>		
CONMET PRESET PLUS IRON FRONT HUBS WEBB IRON REAR HUBS		70
<b>Wheels</b>		

Description	Weight Front	Weight Rear
ALCOA 89465X 22.5X9.00 10- HUB PILOT 5.96 INSET ALUMINUM DISC FRONT WHEELS	-40	
ALCOA 89465X 22.5X9.00 10- HUB PILOT 5.96 INSET ALUMINUM DISC REAR WHEELS POLISHED FRONT WHEELS; OUTSIDE ONLY POLISHED REAR WHEELS; OUTSIDE OF OUTER WHEELS ONLY FRONT WHEEL MOUNTING NUTS REAR WHEEL MOUNTING NUTS		-80

**Cab Exterior**

154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB AIR CAB MOUNTS	430	250
CAB ROOF REINFORCEMENTS FOR ROOF MOUNTED COMPONENTS LH AND RH EXTERIOR GRAB HANDLES WITH SINGLE RUBBER INSERT HOOD MOUNTED CHROMED PLASTIC GRILLE CHROME HOOD MOUNTED AIR INTAKE GRILLE FIBERGLASS HOOD TUNNEL/FIREWALL LINER VALVE AND PLUMBING FOR CUSTOMER FURNISHED AIR HORN, PIPING CAPPED AT FIREWALL DUAL ELECTRIC HORNS DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME REAR LICENSE PLATE MOUNT END OF FRAME	2	

Description	Weight Front	Weight Rear
INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL		
LED AERODYNAMIC MARKER LIGHTS		
DAYTIME RUNNING LIGHTS		
INTEGRAL STOP/TAIL/BACKUP LIGHTS		
STANDARD FRONT TURN SIGNAL LAMPS		
DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH REMOTE		
DOOR MOUNTED MIRRORS		
102 INCH EQUIPMENT WIDTH LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS		
MOUNTED UNDER PRIMARY MIRRORS		
RH DOWN VIEW MIRROR		
STANDARD SIDE/REAR REFLECTORS		
COMPOSITE EXTERIOR SUN VISOR	10	
63X14 INCH TINTED REAR WINDOW		
TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS		
RH AND LH ELECTRIC POWERED WINDOWS, PASSENGER SWITCHES ON DOOR(S)	8	
TINTED WINDSHIELD 2 GALLON WINDSHIELD WASHER RESERVOIR WITH FLUID LEVEL INDICATOR, FRAME MOUNTED		
WHITE WINTERFRONT	2	
<b>Cab Interior</b>		
OPAL GRAY VINYL INTERIOR		

Description	Weight Front	Weight Rear
MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR		
MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR		
BLACK MATS WITH SINGLE INSULATION		
FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING		
IN DASH STORAGE BIN (2) CUP HOLDERS LH AND RH DASH		
GRAY/CHARCOAL FLAT DASH SMART SWITCH EXPANSION MODULE		
HEATER, DEFROSTER AND AIR CONDITIONER		
STANDARD HVAC DUCTING MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH		
STANDARD HEATER PLUMBING DENSO HEAVY DUTY AIR		
CONDITIONER COMPRESSOR BINARY CONTROL, R-134A		
PREMIUM INSULATION SOLID-STATE CIRCUIT		
PROTECTION AND FUSES 12V NEGATIVE GROUND		
ELECTRICAL SYSTEM DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER		
LH AND RH ELECTRIC DOOR LOCKS		
(1) 12 VOLT POWER SUPPLY IN DASH		

Description	Weight Front	Weight Rear
SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009 COMPLIANT SEAT SENSOR	50	
SEATS INC 911 UNIVERSAL SERIES HIGH BACK NON SUSPENSION PASSENGER SEAT WITH UNDERSEAT STORAGE AND NFPA 1901-2009 COMPLIANT SEAT SENSOR	25	10
SEATS INC 911 UNIVERSAL SCBA NON SUSPENSION LH AND RH REAR PASSENGER SEATS WITH UNDER SEAT STORAGE AND NFPA 1901-2009 COMPLIANT SEAT SENSOR LH AND RH INTEGRAL DOOR PANEL ARMRESTS GRAY VINYL DRIVER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST GRAY VINYL FRONT PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST GRAY VINYL REAR PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST 3 POINT HIGH VISIBILITY ORANGE RETRACTOR DRIVER, RH FRONT AND LH AND RH REAR PASSENGER SEAT BELTS WITH NFPA 1901-2009 COMPLIANT SENSOR AND DASH HARNESS TILT/TELESCOPING STEERING COLUMN 4-SPOKE 18 INCH (450MM) STEERING WHEEL DRIVER AND PASSENGER INTERIOR SUN VISORS	140	40

Description	Weight Front	Weight Rear
<b>Instruments &amp; Controls</b>		
GRAY DRIVER INSTRUMENT PANEL GRAY CENTER INSTRUMENT PANEL ENGINE REMOTE INTERFACE WITH PARK BRAKE AND NEUTRAL INTERLOCKS BLACK GAUGE BEZELS LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM 2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES DASH MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS 97 DB BACKUP ALARM ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL IGNITION SWITCH WITH NON REMOVABLE KEY ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH 2 INCH ELECTRIC FUEL GAUGE ENGINE REMOTE INTERFACE FOR REMOTE THROTTLE ENGINE REMOTE INTERFACE CONNECTOR AT BACK OF CAB ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE 2 INCH TRANSMISSION OIL TEMPERATURE GAUGE ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY		3

Description	Weight Front	Weight Rear
CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS ENHANCED STABILITY CONTROL NO LANE DEPARTURE WARNING SYSTEM ELECTRIC ENGINE OIL PRESSURE GAUGE OVERHEAD INSTRUMENT PANEL POWER AND GROUND WIRING PROVISION OVERHEAD CB WIRING ONLY TO ROOF/OVERHEAD CONSOLE; NO MOUNTING PROVISION ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER STANDARD VEHICLE SPEED SENSOR ELECTRONIC 3000 RPM TACHOMETER NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY IGNITION SWITCH CONTROLLED ENGINE STOP (2) OVERHEAD MOUNTED LANYARD CONTROLS: (1) OFFICER AIR HORN AND (1) DRIVER AIR HORN DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR	5	

	Weight Front	Weight Rear
<b>Description</b>		
SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS NO MISCELLANEOUS GAUGES		
<b>Design</b>		
PAINT: ONE SOLID COLOR		
<b>Color</b>		
CAB COLOR A: L3781EB VIPER RED ELITE BC BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT NO FUEL TANK CABINET PAINT SUNVISOR PAINTED SAME AS CAB COLOR A		
<b>Certification / Compliance</b>		
U.S. FMVSS CERTIFICATION, EXCEPT SALES CABS AND GLIDER KITS		
<b>Secondary Factory Options</b>		
CORPORATE PDI CENTER IN- SERVICE ONLY		

**TOTAL VEHICLE SUMMARY**

<b>Weight Summary</b>			
	Weight Front	Weight Rear	Total Weight
Factory Weight <sup>+</sup>	8878 lbs	5561 lbs	14439 lbs
Total Weight <sup>+</sup>	8878 lbs	5561 lbs	14439 lbs

**Chassis Modifications**

### **Cab Step Overlay**

The chassis cab entrance step at the driver's side shall be removed and replaced with a step of 1/8" "embossed" aluminum diamond plate. This step shall also include a vertical riser to cover the void between the step and the bottom of the cab doorjamb. The step will be designed so that the first step is no further than 24" from the ground. An additional stepping surface will be incorporated into the step so that there is less than 18" from the first step to the cab.

### **Fuel Tank Overlay**

The chassis furnished step tank shall be covered with 1/8" "embossed" aluminum diamond plate. A step pocket shall be furnished in the cover to match the fuel step pocket. The step areas shall have an open type surface to facilitate draining of accidentally spilled fuel. A nametag shall be provided warning what type of fuel to be used.

### **Front Bumper Extension**

There shall be a front bumper extension provided on the chassis, which shall extend out the bumper approximately 24" in length. The extension shall be built off the chassis frame. There shall be an aluminum diamond plate gravel shield bolted to the framework to cover the front bumper extension. The chassis front tow hooks shall also be moved out with the bumper to the extended position.

### **Bumper Compartments and Covers**

There shall be three (3), recessed compartments located in the front bumper extension with drain holes in the corners and lined with compartment matting. There shall be one (1) large compartment at the center and one (1) smaller compartment at each outer portion of the bumper extension. There shall be sealed aluminum diamond plate covers installed for each compartment. The covers shall be attached at the rear of the compartments with a stainless steel hinge and the front shall be supplied with a push button trigger latch. The covers shall also be supplied with pneumatic lift assists to hold the covers open when in use.

### **Aluminum Map Box**

There shall be a custom designed map box installed onto the rear of the center electrical control console in the cab of the apparatus. The map box shall be designed to fit a customer specified amount of binders and folders in an easily accessible location from the officer's seat. The map box shall be constructed from aluminum diamond plate to match the electrical control console.

### **Crew Cab Center Console**

There shall be an additional console in the rear crew cab of the apparatus. This console shall be in place of the center rear seat in the crew cab. This console shall be fabricated from aluminum diamond plate and shall be a storage location for miscellaneous items. The console will be supplied with two (2) 110v shoreline powered receptacles, storage location for a Thermal Imaging Camera, gas detector and flashlights. An additional SCBA bracket with restraint strap will also be installed onto this console. The exact layout of this console will be determined by the fire department at the pre-construction meeting.

### **Chassis Exhaust**

The chassis exhaust shall be properly extended with exhaust pipe, elbows, and clamps to a position directly ahead of the right rear wheel. Vendor shall provide MAGNA GRIP adaptor.

### **Rear Mudflaps**

There shall be heavy duty rubber mudflaps installed behind each rear wheel.

### **Shift Pad Cover**

There shall be a cover installed over the shift pad of the chassis transmission push button shift control. The cover shall be a clear Lexan material adhered to a piece of stainless steel hinge and attached to the shift tower in a manner that will not interfere with the shift pad function.

### **Kussmaul Pump Plus 1000 Super Kit**

There shall be installed one (1) Kussmaul Pump Plus 1000 Super Kit, model 091-9-1000-S-KIT, on the apparatus. The Pump Plus 1000 Super Kit consists of one (1) Auto Pump 12V air compressor, one (1) Pump Plus 1000 battery charger/conditioner, one (1) Super Auto Eject shoreline inlet and one (1) Auto Charge indicator. This Pump Plus 1000 Super Kit will keep the chassis air system, batteries and components at a charged and ready state while connected to the shoreline inlet. The Super Auto Eject shall allow the shoreline cable to be automatically ejected from the vehicle upon activation of the chassis starter. The Super Auto Eject is made up of a completely sealed box with a snap tight cover to prevent corrosion to hamper the performance of the Auto Eject. The Super Auto Eject shall be supplied with a "Red" cover.

The Auto Eject receptacle shall be mounted in the flat surface directly behind the driver's door of the chassis. The charge indicator shall be mounted directly above the Super Auto Eject receptacle.

### **Air Eject**

There shall be a Kussmaul Air Eject installed on the vehicle on the cab near the driver's door area and plumbed to the chassis air system. The Air Eject shall keep the vehicles air brake system at a charged and ready state. The Air Eject shall be automatically disconnected when the vehicle's starter is activated. The air eject shall also be supplied with the weatherproof adapter kit.

### **120-Volt Receptacle**

There shall be one (1) 120-volt/15-amp duplex household style receptacle installed in the cab of the apparatus on the center control console. The receptacles shall be wired to the shoreline inlet for operation.

### **Grover Air Horns**

There shall be a set of Grover Stuttertone air horns installed on the sides of the engine hood of the apparatus, one (1) each side. The air horns shall be plumbed to the chassis air system with 1/4" nylon tubing and a pressure protection valve shall also be used. The horns shall be controlled in the cab with foot switch controls near the driver and officer seats. There shall also be a lanyard control in the cab near the driver seat position for the air horns.

### **Battery Jump Posts**

There shall be a set of battery jumper posts supplied and installed at the step area adjacent to the battery storage location. The jumper posts allow the vehicle to be jump started in the event of an emergency due to battery failure.

### **Tow Eyes**

There shall be a set of tow eyes at the rear of the body just above the rear step. The tow eyes shall be made from  $\frac{3}{4}$ " x 4" steel with a 2" x 4" oval eye center. They shall be bolted directly to the chassis frame and also reinforced for superior strength. The tow eyes and framework shall be finish painted black.

### **Hitch Receiver**

There shall be a minimum of a Class III hitch receiver supplied and installed under the rear tailboard. The hitch receiver shall be supplied with a 2" receiver tube.

There shall also be a seven-prong trailer-wiring plug located at the rear receiver location.

### **Radio Antenna**

There shall be one (1) two-way radio antenna installed through the roof of the chassis cab towards the rear. The antenna shall be customer supplied and delivered with the customer's chassis for installation.

### **12 Volt Power Wire**

There shall be two (2) sets of spare 12 volt wires located in the cab of the apparatus near the electric control console. The wires shall be labeled by the manufacturer and this wire shall be used for radio installation at a later date by the radio installation company.

### **Wheel Chocks**

There shall be a pair of Worden heavy-duty aluminum wheel chocks supplied with the apparatus with horizontal mounting brackets. The wheel chocks shall be supplied with the apparatus at delivery.

### **SCBA Bracket**

There shall be four (4) Ziamatic Corporation model ULLH Load and Lock SCBA brackets with pull release supplied and installed in the cab. There shall be one (1) bracket bolted into each of the rear cab SCBA seat backs and the third and fourth bracket onto the rear of the console in the rear of the cab. These brackets shall be NFPA compliant for crew compartment seating locations. There shall be four (4) SCBA mask bags installed, one (1) at each location in conjunction with the LOCK SCBS brackets.

### **Helmet Security**

There shall be Zico UHH-1 helmet security devices installed in the chassis cab to secure the firefighters helmets, one (1) per seating location. These devices shall prevent the helmets from being projectiles in the event of an accident. The exact location shall be determined by the fire department.

### **Tire Pressure Monitoring System**

There shall be a tire pressure monitoring system installed on each of the apparatus wheels to monitor the air pressure in each wheel. The sensor shall be a valve stem mounted device, similar to a valve stem cap, manufactured from chrome plated brass material.

The sensor shall be set to the tire pressure of the wheel when installed onto the wheels valve stem for pressure ratings up to 120PSI.

### **Fire Pump**

#### **Pump Test**

The pump shall be tested to NFPA standards at the manufacturer's pump test location by an independent third party company before delivery of the completed apparatus. A copy of the pump test shall be provided to the department and a stamped plate shall be installed on the operator's panel indicating the pump test ratings, pressures, and RPM's. The pump shall be tested at the following capacities:

1250 GPM @ 150 PSI  
1250 GPM @ 165 PSI  
875 GPM @ 200 PSI  
625 GPM @ 250 PSI

#### **Waterous Model CX Series Fire Pump 1250 GPM**

The pump shall be a Waterous CX 1250 GPM series pump with the "C20" series transmission.

#### **Casing**

Two-piece, horizontally split, high tensile, close grained gray iron or bronze (optional). All passageways are carefully matched to assure the very best hydraulic flow characteristics.

#### **Wear Rings**

Bronze, reverse flow, labyrinth-type replaceable wear rings increase pump life and keep maintenance costs to a minimum.

#### **Impellers**

Bronze impeller, balanced both mechanically and hydraulically for vibration-free operation. Flame plated impeller hubs shall be installed to assure longer life despite the presence of abrasives in the water supply.

### **Impeller Shaft**

Heat treated stainless steel is ground at all critical areas, polished under packing. An exclusive two-piece impeller shaft allows separation of the transmission from the pump without disassembling either component. This simplifies repair procedures, resulting in less down time.

### **Bearings**

Three-deep-groove anti-friction ball bearings, located outside the pumping chamber, give support and proper alignment to the impeller shaft assembly. Bearings are oil or grease lubricated completely separated from the water being pumped, and protected by seal housings, flinger rings and oil seals.

### **Shaft Seal**

The pump will be equipped with ceramic spring-loaded mechanical seals.

### **Flinger Rings**

Located on the impeller shaft between seal housings and bearing housings, flinger rings provide added protection and keep water and foreign matter out of the bearings.

### **Oil Seals**

Standard lip type for lubrication and additional bearing protection from dirt and water.

### **Pump Characteristics**

The Waterous CX pump meets or exceeds all requirements of NFPA standards.

### **Pump Transmission Specifications**

The fire pump transmission shall be the "C20" series transmission built by Waterous.

### **Housings**

Pump transmission housing shall be cast aluminum construction.

### **Shafts**

Drive line shafts made from alloy steel forgings, hardened and ground to size, available in 2 inch SAE 10-spline, 2 inch 38 tooth involute spline or 2.350 inch 46 tooth involute spline, depending on torque rating required.

### **Drive and Driven Sprockets**

Made of steel. All sprockets are carburized and hardened, and have ground bores.

### **Drive Chain**

Morse HV® high strength involute from chain.

### **Bearings**

Deep groove, anti-friction ball bearings, positive oil splash and pressure lubricated throughout.

### **Pressure Lubrication System**

An impeller shaft driven oil pump delivers lubricant to an integral spray header that completely pressure lubricates the drive chain. This unique transmission design eliminates the need for auxiliary cooling.

### **Drive Lines**

The original drive lines furnished with the chassis shall be reworked to fit the pump installation. The tube, if needed to be lengthened, shall be completely replaced. Splicing of the tube is not acceptable. Tube shall be DOM (drawn over mandrel) made for drive shafts.

They shall be electronically MIG welded by a certified welder on a specially designed drive shaft fabrication machine. After welding, the drive shaft shall be checked for straightness and be dynamically balanced by computerized machinery. All drive shafts shall be balanced.

### **Shift Mechanism**

Constant-mesh, two-position sliding collar that engages all teeth simultaneously. The control shall be an in-cab controlled pneumatic shift with identification/instruction plate. A patented internal locking mechanism provides a positive lock in PUMP or ROAD position.

### **Pump Safety Features**

When the apparatus is equipped with an automatic transmission, an interlock board shall be provided to ensure that the pump drive system components are properly engaged in the pumping mode of operation, so that the pumping system can be safely operated from the pump operator's position.

Any control device used in the plumbing system power train between the engine and the pump shall be equipped with a means to prevent unintentional movement of the control device from its set position.

A plate indicating the chassis transmission is provided and where the pump is driven by a transmission thru a pump gearbox (mid-ship) and is used for stationary pumping with the chassis transmission in gear:

A: Two (2) green indicator lights shall be located in the driving compartment. One (1) indicator light shall be energized when the pump drive has been engaged and shall be labeled "PUMP ENGAGED". The second light shall be energized when both the pump drive has been engaged and the chassis transmission is in high gear lock-up and shall be labeled "OK TO PUMP".

B: One (1) green indicator light on the pump operator's panel shall be provided. The green light shall be energized when both the pump drive has been engaged and the chassis transmission is in high gear lock up. The green light on the pump operator's panel shall be positioned adjacent to and preferably above the throttle control and shall be labeled "WARNING: DO NOT OPEN THROTTLE UNLESS LIGHT IS ON".

### **Electric Primer**

A 12-volt, Waterous model VPOS oil-free electric primer with push button control shall be supplied and installed to the Waterous pump. The electric push button control shall be installed on the pump operator's panel for activation of the primer. The rotating parts in the VPOS primer are made of corrosion-resistant, anodized aluminum, stainless steel and composite materials.

### **Suction Relief Valve**

A Class 1 2 ½" stainless steel suction side relief valve shall be provided and piped toward the ground under the apparatus. Rugged, cast construction with stainless steel mechanism and rubber seat to ensure a positive vacuum seal. Fully adjustable from 75 to 250 psi. Complies with NFPA 1901.

## ***Foam System***

### **Waterous ADVANTUS 3™ Foam Proportioning System**

The ADVANTUS 3™ accurately proportions all commercially available Class A foam concentrates utilizing an automatic microprocessor controlled, direct injection, discharge side foam proportioning system. The ADVANTUS 3™ measures water flow and temperature of the pumped water to provide highly accurate and consistent ratios.

### **Microprocessor Controller**

ADVANTUS 3™ is equipped with a 16-bit, mixed-signal microcontroller with a 60kB flash memory, 2 kB RAM and 12-bit analog to digital converter. This allows the ADVANTUS 3™ to receive input from the flowmeter and temperature sensor, controlling the foam pump motor to provide accurate injection into the foam manifold.

### **Operator Interface Terminal**

The Operator Interface Terminal (OIT), equipped with digital display, push-button controls and seven segment ultra-bright LED's, is mounted on the pump operator's panel allowing the operator to perform the following functions:

- Provide push-button control of foam proportioning rates from 0.1% to 1%, in 0.1% increments.
- Show current flow-per-minute of water.
- Show total volume of water discharge during and after foam operations are completed.
- Show total amount of foam concentrate used.
- Perform setup and calibrate functions for the microcontroller.
- Flash a "low concentrate" warning when the foam concentrate tank is empty.
- Flash an "error" warning with associated code in the event of an electronic malfunction.
- Provide a manual back-up mode, controlled by the operator.
- Pre-selection of measurements: US Gallons, Imperial Gallons or Liters.

### **Flowmeter**

A paddlewheel-type flowmeter, installed in the process manifold upstream of the foam injection point, connects to the microcontroller. Displayed on the OIT, the flowmeter reads the water rate of flow in real time as well as the total water used during and after foam operations.

A flowmeter tee, constructed of stainless steel or brass with Victaulic groove outer connections and threaded NPT inner connections at each of the tee, is provided for connection to the apparatus plumbing.

### **Foam Pump**

The 12-volt, electric motor driven, positive displacement triplex plunger foam pump is equipped with an aluminum crankcase, ball bearings, forged brass pump body and manifold, solid ceramic plungers, stainless steel check valves and piston guides, Buna packing and preset thermal and pressure relief valves.

The foam pump is rated at 2.5 GPM at 150 PSI with operating pressures up to 450 PSI. The system draws a maximum electrical load of 40amps @ 12 VDC.

A pump motor electronic driver, located inside the controller housing, receives signals from the microcontroller and powers the 1/2hp electric motor in a variable speed duty cycle to ensure that the correct amount of foam concentrate set by the pump operator is injected into the water stream.

### **Control Cable and Connectors**

The cables for interconnection of the control unit, OIT, temperature sensor and flowmeter are electrically shielded to prevent radio frequency or electro-mechanical interference.

### **Low Level Tank Level Switch**

A low tank level float switch, installed in the foam concentrate tank and connected to the control unit, alerts the operator to low foam supply conditions.

### **Waterway Check Valve**

A full-flow brass body waterway check valve at the inlet end of the foam manifold waterway prevents foam contamination of the fire pump and water supply.

### **Foam Inject Check Valve**

A brass and stainless steel check valve provided in the foam concentrate line at the foam injection point prevents water backflow into the foam supply reservoirs.

### **Foam System Support**

The ADVANTUS 3™ is equipped with PC-Connectivity, which allows a qualified technician to perform upgrades, diagnostics and monitor system functions in real-time. The system can also be remotely monitored using any PC with Internet access, allowing technicians to easily connect to the Waterous dedicated website to assure proper operation and to update the foam system software by uploading new features and functions as they come available.

## **System Components**

Components of the complete foam system supplied by Waterous include:

- Operator Interface Terminal (OIT)
- Pump module with electric motor/motor driver and microcontroller unit.
- Foam concentrate strainer.
- Shielded electrical cables for connection of all electronic components.
- Foam inject check valve.
- Wye strainer.
- Flowmeter and Tee.
- Waterway check valve.
- Low level tank switch.
- System diagram and rating placards (per NFPA 1901) for pump panel mounting.
- Installation and operation manual are provided for the unit along with a copy of the warranty policy. The system must be installed and serviced by an authorized Waterous OEM or service center.

*\*Note: The foam system will be plumbed to the three (3) speedlay discharges.*

## **Plumbing**

### **Pump Plumbing**

The apparatus will be plumbed using schedule 10 welded stainless steel pipe and schedule 10 welded stainless steel fittings. High-pressure rubber hose may be used when needed for discharges only. Victaulic couplings shall be used wherever needed to prevent vibration damage to the pump and plumbing. The suction and discharge piping of the pump shall include Victaulic fittings for easy maintenance of the pump and plumbing when needed.

### **Suction Inlet**

There shall be one (1) 6" gated suction inlet terminated with 6" threads and a long handle cap at the driver side pump operator's panel area. The valve shall be a 6" butterfly valve that is incorporated into the inlet plumbing behind the pump panel. The valve is manually controlled at the pump operator's panel with a handwheel control.

There shall be a label installed at the 6" inlet stating: "WARNING-SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED."

### **2 ½" Auxiliary Inlet**

There shall be one (1) 2 ½" NST gated suction inlet provided on the apparatus. The inlet shall be located at the driver side of the pump operator's module. The valve shall be an Akron quarter turn ball valve controlled at the pump operator's panel with a chrome-plated control handle. A strainer, chrome plug and chain will also be provided with the inlet.

There shall be one (1) ¾" bleeder/drain supplied for the inlet.

### **1 ½"-1 ¾" Speedlays**

There shall be one (1) double speedlay hose bed provided transverse at the front of the apparatus body directly ahead of the pump. Each speedlay shall be capable of holding 200' of 1 ¾" double jacket fire hose, and will be able to be deployed off each side of the apparatus using a 2" x 1 ½" mechanical chicksan swivel. There shall be stainless steel rollers around the crosslay hose feed out to protect the painted surface from hose that is being deployed.

Each speedlay shall be equipped with a Slidemaster dual direction slide out tray to allow for repacking the firehose.

Each speedlay will be plumbed with 2" stainless steel pipe and a 2" Akron quarter turn ball valve controlled at the pump panel with an Innovative Controls push-pull locking control handle.

Each discharge will have a ¾" bleeder/drain with control piped toward the ground.

There shall also be removable webbing installed at each side of the speedlay hose openings to retain the hose and nozzle into the hose beds.

### **2 ½" Crosslay**

There shall be one (1) crosslay hose bed provided directly above the 1 ½"-1 ¾" speedlays. The crosslay shall be capable of holding 200' of 2 ½" double jacket fire hose, and will be able to be deployed off each side of the apparatus using a 2 ½" x 2 ½" mechanical chicksan swivel. There shall be stainless steel rollers around the crosslay hose feed out to protect the painted surface from hose that is being deployed.

The crosslay will be plumbed with 2 ½" stainless steel pipe and a 2 ½" Akron quarter turn ball valve controlled at the pump panel with an Innovative Controls push-pull locking control handle.

Each discharge will have a ¾" bleeder/drain with control piped toward the ground.

There shall be an aluminum diamond plate cover installed at the top of the hose bed. The cover shall hinge at the front and shall hinge out of the way to aid in repacking the fire hose.

There shall also be removable webbing installed at each side of the crosslay hose openings to retain the hose and nozzle into the hose beds.

### **Discharge Valves**

There shall be two (2) 2 ½" discharges, Akron quarter turn ball valves controlled at the pump panel with an Innovative Controls push-pull locking control handle. Outlets will be a chrome 30° elbow with 2 ½" male NST threads and chrome 2 ½" cap and chain, one (1) of these discharges will be equipped with a 2 ½" NST female x 1 ½" NST male chrome plated reducer with 1 ½" cap and chain. There shall be two (2) at the left side of the pump module.

Each 2 ½" discharge will have a ¾" bleeder/drain with control piped toward the ground.

### **LDH Discharge**

There shall be a 3" discharge supplied on the apparatus used as an LDH discharge at the right side lower panel below the speed lay discharges. The discharge shall consist of a manually controlled handwheel control.

The discharge shall terminate with a 3" NPT female x 3" NST Male threaded chrome plated bushing. There shall be a 3" NST Female x 5" storz adapter with a 5" storz x 2 1/2" NST Male adapter with 2 1/2" cap and chain provided on the discharge at delivery.

There shall be one (1) 3/4" bleeder/drain supplied for the discharge.

### **Deck Gun Plumbing**

There shall be plumbing for a deck gun, 3", plumbed to a location at the top of the apparatus body at the front of the hose bed area. The deck gun shall be plumbed with 3" stainless steel pipe and an Akron quarter turn ball valve controlled with a chrome-plated push-pull locking control handle at the pump panel. This valve shall be supplied with slow close to comply with NFPA guidelines.

The deck gun pipe shall be secured properly so it will not move under pressure.

There shall be one (1) 3/4" bleeder/drain supplied for the deck gun plumbing.

### **Master Drain**

There shall be one (1) master drain, to drain pump and lines toward the ground.

### **Individual Line Drains/Bleeders**

There shall be an Innovative Controls 3/4" lift up/push down drain provided for each 1 1/2" or larger discharge and 2 1/2" or larger inlet. The purpose of these drains is to aide firefighters in draining the pump or to bleed off water to help remove a hose from the apparatus that had water pressure. The drains shall be located on each side of the apparatus near the bottom of the pump house directly above the side running boards. These drains shall be identified with color-coded name labels to match the discharge or inlet that it is for.

### **Tank Fill (Recirculation)**

There shall be one (1) tank fill line for filling the water tank with the pump with a 2" line. The valve shall be an Akron quarter turn ball valve with an Innovative Controls push-pull control handle at the pump panel.

### **Tank to Pump**

There shall be one (1) tank to pump line 3" in size. The valve shall be a 3" Akron quarter turn ball valve with an Innovative Controls push-pull control handle at the pump control panel. A flexible line shall be used between the tank sump and the valve.

### **Valves**

The valves used in the plumbing of the apparatus shall be Akron 8900 Series valves with stainless steel ball and Polymer seats.

### **Heat Exchanger**

A Sen-dure model #1212-1 auxiliary booster cooler shall be installed on the apparatus made of brass and copper construction. The unit shall permit use of water from the discharge side of the pump for cooling of the coolant circulating through the engine cooling system without intermixing. The auxiliary cooler lines shall be routed away from the engine exhaust and be properly secured to the truck frame.

### **Heat Pan**

There shall be a heat pan fabricated and installed under the pump house of the apparatus. The heat pan shall be made from 1/8" smooth aluminum with slide in and out doors at the bottom for access to the bottom of the pump. The heat pan shall be made incorporating the chassis exhaust system to help keep the pump compartment warm in cold weather conditions.

### **Pump Compartment Heater**

There shall be one (1) 33,000 BTU hot water heater installed on the apparatus, as low as possible, in the pump compartment. The heater shall be plumbed to the chassis coolant system and electrical system. The control for the pump compartment heater shall be located on the pump operator's panel and properly labeled as such.

### ***Pump Control Panel (Enclosed)***

There shall be a pump control panel located at the front of the apparatus body and under the front portion of the water tank. The pump module/panel compartment shall be larger than the standard storage compartments to house the pump and plumbing. The operator shall be capable of controlling the pump from a standing position at this location. There will only be a pump panel left side of the apparatus body with no secondary panel at the right side of the apparatus body.

The side pump panel shall be completely enclosed at the left side with a Gortite rollup door. The door shall be mounted in an aluminum framework that is built into the apparatus body at the front of the body. The door will keep the pump panel clean and free of debris when not in use.

The speedlay/crosslay area of the body shall be standard 72" wide pump panel width to allow for a stepping surface to access the hose/nozzles. This will also allow any discharges to be located at this location also.

### **Pump Panels**

The pump panel shall be black vinyl covered aluminum and shall be easily removable for service work. The left panel shall be where all pump controls and gauges shall be placed and all controls and gauges shall be labeled using color-coded name labels.

### **Panel Lighting**

Lighting shall consist of three (3), Weldon LED pump panel lights for complete illumination of the pump operator panel. They shall be in a single row above the left side panel. The panel lights

shall automatically activate with the opening of the door. The lights shall be housed in a brushed stainless steel full width lamp shield above the gauge panel.

There shall also be standard LED compartment strip lighting installed at each side of the compartment door openings to help illuminate the pump panels.

### **Operators Panel**

The following items shall be furnished on the operator panel at the left side:

- One (1) 4 ½" white master pressure gauge, liquid filled 0-400 PSI
- One (1) 4 ½" white master vacuum gauge, liquid filled 30"-0-400 PSI
- One (1) 2 ½" white pressure gauge one (1) per 1 ½" discharge or larger 0-400 PSI
- One (1) Class 1 Total Pressure Governor (TPG)
- One (1) Class 1 ITL water tank level gauge
- One (1) Class 1 ITL foam tank level gauge
- One (1) pump panel light switch
- One (1) pump primer control
- All discharge controls
- One (1) tank fill control
- One (1) tank to pump control
- One (1) Master Drain control
- One (1) Pump Hourmeter
- One (1) Pump Compartment Heater Control
- One (1) Air Horn button

### **Air Horn Button**

There shall be an air horn control button located on the pump control panel within easy reach of the pump operator. The button shall be labeled "Emergency Air Horn".

### **Pressure Gauges**

All pressure gauges for the water pumping system shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The Zytel nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem.

Individual 2 ½" line gauges for each 1 ½" or larger discharges shall be supplied and mounted adjacent to the discharge valve control handle.

### **Class1 Total Pressure Governor (TPG)**

Apparatus shall be equipped with a Class1 "Total Pressure Governor" (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The "TPG" will operate as a pressure sensor (regulating) governor (PSG) utilizing the engine's J1939 data for optimal resolution and response when supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The TPG shall have the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by technicians. Programmable presets for RPM and Pressure settings shall be easily configurable. The straightforward menu structure shall allow the "TPG" configuration to match existing apparatus operation as closely as possible.

The "TPG" shall also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The "TPG" uses the J1939 data bus for engine information, requiring no additional sensors to be installed. The TPG shall use J1939 broadcast warnings for the alarm as a standard and allow the "user" to select warning values if "SOP's" dictate.

### **Water Tank Level Gauge**

The apparatus shall be equipped with one (1), Class 1 "Intelli-Tank" level gauge for indicating water level. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank. There shall be one (1), readout located on the pump operator's panel.

Each tank level gauge system shall include:

- 1) A pressure transducer that is mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) A super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) A set of weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

Additional displays are to be easily integrated and will receive data from the same source as the Master display. No additional transducers shall be required. (Optional)

### **Class 1 ITL-40 Water Level Readout**

There shall be one (1), Class 1 model ITL-40M LED Multi-Color readout installed on the apparatus. There shall be one (1) installed at the upper rear panel of the apparatus body. The remote water tank readout shall coincide with the master water level gauge at the pump panel for

water level readouts. The strip shall have the following colored indicators; Green (full), Blue (3/4), Yellow (1/2) and Red (1/4).

### **Foam Tank Level Gauge**

The apparatus shall be equipped with one (1) Class 1 "Intelli-Tank" level gauge for indicating foam level. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank. The readout shall be located on the pump operator's panel of the apparatus.

Each tank level gauge system shall include:

- 1) A pressure transducer that is mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) A super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) A set of weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

Additional displays are to be easily integrated and will receive data from the same source as the Master display. No additional transducers shall be required. (Optional)

### **Discharge Controls**

The apparatus shall be equipped with Innovative Controls locking push-pull controls. The handles shall be chrome-plated zinc with a recessed area for identification label. The control shall be a ¼ turn locking in any position handle and the ¾" connecting rod shall be a hard coated anodized aluminum with ball swivels and ½" stainless steel extensions, where applicable, also equipped with ball swivels for ease in operation.

### ***Booster Tank***

*(The booster tank shall have a No Fault All Out Lifetime warranty through the tank manufacturer.)*

### **Tank Capacity**

The water booster tank shall have a capacity of **2000 US gallons of water and 20-gallons of foam concentrate** complete with lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. Markings may be brief but should include a short statement that a warranty exists, the substance of the warranty, its duration, and who to notify if the tank is found to be defective.

The water tank shall be constructed from all polypropylene type material and shall be completely NFPA compliant upon completion. There shall be a fill tower in the left front corner of the tank, unless otherwise specified, with minimum dimensions of 12" x 12". There shall be a 6" minimum overflow/vent pipe installed into the fill tower directed to a location behind the rear wheels for air to vent and excess water to discharge from the tank without flowing into the hose bed or onto the

body compartments. There shall be a sump located in the tank of the apparatus for "hooking" up the tank to pump line where all the water in the tank can be utilized. There shall be a 3" NPT plug in the bottom of the sump that can be removed for a cleanout, to remove any debris that may enter the tank. The tank shall be supplied with one (1) tank fill line with a flow deflector installed for filling the tank. The tank can be filled at a maximum rate of 1000 GPM.

The tank shall be mounted into the apparatus body per tank manufacturer's recommendations and NFPA recommendations.

## ***Dump Valves***

### **Newton Dump Valves**

There shall be one (1) Newton, model 1050-34, 10" stainless steel square manually actuated dump valve at the rear center of the apparatus. The valve shall open with a level handle located at the top of the dump valve. The dump valve shall be left natural in color.

### **Dump Chutes**

There shall be provided one (1) Newton, Model 6012SW-34 stainless steel swivel chute with telescoping extension chute on the end of the dump valve. The swivel chute shall be manually swiveled to the desired location for dumping and the telescoping chute shall be easily extended and closed with a handle located at the top of the chute. The chute and swivel shall be left natural in color.

### **Direct Tank Fills**

There shall be two (2) 2 1/2" direct tank fills located at the rear panel of the apparatus plumbed directly to the water tank, one (1) each side of the dump valve, below the dump valve above the tailboard. The valves shall be Firemen's Friend stainless steel check valve style valves inserted into the tank. The inlets shall be plumbed with stainless steel pipe and will terminate with 2 1/2" NST female threads and supplied with a 2 1/2" chrome-plated plug with chain. The valves shall be properly supported at the rear panel to minimize damage to the water tank.

The fills shall be supplied with a 3/4" quarter turn drain valve to relieve inlet pressure at the valve for disconnecting the hose. The drains will be supplied with plastic tubing to direct draining water under the apparatus body.

## ***Apparatus Body***

### **Extruded Aluminum Body**

#### **Extruded Aluminum Body Construction and Sub Frame**

The apparatus body shall be of aluminum construction, using the electrically welded and bolted design and assembled with 1" radius corner extrusions, formed panels and structural tubing extrusions.

The apparatus body corners, both vertical and horizontal, shall be constructed with 1" radius corner extrusion framework around the entire perimeter of the apparatus, which incorporates 3/16" aluminum sheeting. The body framework shall also be welded directly to the body sub frame with 2" x 3" x 1/4" wall tubing that run the full width of the apparatus body in a minimum of four (4) locations, more with tandem axle bodies. Bracing and gussets shall be used at the manufacturer's discretion to enhance the durability and life of the apparatus body without affecting the overall appearance of the finished product.

The hose body side panels are to be 3/16" smooth aluminum. The top of the side panels shall have a 1" radius extrusion to increase the support and enhance the appearance of the sidewalls. There shall also be an interior panel at the hose bed side of the panel that shall leave the hose bed with a smooth finish. This method of construction will leave the hose bed side walls with a double wall type construction. If the interior panel would be damaged this would not transfer to the exterior side wall and be visible from the outside of the body. This also allows any side scene lights to be recess mounted into the side walls.

The rear of the apparatus shall be the flat back style to open up the work area both physically and visually.

#### **Anti-Corrosion Protection**

No dissimilar metals shall contact each other. All stainless steel screws shall have a nylon washer under their heads and "ECK" (Electrolysis Corrosion Kontrol) coated threads a non-hardening isolating material. All fasteners shall be stainless steel. No pop rivets shall be used in the construction of the apparatus. "ECK" shall also be used behind all lights and mounting brackets to aid in corrosion protection.

#### **Sub Frame**

There shall be a sub frame made up of all aluminum extrusions electrically welded together for superior strength. The sub frame shall be electrically welded to 1/2" x 3" aluminum flat bar that run the full length of the apparatus body, which is then U-bolted to the chassis frame.

Between the sub frame and the frame rails there shall be 1/2" x 3" layer of fiber reinforced rubber of 60D hardness to separate the two dissimilar metals. The rubber is to prevent any electrolysis between the two dissimilar metals and to provide a cushion for the body onto the chassis frame. The sub frame shall be made up of 2" x 3" x 1/4" wall extruded aluminum tubing. Cross members for the water tank shall be on 12" centers and a 2" x 3" x 1/4" thick aluminum angle shall be used for the tank carriage.

#### **Body Compartments**

All the body compartments shall be constructed of 1/8" smooth aluminum and shall be provided with a sweep out floor design. There shall be hat sections installed under the apparatus body compartments to help support the floors when loaded with heavy equipment.

All compartments shall have louvers punched in the back walls for adequate ventilation. Louver openings shall be open toward the top and to the inside of the compartment to help prevent

foreign objects and road splash from entering the compartments. Each compartment shall have lighting installed to illuminate the compartment during low light and dark conditions.

### **Compartment Layout**

(Compartment sizes are approximate sizes and may change with the chassis style, body style, and Cab to axle distance.)

#### ***Driver's Side***

**L1**-The first compartment forward of the rear wheels shall be equipped with a Gortite aluminum roll up door.

Approximate size is: 56" high x 41" wide x 12" deep. This compartment shall house the pump control panel.

**L2**-The second compartment at the driver's side of the body directly ahead of the rear wheels shall be equipped with dual vertically hinged flush mount swinging doors.

Approximate size is: 38" high x 54" wide x 26" deep. This compartment shall be equipped with one (1) adjustable height shelf.

**L3**-The compartment behind the rear wheels of the body shall be equipped with a single vertically hinged flush mount swinging door.

Approximate size is: 38" high x 21" wide x 26" deep.

#### ***Passenger Side***

**R1**-The first compartment forward of the rear wheels shall be equipped with dual vertically hinged flush mount swinging doors.

Approximate size is: 38" high x 41" wide x 26" deep. This compartment shall be equipped with one (1) adjustable height shelf.

**R2**-The second compartment at the driver's side of the body directly ahead of the rear wheels shall be equipped with dual vertically hinged flush mount swinging doors.

Approximate size is: 38" high x 54" wide x 26" deep. This compartment shall be equipped with one (1) floor mounted slide out tray.

**R3**-The compartment behind the rear wheels of the body shall be equipped with a single vertically hinged flush mount swinging door.

Approximate size is: 38" high x 21" wide x 26" deep.

### **Gortite Roll Up Compartment Door**

The roll up door shall be supplied with a satin anodized natural aluminum finish. The door shall be double faced, aluminum construction and manufactured by A & A Manufacturing (Gortite). Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of the door. Between each slat at the pivoting joint shall be a PVC inner seal to

prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist dirt and weather from entering the compartment. The seals shall be made of Santoprene. All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. A polished stainless steel lift bar shall be provided for opening the door. The lift bar shall be located at the bottom of the door and shall have latches on the outer extrusion of the doors frame. A ledge shall be supplied over the lift bar for an additional area to aid in closing the door. The doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat and the interior surfaces shall be concave to provide strength and to prevent equipment from jamming against the door at the inside. The spring roller assembly shall not exceed 3" in diameter to conserve space in the compartment. The header panel for the roll up door shall not exceed 4" in height. There shall also be heavy-duty magnetic switches installed for activating the compartment lights and the "open compartment indicator light" in the cab.

### **Compartment Doors**

The compartment doors shall be constructed entirely from aluminum using a flush type configuration 1 5/8" door with 1/8" diamond plate inner panel fastened to the door with stainless steel fasteners. Two (2) 1/4" holes shall be installed in the lower corners of the inside door pans for drainage. There shall be a "hat stake" section inside each door to enhance the overall strength and durability of the doors. Doors shall be fully weather stripped with hollow core tubular automotive "D" type material. The compartment doors shall have a double catching two-point safety slam heavy duty stainless steel latches 6" circle type with rubber gaskets for electrolysis protection, recessed inside the 1 5/8" thick double pan door. Latches shall meet strength requirements for passenger doors as specified in the Federal Motor Vehicle Standard they shall be Eberhard model U-106 slam latches. The "D" rings shall have a slight break outward to facilitate easy access while using gloves. The doors shall be securely attached to the apparatus body with full-length 16 gauge stainless steel piano type hinges with stainless steel pins and fasteners. ***(Pop Rivets shall NOT be used for attaching compartment doors to the apparatus body.)*** All horizontally hinged doors shall have a pneumatic cylinder door check device. The pneumatic door holder permits the slide to pass over center and holds the door at 90 degrees to the body. The door is self-closing when pushed past the mid point of its swing. All vertically hinged doors will be provided with a Cleveland style positive door check.

### **Compartment Matting**

There shall be modular plastic floor matting installed at the bottom of each compartment, tray, and shelf in the apparatus body. The matting shall allow air to move freely around equipment in the compartments to help prevent mold and mildew from forming on or around equipment.

### **Adjustable Shelf Tracking**

There shall be one (1) pair of adjustable tracking installed in each compartment on the apparatus. The tracking will allow for the provisions of adjustable shelves immediately or in the future.

### **Adjustable Shelves**

There shall be two (2) adjustable shelves supplied with the apparatus mounted on adjustable tracking. The shelves shall be located one (1) each L2 and R1 compartment. The shelves shall be made from smooth aluminum with a 2" lip on the front and the back in opposite directions for added strength, and to prevent equipment from sliding off and jamming against the door. The shelves shall have a "DA" style finish.

### **Slide Out Tray**

There shall be one (1) slide out tray installed on the apparatus with a 300 lb. capacity in the extended position. The slides shall be Accuride slides with an aluminum tray with 2" sides with a pressurized gas strut at the bottom of the tray to hold the tray in the "In" or "Out" positions. There shall be one (1) tray installed at the floor compartment, R2, and shall be as large as practical.

### **Body to Frame Attachment**

The entire body is to be electrically welded to the sub frame and be fastened down to the chassis frame with a minimum of 5/8" "U" bolts.

### **Wheel Liners/Fenderettes**

There shall be rounded wheel liners installed in the body to protect the tank from being hit with road debris. There shall also be installed a polished aluminum 1/2" radius fenderette which is bolted to the body if it needs to be removed or replaced. There shall also be a black fender welting installed between the fenderette and the body for corrosion resistance and enhance the appearance.

### **SCBA Bottle Storage**

There shall be a storage location for four (4) SCBA bottle cylinders in the passenger side wheel wells in compartments located ahead of and behind the rear wheels of the apparatus. Each compartment shall be capable of hold two (2) cylinders in each. The compartments shall have hinged smooth aluminum doors, painted to match the body, and the bottles shall be stored in individual aluminum tubes, which is completely welded into place and supported at the rear. The bottom of the tubes shall be lined with 1/8" thick rubber for protection of the bottle and there shall be a 1/4" hole located at the rear bottom of the tube for drainage.

### **Wheel Chock Storage**

There shall be a storage location for two (2) wheel chocks in the driver's side wheel wells in compartments located ahead of and behind the rear wheels of the apparatus. Each compartment shall be capable of holding one (1) wheel chock in each. The compartments shall have hinged smooth aluminum doors, painted to match the body. The compartment interiors shall be completely welded into place and supported at the rear. The bottom of the compartments shall be lined with 1/8" thick rubber for protection of the chocks and compartment. There shall also be a 1/4" hole located at the rear bottom of the tube for drainage.

### **Hose Bed**

The hose bed at the top of the tank shall be 94" wide to have storage for 900' of 5" LDH, 400' of 2 1/2" double jacket hose and 200' of 1 3/4" double jacket hose. The hose bed floor shall be constructed of aluminum extrusion and be spaced 1/4" apart and supported underneath for ample

airflow between the top of the tank and the hose bed. The hose bed floor shall be easily removable. The inside of the hose bed shall be smooth and free of any projections, (sharp angles, nuts, or brackets), which may injure the folding tank or hose.

#### **Hose Bed Dividers**

There shall be two (2) hose bed dividers installed on adjustable tracking. The dividers shall be made of 3/16" smooth aluminum and shall have a radius corner at the rear.

#### **Hose Bed Cover**

There shall be a two-section, one (1) each side, 1/8" "embossed" aluminum diamond plate, hinged hose bed cover supplied and installed on the apparatus body. The center of the hose bed cover shall be slightly higher than the sides for water runoff and shall be properly supported underneath to accommodate two (2) firefighters standing on the cover without damaging the cover. The covers shall open to each side of the apparatus body with the assistance of pneumatic lift assist cylinders and grab rails at each end of the covers. The covers when open shall be supported in the upward position as close to 90-degrees as possible. The hose bed cover shall allow personnel to walk on the cover without excessive sag or dimpling. The center of the two covers shall be supported underneath with a permanently installed hose bed divider, which shall incorporate an aluminum channel to direct water to each end of the cover and not allow water to run into the hose bed.

There shall be lights installed at each end of the covers to illuminate the hose bed. The lights shall be wired to a switch to automatically activate upon opening the cover. This switch shall also activate the open compartment door indicator light in the cab of the apparatus.

There shall be red vinyl flaps installed at the rear of the hose bed cover to cover the remaining portion of the hose bed at the rear. The bottoms of these flaps shall be weighted and provided with quick release restraint straps to hold the covers in place and prevent accident hose deployment.

#### **Ladder Storage**

There shall be one (1) compartment located under the tank "T" section between the tank and the aluminum body at the right side of the apparatus. There shall be a smooth aluminum door at the rear of this compartment with a chrome plated latch. This compartment shall also have a storage location for a folding roof ladder. The ladders to be carried are one (1) Duo Safety model 900-A 24' 2-section extension ladder, one (1) Duo Safety model 775-A 14' roof ladder and one (1) Duo Safety model 585-A 10' folding ladder. These ladders will be supplied with the apparatus at delivery.

#### **Folding Tank Storage**

There shall be a folding tank compartment located at the left side of the apparatus body with a rear door. The folding tank compartment shall be a sleeve in the side of the body between the body sidewall and the water tank. The bottom of the compartment shall be supplied with plastic for

the tank to slide on without damaging the folding water tank. There shall be a stainless steel roller at the rear to aid in loading and unloading the tank from the compartment. There shall be a smooth aluminum flat door installed at the rear of the compartment enclosing the folding tank into the compartment. The door shall be supplied with a chrome plated latch for holding the door closed. The compartment shall be sized to fit a 2100-gallon folding tank. There shall also be provisions for two (2) lengths of 6" x 10' PVC style hard suction hoses at the inside portion of this compartment. There shall troughs fabricated and permanently installed in this compartment for the hoses to be slid onto.

This compartment shall also have storage locations for two (2) pike poles.

### **Folding Tank**

There shall be one (1) Husky 2100-gallon folding water tank supplied with the apparatus at delivery. The liner shall be 22oz vinyl with 28oz floor with an aluminum frame. The tank will have handles built into the bottom of the tank liner and shall have one (1) dump spout/drain. The tank shall be Yellow in color.

### **Hand Rails**

There shall be three (3) hand rails installed, one (1) each side vertically mounted at the rear of the apparatus, and one (1) horizontally mounted at and just below the hose bed full width of the hose bed. The hand rails shall be rigidly mounted in chrome plated stanchions and be anodized aluminum extrusion, which is grooved and aggressively knurled to reduce hand slippage.

### **Folding Steps**

There shall be six (6) Cast Products model SP4401-1CH-BL-A folding cast aluminum steps with open grip strut at the stepping surface supplied and installed three (3) each side at the rear panel of the apparatus body. The front portion of the step shall have a handhold built into the step and there shall be a LED lights installed at the top and bottom of the step. The steps shall be a minimum of 35 square inches and N.F.P.A. compliant.

### **Intermediate Rear Step**

There shall be an intermediate step installed above the rear dump valve, fabricated from "embossed" aluminum diamond plate and open grip strut. The intermediate step shall provide a firm stepping surface to access the hose bed. The step shall be approximately 10" deep x full width between the rear ladder and the right side of the body. The ends of the step shall be slightly tapered to allow for greater clearance of the rear slide in equipment storage compartments.

### **Rub Rails**

There shall be rub rails installed around the perimeter of the body below the bottom compartments. The rub rail shall be an extruded aluminum channel 3" high with 1" flanges. The flat side of the channel shall be to the body side. The rub rail will then be installed using Teflon spacers to keep the rub rail away from the body and be bolted for easy removal and allow drainage between the body and the rub rail.

Alternating Red/White DOT reflective tape shall be inserted into the rubrail for reflectivity.

### **Aluminum Diamond Plate Overlays and Trim**

At the front of the body there shall be aluminum diamond plate installed full height to be a stone shield and to protect the body from road debris.

The entire rear panel of the apparatus between the side compartments shall be smooth aluminum material. This will allow the installation of reflective chevron striping at the entire rear panel. There shall be stainless steel scuff plate installed from the hose bed floor to the top of the side body panels approximately 12" deep from the rear of the hose bed to protect the body and paint finish from scratching and marring.

### **Rear Step**

The rear step shall be formed from N.F.P.A. compliant 3/16" thick "embossed" aluminum diamond plate. The step shall be full width of the body and be approximately 22" deep. The step shall be supported underneath by 3" steel channels that extend off the chassis frame and have a spacer between the two dissimilar metals to reduce corrosion.

## ***Electrical System***

### **12-Volt Electrical System Test**

The low voltage electrical system shall be tested and certified per NFPA 1901 requirements.

A certificate of compliance shall be provided with the completed vehicle upon delivery.

Minimum electrical load consists of the total amperage required to simultaneously operate the following in a stationary mode at the incident scene.

- The propulsion engine and transmission.
- All clearance and marker lights.
- The communication radio. (Default of 5.0 amps used testing).
- Illumination of all walking surfaces, the ground at all egress points, controls and instrument panels and 50% of the total compartment lighting load.
- Minimum warning lights required for "Blocking Right of Way" mode.
- The current to simultaneously operate any fire pump, aerial device and hydraulic pumps.
- Anything defined by the purchaser to be critical to the mission of the apparatus.

The first test for the electrical system is the **Reserve Capacity Test**. All the above listed components operate with the engine shut off. After 10 minutes all electrical loads are shut off and the battery system must have adequate reserve power to start the engine.

The second test is the **Alternator Performance Test at Idle**. All the above listed components operate with the engine at an idle. There can be no current draw from the batteries of the apparatus.

The third test is the **Alternator Performance Test at Full Load**. All electrical components shall be activated with the engine operating at governed RPM for two hours. During the test the system voltage can not drop below 11.7-volts or have excessive battery discharge for more than 120 seconds. Any loads not listed in the minimum electrical load may be load managed in order to pass the test.

### **Wiring**

All electrical equipment shall be installed to conform to modern automotive practices. All wiring is to be SXL ultra high temperature cross-link type. Wiring installed by the builder to be run in loom or conduit, where exposed to the outside, it should have grommets where the wire passes through a metal plate and shall be protected by automatic reset circuit breakers which conform to SAE standards. The breakers shall be selected to prevent wire damage when subjected to extreme overload. Wiring to be color, function, and number coded every 3", the entire length of run.

All electrical components to have a 125% maximum rating for current carried.

### **ES-Key Management System**

The apparatus shall be equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system shall be capable of performing loan management functions, system monitoring and reporting, and be fully programmable for a standardized electrical system.

The ES-Key system shall utilize a Controller Area Network to provide multiplexed control signals for "real time" operation.

### **Vehicle Data Recorder (VDR - Black Box)**

There shall be a Vehicle Data Recorder (VDR-Black Box) installed on the apparatus. The VDR will capture data once per second in 48 hour loop. The VDR shall monitor and record the following information; Acceleration/Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied & Seat Belt Status, Master Warning Device Switch On/Off, Date/Time. There will a minute by minute summary for 100 engine hours.

### **Seat Belt Warning System**

There shall be a seat belt warning and indicator system installed in the cab of the apparatus warning the driver with an audible alarm that a certain seat is being occupied and the seat belt is not fastened. There shall be an icon display at the center console of the apparatus to indicate the seating position.

### **EMI/RFI Protection**

The apparatus design and construction shall incorporate the latest designs in incorporating Electromagnetic Interference Suppression, which is required to satisfy the radiation limits specified in SAE (Standard for Automotive Excellence) J551. "Performance Levels and Methods of Measurement of Electromagnetic Radiation from vehicles and devices (30-1000 MHz), and of which has been adopted by NFPA 1901. System design and components used shall insure that radiated and conducted electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations.

EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low-level control signals and high-powered two (2) way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

### **Master Switch Panel**

All electrical light switches shall be mounted on the cab console by means of a custom switch panel. It shall be accessible to the driver and the officer. A Main Master Switch and individual switches to be provided to allow pre-selection of emergency and scene lights.

The light switches are to be "rocker" type with an internal indicator light to show when the switch is energized. All switches to be properly identified and mounted in a removable panel for ease in servicing. A backlit panel shall be used to identify the switches when it's dark.

Each rocker switch shall energize a 40-amp continuous duty relay. Each relay shall be labeled as to its function.

### **Wiring Diagrams**

Two (2) wiring diagrams for 12 VDC and/or 120/240 VAC, the body electrical system shall be included with the apparatus as built.

### **Master Battery Switch**

There shall be a Cole-Hersee master battery, on-off, switch located at the driver's door near the seat. This switch shall be wired to the chassis battery system to allow the system to be turn off when the vehicle is not in use. There shall be a green indicator light located next to the switch and shall automatically turn on when the battery system is activated.

### **Compartment Lights**

There shall be two (2) LED compartment strip light in each compartment, one (1) each side of the door opening, wired to a door switch. Upon opening the compartment door the light automatically comes on.

### **Open Compartment Door Indicator Light**

There shall also be a Red LED "open door" indicator light mounted in the cab where the driver can see it. This is to alert the driver that there is a door open or ajar on the apparatus. This light is also wired to the door switch.

### **Ground Lights**

There shall be a total of eight (8) LED ground lights installed under the apparatus. There shall be one (1) sealed light located under each of the cab doors, two (2) sealed lights located under the

front compartments and two (2) sealed lights located under the rear step. These ground lights will be activated upon setting the parking brake.

### **Step Lights**

There shall be four (4) LED step lights installed on the apparatus, there shall be one (1) 4" round sealed light each side at the body bulkheads to illuminate the cab steps and two (2) chrome-plated shielded lights at the rear step area. These lights shall be activated upon setting the parking brake.

### **Engine/Pump Compartment Lights**

There shall be two (2) single bulb lights with manual switches mounted in both the engine and pump compartments to help in service.

### **Stop, Tail, Directional Lights**

There shall be installed two (2) sets of Whelen 600 Series LED stop/tail/directional, and back up lights at the rear outer most location. The red taillights shall be model 60BTT, the amber turn signals shall be model 60A00TAR and the backup lights shall be model 60C00WCR. The lights shall be wired to the chassis electrical system for operation. These lights shall be mounted in a Whelen chrome-plated 6EFLANGE kit.

### **Mid-ship Marker Lights**

There shall be a pair of LED amber mid-ship marker and turn indicator lights installed on the apparatus. The lights shall be wired to the chassis marker lights for operation.

### **Back Up Alarm**

There shall be installed one (1) back up alarm wired to reverse gear on the transmission.

### **Clearance Lights/Reflectors**

There shall be LED clearance lights installed at the rear of the apparatus built into the rear step. There shall be a cluster of three (3) in the center, one (1) at the outer most beveled corner of the rear step at a 45° angle. These five (5) lights shall be Red in color. There also shall be LED clearance lights installed, one (1) each side at the upper rear corners, also Red in color.

There shall also be DOT reflectors at the outer most corners one (1) each side toward the rear and one (1) each side toward the side.

### **Scene Lights**

There shall be six (6) Whelen 900 Series model, 9SC0ENZR, LED 12-volt scene lights installed on the apparatus. There shall be two (2) each side (one (1) in each upper front and rear corner) and two (2) at the upper rear panel of the body, one (1) each side. The rear lights shall be wired to reverse gear of the transmission so the light automatically comes on when the truck is shifted to reverse gear. The lights shall also be wired to the in cab switch panel and be activated with an individual switch for the lights.

### **OPTION PRICE-Whelen Pioneer Lightbar Mounted Brow Flood Lighthouse**

There shall be a Whelen Pioneer Plus™ Model # PFP1LB1 brow light provided and installed onto the center of the cab mounted light bar. The 75 watt +12v DC Pioneer lighthouse shall incorporate Super-LED® single flood light installed in a die-cast white powder coated aluminum housing. The PFP1 configuration shall consist of 30 white Super-LEDs, a clear optic collimator/metalized reflector assembly and a clear non-optic polycarbonate lens. The Pioneer flood light shall have 8,100 usable lumens.

The lens/reflector assembly shall utilize a liquid injected molded silicone gasket to be 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 PFP1 shall be vibration resistant. The Pioneer™ PC boards shall be conformal coated for additional protection. Two breathable membrane patches shall be installed to the bottom of the housing to maintain a consistent internal pressure. The PFP1 shall have extended LED operation with low current consumption and low operating temperature.

The PFP1 shall be furnished with a 20' 2/C 16GA input cable. The Pioneer light shall be SAE 1113-42 compliant and Class 5 testing for EMI. The PFP1 is covered by a five year factory warranty. Mounting options are purchased separately.

Voltage: +12v DC

Size: H=4.125", W=8.125", D=2.50"

Amp Draw: Spot Light = 6.50 Amps

Lens Color: Clear

### **Back Up Camera**

There shall be a Hanscom K, model 7211, flat screen back up camera system installed with audio capabilities. The 7" colored monitor is approximately 1" thick which makes it easy for mounting in various locations. The monitor shall be mounted in the cab per the fire department specified location. The video camera shall be mounted on the rear wall of the apparatus body in a location that will provide the best angle of the ground and the area behind the truck. The camera shall be provided with a shield to protect the camera from damage.

### **Warning Systems**

(All warning systems will be provided as per NFPA 1901 requirements.)

The optical warning system on the fire apparatus shall be capable of two (2) separate signaling modes during emergency operations. The first mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is CALLING for the "Right-of-way". The second mode shall signal that the apparatus is stopped and is BLOCKING the "Right-of-way".

The switching between modes shall be provided by a sensor that senses the position of a parking brake or the park position of an automatic transmission. When the master optical warning system switch is closed, and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the call for "Right-of-way" shall be energized. When the master optical warning system is closed, and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the Right-of-way shall be energized. The system shall be permitted to have a method of modifying the two signaling modes.

### **Light Bar-Whelen Edge Ultra Freedom IV Model F4N2VLED (Red, White center)**

There shall be one (1) Whelen Freedom IV 55" LED light bar mounted on the roof of the cab and wired to the in cab switch panel. The light bar shall have two (2) red forward facing LED modules, two (2) clear forward facing LED modules, two (2) red front corner LED modules, and two (2) red rear corner LED modules. This light bar fulfills the requirements for Upper Zone A. The light bar lenses shall be clear in color.

Any clear warning light(s) in the light bar will be deactivated automatically for the "Blocking the Right of Way" mode.

**Grille and Intersection Lights-Whelen Super LED Flashers (Red)**

There shall be two (2) grille lights installed at the front of the cab, one (1) each side, and two (2) intersection lights installed, one (1) each side of the chassis hood. The grille lights shall be Whelen, model 60R02FRR Super LED flashers and the intersection lights shall be Whelen model 50R02ZRR Super LED flashers wired to the in cab switch panel. These lights shall fulfill the requirements of Lower Zone A.

**Upper Rear Flashers-Whelen 900 Series Super LED Flashers (Red)**

There shall be four (4) Whelen, model 90RR5FRR, Super LED flashers mounted one (1) each side of the body at the upper side corners and one (1) each side of the upper rear body panel. The lights shall be wired to the in cab switch panel. The lights shall fulfill the requirements of Upper Levels B, C and D.

**Lower Side Lighting-Whelen Super LED Flashers (Red)**

There shall be two (2) Whelen, model 60R02FRR Super LED flashers mounted one (1) each side at the rear wheel well area. The lights shall be wired to the in cab switch panel. These lights shall fulfill the requirements of Upper and Lower Zones B and D.

**Lower Rear Lighting-Whelen 600 Series Super LED Flashers (Red)**

There shall be two (2) Whelen, model 60R02FRR Super LED flashers mounted one (1) each side at the rear of the apparatus above the rear taillights. The lights shall be wired to the in cab switch panel for operation. These lights shall fulfill the requirements of Upper and Lower Zone C.

**Traffic Advisor**

There shall be one (1) Whelen, Model TAL-85, LED directional lights mounted on the apparatus. The light shall be located at the upper rear panel of the apparatus body under the intermediate rear step. There shall be an individual control head located in the cab of the apparatus for activating each directional light. All lenses shall be Amber in color.

**Siren & Speaker**

There shall be installed one (1) Whelen model 295HFSA1 siren amplifier mounted in cab where both driver and officer can reach it shall be wired to the cab electrical system. There shall also be installed one (1) Whelen, model SA315P, 100 watt weatherproof speaker at the front bumper/grille area and wired to the siren amplifier and to the cab electrical system.

There shall also be a Federal Rumbler traffic clearing device installed for use with the siren.

## ***Paint/Misc.***

### ***Paint Code:***

#### **Paint Process**

The entire apparatus body shall be painted one (1) solid color per fire department specifications using Sikkens Autocoat LV650 top coat/clear coat paint. The painting process shall be done by, AkzoNobel/Sikkens trained personnel in the automotive painting industry. The following procedure shall be followed during the painting process:

- 1) All items such as brackets, compartment doors, door hinges, and diamond tread aluminum plate, etc. should be removed from the apparatus or body.
- 2) Entire unit should be solvent washed using a two (2)-rag method using Sikkens Antistatic degreaser.
- 3) The welded areas on the entire unit should be ground down with a 36-grit disc for steel, and 80 grit discs for aluminum. Compartment seams and others not receiving the grinding process should be wire wheeled. All surface area then should be DA sanded using 120 grit then 180 grit on steel or Galvneal. On aluminum use 150-180 grit.  
Filling should be done where necessary with professional grade lightweight polyester resin filler. Presanding the polyester filler is recommended.  
Final sanding should be done no courser than 180 grit.
- 4) Entire unit should be solvent washed using a two (2)-rag method using Sikkens Antistatic degreaser
- 5) The unit is wiped with Sikkens Auto Prep Wipes using a cross hatch method with one application. After a flash of 15-20 Minutes@70 degrees 3 coats of Sikkens Autocoat LV 650 Surfacer shall be applied. Mixed 5 Parts Autocoat LV 650 Surfacer filler then 1 part Autocoat LV 650 Surfacer Hardener then 1 part of Autocoat LV 650 Reducer slow. Dry film thickness will be around 4.0-5.0 mils
- 6) Sanding of Autocoat LV 650 Surfacer should be accomplished using 320 grit until all scratches are removed. Pinholes should be filled with Sikkens Kombi Putty.
- 7) Upon completion of the sanding procedure, all welded seams should be caulked with a compatible urethane caulk that is non-hardening and remains flexible during any atmospheric condition.
- 8) After the unit is hand washed with Sikkens Antistatic using the two-rag method, and tack wipe remaining lint to remove any surface partials.
- 9) Any bare aluminum, stainless steel, or steel needs to be pretreated with Sikkens Autoprep Wipes. After a flash of 15-20 minutes the unit is then sealed with Autocoat LV 650 Sealer using a slow reducer appropriate for the temperature and job size.
- 10) Basecoat until hiding is achieved with Autocoat LV 650 Basecoat color mixed 3.5 parts of Autocoat LV650 Basecoat to 1 Part Autocoat LV650 Hardener to 1 Part Autocoat LV650 Reducer.
- 11) After 45 minutes Clearcoat with Autocoat LV650 Clearcoat Mixed 5 Parts of Autocoat LV650 Clearcoat to 2 Parts of Autocoat LV 650 Surfacer Hardener to 2 Parts of Autocoat LV650 Reducer
- 12) Unit should be allowed to dry 48 hours prior to applying decals.

### **Compartments**

The inside of the apparatus compartments shall be sprayed with gray spatter paint and finished with a clear coat finish. The clear coat allows the compartments a more durable and easier cleaned up finish.

### **Undercoating**

The inside and the underside of the apparatus body shall be sprayed with a rubberized vehicle undercoating to protect the body from corrosion. The inside of the body shall be sprayed level with the top of the water tank.

### **Lettering**

There shall be 3" vinyl encapsulated Gold Leaf lettering with black outline and drop shadow applied on the apparatus per department specifications.

There shall be additional large lettering at the sides of the apparatus body per the customer specifications. The letter size will be determined by the customer and the amount of available space.

(There shall be a picture supplied by the department of the style and what they want for lettering to the salesperson or to the manufacturer.)

### **Reflective Stripe**

There shall be applied one (1) 6" white Scotchlite stripe with ¼" black outline and shaded fold on the cab and body to enhance appearance and to be more visible in low light and dark conditions. There shall also be a reflective stripe installed at the front of the apparatus below the cab grille and at the rear panel area where applicable.

There shall be reflective striping installed on the inside of the cab doors per NFPA regulations, minimum of 96 square inches each door.

The entire rear of the apparatus body shall be covered with alternating 6" Red and Fluorescent Yellow/Green reflective material in an inverted "V" Chevron pattern. This shall be 3M Diamond Grade Scotch lite material for maximum reflectivity at the rear of the apparatus.

### **Danger Plates**

There shall be supplied and installed "Warning/Danger" plates on the apparatus.

There shall be one (1) plate installed in the cab within view of the driver stating the maximum number of passengers in vehicle.

There shall be one (1) plate installed in the cab within view of the driver stating the overall height, overall length and GVWR of the completed apparatus.

There shall be one (1) plate installed in the cab within view of all passengers stating; "DANGER-personnel must be seated and seat belts must be fastened while vehicle is in motion or Death or Serious Injury May Result".

There shall be one (1) plate installed at the rear of the apparatus body stating; "DANGER-do not ride on rear step while vehicle is in motion or Death or Serious Injury May Result.

There shall be one (1) plate installed in the cab of the apparatus stating all the fluid types and capacities for the apparatus chassis and optional equipment.

### **Chassis Position**

Upon delivery the chassis shall sit level when fully loaded with water and supplied equipment.

### ***Loose Equipment***

The following is a list of the loose equipment to be supplied with the apparatus upon delivery.

- One (1) Duo Safety model 900-A, 24' 2-section extension ladder
- One (1) Duo Safety model 775-A, 14' roof ladder
- One (1) Duo Safety model 585-A, 10' folding ladder
- One (1) Husky, 2100-gallon portable tank with 22oz liner with 28oz floor and aluminum frame
- Two (2) 6" x 10' lightweight flexible hard suction hose, long handle female swivel x rocker lug male
- One (1) 6" Red Head hi-volume low-level strainer
- One (1) Red Head adaptor 6" threaded to 5" storz
- Eight (8) lengths 100' x 5" LDH with 5" storz couplings
- Two (2) lengths 50' x 5" LDH with 5" storz couplings
- One (1) 16" gasoline powered Positive Pressure fan
- One (1) bag of miscellaneous nuts and bolts that are used in the construction of the apparatus

***\*Note: Any additional loose equipment items outlined in NFPA 1901 section 5.8 will be customer supplied and installed on the apparatus before the unit is placed into service. This equipment is not priced in this proposal!***

***The list consists of the following equipment items:***

- 800' x 2 ½" or larger fire hose
- 400' x 1 ½", 1 ¾" or 2" fire hose
- One (1) 200GPM hand line nozzle
- Two (2) 95GPM hand line nozzles
- One (1) Play pipe with shutoff and 1", 1 1/8" and 1 ¼" tips
- One (1) 6lb flathead axe with mounts
- One (1) 6lb pick head axe with mounts
- One (1) 6' pike pole with mounts
- Two (2) portable hand lights with brackets
- One (1) dry chemical fire extinguisher with a minimum 80B:C rating with bracket
- One (1) 2 ½ gallon water extinguisher with mount
- One (1) SCBA (complete) per seating position in cab
- One (1) spare SCBA cylinder per SCBA carried
- One (1) First Aid Kit
- Four (4) combination spanner wrenches with mounting bracket

- Two (2) hydrant wrenches with mounting bracket*
- One (1) 2 ½" double female adapter*
- One (1) 2 ½" double male adapter*
- One (1) Rubber Mallet*
- Two (2) Salvage covers, minimum 12' x 14'*
- One (1) 5-point breakaway Hi-Visibility Safety Vest per seating position on apparatus*
- Five (5) Fluorescent orange 28" high (minimum) traffic cones with 6" and 4" reflective bands*
- Five (5) Illuminated warning devices (example: road flares or illuminated traffic cones)*
- One (1) Automatic External Defibrillator (AED)*

6

6

FINANCE/PURCHASING & BUILDING COMMITTEE UNFINISHED BUSINESS

February 9, 2016

1. Review of City Fees

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
-----				
GENERAL FUND				
GENERAL FUND				
LIABILITIES				
JIM FORD	JIM OLSON FORD-LINCOLN, LLC	PBLC HRING SIGN RFND/JIM OLSON	01-000-000-23168	50.00
R0001362	LAURENCE BUSSE	SEASONAL SLIP REFUND/L BUSSE	01-000-000-46240	2,500.00
R0001362		STATE TAX REFUND/L BUSSE	01-000-000-24214	125.00
R0001362		COUNTY TAX REFUND/L BUSSE	01-000-000-24215	12.50
TOTAL LIABILITIES				2,687.50
BALLFIELD LIGHTING				
WPPI ENG	WPPI ENERGY	02/16 ATHLETIC FLD LIGHTING	01-000-981-70000	1,365.39
TOTAL BALLFIELD LIGHTING				1,365.39
TOTAL GENERAL FUND				4,052.89
MAYOR				
04696	DOOR COUNTY TREASURER	01/16 MAYOR INTERNET	01-100-000-56700	2.70
TOTAL				2.70
TOTAL MAYOR				2.70
LAW/LEGAL				
16555	PINKERT LAW FIRM, LLP	12/15 TRAFFIC MATTERS	01-110-000-55010	1,038.00
BUELOW	BUELOW, VETTER, BUIKEMA,	01/16 GENERAL LABOR LEGAL	01-110-000-57900	49.00
TOTAL				1,087.00
TOTAL LAW/LEGAL				1,087.00
CITY CLERK-TREASURER				
04696	DOOR COUNTY TREASURER	01/16 CLERK INTERNET	01-115-000-56700	10.90
17700	QUILL CORPORATION	TYPEWRITTER RIBBON	01-115-000-51950	11.38
BUBRICKS	BUBRICK'S COMPLETE OFFICE, INC	OFFICE SUPPLIES	01-115-000-51950	132.95
BUBRICKS		LABELS	01-115-000-51950	13.87
FIRST	FIRST NATIONAL BANK OF OMAHA	ANNL WGFAO MEMRSHIP/CLARIZIO	01-115-000-56000	25.00
FIRST		REDEMPTION CREDIT	01-115-000-56000	-25.00
TOTAL				169.10
TOTAL CITY CLERK-TREASURER				169.10
ADMINISTRATION				
04696	DOOR COUNTY TREASURER	01/16 ADMIN INTERNET	01-120-000-56700	2.70
TOTAL				2.70
TOTAL ADMINISTRATION				2.70

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
-----				
GENERAL FUND				
COMPUTER				
03101	CDW GOVERNMENT, INC.	HDMI VIDEO ADAPTER	01-125-000-54999	10.85
04696	DOOR COUNTY TREASURER	01/16 TECH SUPPORT	01-125-000-55550	2,575.00
		TOTAL		2,585.85
		TOTAL COMPUTER		2,585.85
CITY ASSESSOR				
04696	DOOR COUNTY TREASURER	01/16 ASSESS INTERNET	01-130-000-56700	5.40
ASSO APP	ASSOCIATED APPRAISAL	02/16/16 CONTRACT	01-130-000-55010	1,245.84
		TOTAL		1,251.24
		TOTAL CITY ASSESSOR		1,251.24
BUILDING/ZONING CODE ENFORCEMT				
04696	DOOR COUNTY TREASURER	01/16 INSPECTION	01-140-000-56700	2.70
		TOTAL		2.70
		TOTAL BUILDING/ZONING CODE ENFORCEMT		2.70
MUNICIPAL SERVICES ADMIN.				
04696	DOOR COUNTY TREASURER	01/16 ENGINEERING INTERNET	01-145-000-56700	5.40
CHADSHEF	CHAD SHEFCHIK	MEAL EXPENSES/SHEFCHIK	01-145-000-55600	72.79
SPETZ	BRIAN SPETZ	MEAL/PRKING EXPENSE/SPETZ	01-145-000-55600	79.47
		TOTAL		157.66
		TOTAL MUNICIPAL SERVICES ADMIN.		157.66
PUBLIC WORKS ADMINISTRATION				
04696	DOOR COUNTY TREASURER	01/16 MUN SVC INTERNET	01-150-000-56700	6.75
		TOTAL		6.75
		TOTAL PUBLIC WORKS ADMINISTRATION		6.75
CITY HALL				
05500	ENERGY CONTROL AND DESIGN INC	HEATING SYSTEM REPAIRS	01-160-000-58999	4,584.64
05500		AIR HANDLER MAINTENCE	01-160-000-58999	41.06
19880	STURGEON BAY UTILITIES	421 MICHIGAN ST	01-160-000-56150	2,570.50
19880		421 MICHIGAN ST	01-160-000-58650	159.42
WARNER	WARNER-WEXEL WHOLESALE &	PAPER PRODUCTS	01-160-000-54999	97.70
		TOTAL		7,453.32

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
-----				
GENERAL FUND				
			TOTAL CITY HALL	7,453.32
INSURANCE				
BH	BURKART HEISDORF INSURANCE	03/16 WORK COMP	01-165-000-58750	24,254.00
BH		03/16 GEN LIAB	01-165-000-56400	3,016.00
BH		03/16 POLICE LIAB	01-165-000-57150	1,138.00
BH		03/16 PUBLIC OFFICIAL	01-165-000-57400	1,145.00
BH		03/16 AUTO LIAB	01-165-000-55200	1,714.00
BH		03/16 AUTO PHY DAMAGE	01-165-000-55200	1,404.00
			TOTAL	32,671.00
			TOTAL INSURANCE	32,671.00
GENERAL EXPENDITURES				
04696	DOOR COUNTY TREASURER	01/16 CITY HALL PHONE SVC	01-199-000-58200	155.16
04696		01/16 FIRE PHONE SVC	01-199-000-58200	39.32
04696		01/16 MUN SVC PHONE SVC	01-199-000-58200	41.40
04696		01/16 POLICE PHONE SVC	01-199-000-58200	75.49
			TOTAL	311.37
			TOTAL GENERAL EXPENDITURES	311.37
POLICE DEPARTMENT				
02790	DAN BRINKMAN	MEAL EXPNSE/BRINKMAN	01-200-000-55600	6.50
04696	DOOR COUNTY TREASURER	01/16 POLICE DEPT	01-200-000-56700	37.80
15890	PACK AND SHIP PLUS	SHIPPING/CHF ANDREW SMITH/PRTR	01-200-000-57250	8.12
C JEANQ	CANDY JEANQUART	MEAL EXPNSE/C JEANQUART	01-200-000-55600	4.51
SPUDE	SARAH SPUDE-OLSON	MEAL EXPNSE/OLSON	01-200-000-55600	8.05
STAPLES	WISCONSIN DOCUMENT IMAGING LLC	BLACK COPIES	01-200-000-55650	52.91
STAPLES		COLOR COPIES	01-200-000-55650	67.07
WI TECH	WISCONSIN TECHNICAL COLLEGE	LAPTOP COMPUTERS	01-200-000-55500	315.00
			TOTAL	499.96
			TOTAL POLICE DEPARTMENT	499.96
POLICE DEPARTMENT/PATROL				
02005	BAY ELECTRONICS, INC.	RADIO REPAIR	01-215-000-57550	47.50
02005		RADIO BATTERY	01-215-000-57550	749.64
02208	BAYCOM INC.	CUPHOLDER/SQ #30	01-215-000-58600	31.00
04150	DE JARDIN CLEANERS LLC	UNIFORM MAINTENANCE-SOUTH	01-215-000-56800	5.00
06650	GALLS, AN ARAMARK COMPANY	SHIRT/SOUTH	01-215-000-52900	62.13
19880	STURGEON BAY UTILITIES	110 S NEENAH AVE CAMERA	01-215-000-56150	12.41
23640	WISCONSIN DEPT OF JUSTICE	TIME SYSTM ACCESS-JAN-MAR	01-215-000-58999	360.00
25650	GREG ZAGER	OUT OF FUEL EXPNSE/ZAGER	01-215-000-51650	10.00

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
-----				
GENERAL FUND				
JIM FORD	JIM OLSON FORD-LINCOLN, LLC	VEHICLE MAINTENANCE # 30	01-215-000-58600	80.84
JIM FORD		VEHICLE MAINT/B/W EXPLR	01-215-000-58600	24.95
JIM FORD		VEHICLE MAINTENANCE/#2005 EXPL	01-215-000-58600	20.00
JIM FORD		EXPEDITION WINDOW REPAIR	01-215-000-58600	257.00
		TOTAL		1,660.47
		TOTAL POLICE DEPARTMENT/PATROL		1,660.47
FIRE DEPARTMENT				
03075	CARQUEST OF DOOR COUNTY	FUEL FILTER	01-250-000-53000	20.79
03075		THROTTLE ASSEMBLY	01-250-000-53000	21.96
03075		THROTTLE ASSEMBLY	01-250-000-53000	2.60
04696	DOOR COUNTY TREASURER	01/16 FIRE DEPT	01-250-000-56700	16.20
16570	PIONEER FIRE COMPANY	CLOTHING ALLOWANCE UNIFORMS	01-250-000-52900	265.00
16570		UNIFORM SHIRT/GULLEY	01-250-000-52900	17.00
19880	STURGEON BAY UTILITIES	92 E MAPLE ST	01-250-000-56675	5.20
19880		421 MICHIGAN ST	01-250-000-56675	118.00
19880		421 MICHIGAN ST TRUCK FILL	01-250-000-56675	41.00
19880		N MADISON AVE SPRINKLG	01-250-000-56675	13.00
19880		10 PENNSYLVANIA ST DOCK	01-250-000-56675	13.00
19880		1018 GREEN BAY RD SIREN	01-250-000-56150	15.45
19880		323 S 1ST AVE EAST SIDE DOCK	01-250-000-56675	5.20
19880		107 N 1ST AVE MARINA/RSTRM	01-250-000-56675	42.00
19880		122 KENTUCKY ST CITY PKG RAMP	01-250-000-56675	5.20
19880		48 KENTUCKY ST DOCK	01-250-000-56675	13.00
19880		48 KENTUCKY ST CITY MARINA	01-250-000-56675	42.00
O'REILLY	O'REILLY AUTO PARTS	FUEL FILTER	01-250-000-53000	41.90
O'REILLY		FUSE	01-250-000-53000	3.29
PAULCONW	PAUL CONWAY SHIELDS	STRUCTURAL BOOTS	01-250-000-52900	364.50
		TOTAL		1,066.29
		TOTAL FIRE DEPARTMENT		1,066.29
STREET MACHINERY				
02005	BAY ELECTRONICS, INC.	TWO WAY RADIO REPAIR	01-450-000-57550	95.00
04603	HALRON LUBRICANTS INC	PICK UP USED FILTERS	01-450-000-53000	35.00
O'REILLY	O'REILLY AUTO PARTS	CREDIT RETURN RACK	01-450-000-53000	-6.99
O'REILLY		MAGNET TRAY	01-450-000-53000	15.98
R0000655	TRANSMOTION, LLC	FEMALE ADAPTR/GRADER	01-450-000-53000	9.01
		TOTAL		148.00
		TOTAL STREET MACHINERY		148.00
CITY GARAGE				
06012	FASTENAL COMPANY	HARDWARE	01-460-000-52350	4.30
06012		HARDWARE	01-460-000-52350	26.28
19297	SHORE TO SHORE RENTAL, INC	TORCH TIP	01-460-000-56250	12.95

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
-----				
GENERAL FUND				
38290	HI TEC FABRICATION	LIFTING EYE	01-460-000-52350	128.88
APPLETON	APPLETON COMPRESSOR	1 COMPRESSOR PRE FILTER	01-460-000-54999	166.00
APPLETON		1 COMPRESSOR AFTER FILTER	01-460-000-54999	166.00
APPLETON		FREIGHT	01-460-000-54999	13.39
TOTAL				517.80
TOTAL CITY GARAGE				517.80

HIGHWAYS - GENERAL

19880	STURGEON BAY UTILITIES	OLD HWY RD SIGN	01-499-000-58000	11.64
19880		808 S DULUTH AVE	01-499-000-58000	9.56
19880		1536 EGG HRBR RD TRAFFIC LITE	01-499-000-58000	12.30
19880		N 14TH & EGG HRBR TRF LITE	01-499-000-58000	34.57
19880		OVERHEAD ST LIGHTS	01-499-000-58000	8,436.38
19880		WALNUT DR & LANSING SIGN	01-499-000-58000	6.13
19880		323 S 1ST AVE EAST SIDE DOCK	01-499-000-58000	90.05
19880		311 S 1ST AVE SHIPYARD DVLP	01-499-000-58000	67.17
TOTAL				8,667.80
TOTAL HIGHWAYS - GENERAL				8,667.80

PARK & RECREATION ADMIN

04696	DOOR COUNTY TREASURER	01/16 PARKS INTERNET	01-500-000-56700	4.05
23715	WISCONSIN PARK & REC ASSN	2016 MEMBERSHIP	01-500-000-56000	150.00
TOTAL				154.05
TOTAL PARK & RECREATION ADMIN				154.05

PARKS AND PLAYGROUNDS

01469	AIRGAS NORTH CENTRAL	HAZMAT CHARGE	01-510-000-58999	93.38
01766	AURORA MEDICAL GROUP	PRE EPLY SCRN-BORDEAU	01-510-000-57100	67.00
01766		PRE-EMPLY SCRN-MCFARLIN	01-510-000-57100	67.00
03075	CARQUEST OF DOOR COUNTY	REPLACEMENT MIRROR	01-510-000-53000	128.79
03075		STEEL WOOL	01-510-000-53000	5.50
08225	HERLACHE SMALL ENGINE	CHAIN FILE & GAUGE	01-510-000-52700	59.80
13049	MAY'S SPORT CENTER	SAW CHAINS	01-510-000-52700	52.90
19240	SERVICE MOTOR CO	CUTTING EDGE	01-510-000-53000	35.95
19240		PLOW BOLT	01-510-000-53000	13.80
19880	STURGEON BAY UTILITIES	MEM FLD COMPLEX	01-510-000-56150	237.58
R0001363	MOLLY BORDEAU	WORK PERMIT REIMBRSE/M BORDEAU	01-510-000-54999	10.00
TOTAL				771.70
TOTAL PARKS AND PLAYGROUNDS				771.70

MUNICIPAL DOCKS

INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
<b>GENERAL FUND</b>				
16725	ESP PRODUCTS, INC	2015 DOCK REMOVAL	01-550-000-55900	625.00
		TOTAL		625.00
		TOTAL MUNICIPAL DOCKS		625.00
<b>WATERFRONT PARKS &amp; WALKWAYS</b>				
19880	STURGEON BAY UTILITIES	W LARCH ST WALKWAY LTS	01-570-000-56150	160.06
19880		W LARCH ST PARKING LOT	01-570-000-56150	100.85
19880		48 KENTUCKY ST WTR FRONT	01-570-000-56150	425.97
19880		107 N 1ST AVE MARINA/RSTRM	01-570-000-56150	230.97
19880		107 N 1ST AVE MARINA/RSTRM	01-570-000-58650	51.40
19880		122 KENTUCKY ST CITY PKG RAMP	01-570-000-56150	607.77
		TOTAL		1,577.02
		TOTAL WATERFRONT PARKS & WALKWAYS		1,577.02
<b>COMMUNITY &amp; ECONOMIC DEVLPMT</b>				
04696	DOOR COUNTY TREASURER	01/16 COMM DEV INTERNET	01-900-000-56700	5.40
BUBRICKS	BUBRICK'S COMPLETE OFFICE, INC	BLACK INK CARTRIDGE	01-900-000-51950	19.95
BUBRICKS		YELLOW INK CARTRIDGE	01-900-000-51950	20.57
BUBRICKS		#10 ENVELOPES	01-900-000-51950	8.44
		TOTAL		54.36
		TOTAL COMMUNITY & ECONOMIC DEVLPMT		54.36
		TOTAL GENERAL FUND		65,496.73
<b>CAPITAL FUND</b>				
<b>FIRE DEPARTMENT</b>				
<b>EXPENSE</b>				
01765	ATLAS OUTFITTERS	ICE RESCUE EQUIP	10-250-000-59050	324.00
01765		RESCUE HELMETS	10-250-000-59050	152.00
02005	BAY ELECTRONICS, INC.	PORTABLE RADIOS	10-250-000-59055	2,732.00
04966	EAGLE MECHANICAL INC	FURNACE REPLACEMENT-WST SIDE	10-250-000-59020	3,512.00
PAULCONW	PAUL CONWAY SHIELDS	STREAMLIGHT -LIGHT BOX	10-250-000-59070	543.32
PAULCONW		FLIR CAMERA	10-250-000-59070	4,873.14
		TOTAL EXPENSE		12,136.46
		TOTAL FIRE DEPARTMENT		12,136.46
<b>ROADWAYS/STREETS</b>				
<b>EXPENSE</b>				
02130	BAUDHUIN INC	EGG HARBOR RD	10-400-000-59096	693.00
		TOTAL EXPENSE		693.00

DATE: 02/05/2016  
TIME: 08:59:19  
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CITY OF STURGEON BAY  
DEPARTMENT SUMMARY REPORT

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INVOICES DUE ON/BEFORE 02/16/2016

VENDOR #	NAME	ITEM DESCRIPTION	ACCOUNT #	AMOUNT DUE
CAPITAL FUND				
ANNUAL RESURFACING & BASE REP.				
ANNUAL RESURFACING & BASE REP.				
19880	STURGEON BAY UTILITIES	ELECTRICAL INSTALL-CADENCE	10-400-110-59095	26,757.89
TOTAL ANNUAL RESURFACING & BASE REP.				26,757.89
TOTAL ROADWAYS/STREETS				27,450.89
TOTAL CAPITAL FUND				39,587.35
CABLE TV				
CABLE TV / GENERAL				
CABLE TV / GENERAL				
03159	CHARTER COMMUNICATIONS	01/16 CB MUSIC SVC	21-000-000-58999	179.54
04696	DOOR COUNTY TREASURER	01/16 PEG INTERNET	21-000-000-56700	100.00
TOTAL CABLE TV / GENERAL				279.54
TOTAL CABLE TV / GENERAL				279.54
TOTAL CABLE TV				279.54
TID #4 DISTRICT				
--- UNDEFINED CODE ---				
--- UNDEFINED CODE ---				
DEGROOT	DE GROOT, INC	TRANSITION LINER	28-199-000-51525	3,152.00
TOTAL --- UNDEFINED CODE ---				3,152.00
TOTAL --- UNDEFINED CODE ---				3,152.00
TID #4 DISTRICT				
CEDARCO	CEDAR CORPORATION	PROF SVC THRU 1.16.16	28-340-000-55001	4,131.82
DEGROOT	DE GROOT, INC	WST WTRFRNT SANI & STORM SWR	28-340-000-59115	56,824.93
WI DNR	STATE OF WISCONSIN	OVERSIGHT FEES	28-340-000-59130	1,732.50
WI DNR		OVERSIGHT FEES	28-340-000-59130	1,732.50
TOTAL				64,421.75
TOTAL TID #4 DISTRICT				64,421.75
TOTAL TID #4 DISTRICT				67,573.75
SOLID WASTE ENTERPRISE				
SOLID WASTE ENTERPRISE FUND				
SOLID WASTE ENTERPRISE FUND				
JX ENT	JX ENTERPRISES, INC.	CLEAN EXHAUST SYSTEM	60-000-000-53000	1,947.01
TOTAL SOLID WASTE ENTERPRISE FUND				1,947.01
TOTAL SOLID WASTE ENTERPRISE FUND				1,947.01
TOTAL SOLID WASTE ENTERPRISE				1,947.01
TOTAL ALL FUNDS				174,884.38

**MANUAL CHECKS**

FIRST BANK 02/03/16 Check # 78963 Statement Charges 01-250-000-52900	\$131.75
SHELL FLEET PLUS 02/03/16 Check # 78964 Statement Charges 01-215-000-51650	\$20.88
US BANK EQUIPMENT FINANCE 02/03/16 Check # 78965 Personal Property Tax 01-200-000-55650	\$146.74
DELTA DENTAL 02/03/16 Check #78966 February Dental Insurance Various Departmental Accounts	\$5,400.72
<b>TOTAL MANUAL CHECKS</b>	<b>\$5,700.09</b>

