

HME, Inc.

== Freightliner Chassis for Model 34F - 4.001 ==

SIDE HILL PERFORMANCE

Upon completion of the apparatus, the department requires that the apparatus be "Tilt Table" tested in a fully loaded condition with the engine not running. Fully loaded condition shall be defined as stated in NFPA 1901, Section 4.12, Vehicle Stability. The apparatus must meet the minimum required side hill performance requirement of 30 degrees tilt in a fully loaded condition before lifting a front or rear tire. The tilt table test must be conducted and certified by a third party.

If the completed apparatus fails to meet the minimum side hill performance requirements, the contractor shall have no more than a total of 30 business days to correct all deficiencies and re-submit a compliant apparatus. If the contractor cannot deliver a compliant apparatus within the 30 business day time frame, the State shall initiate termination for default.

APPARATUS VOCATION AND BASIC ATTRIBUTES

When completed this HME Ahrens-Fox fire apparatus shall have the following attributes:

Order Information:

Apparatus Builder: **HME, Incorporated**
Sales Representative: Factory

User Information:

End User: HME, Incorporated
Mailing Address: 1950 Byron Center Ave.
City: Wyoming
State: MI
Zip Code: 49519
F.D. Contact: Bill Doeblor
Phone Number: 616-534-1463
Contacts email: bdoebler@hmetruck.com

Hose well options:

Indicate the hose that shall be installed in the well.

Hosewell Location:

x - Officer's

x - Center

x - Driver's

Hose Brand:

Hose Model:

Hose Size: inch

Number of feet required:

If more than one hosewell is ordered indicate on a separate piece of paper the information for the other well.

Is there an overall height restriction?

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DO NOT MAKE AN ASSUMPTION ON A HEIGHT ISSUE PLEASE ENTER THE INFORMATION

NA - Inches ground to the top of the highest part of apparatus when fully loaded

Are there minimum angle of approach or departure angle requirements?

If so fill in the blank.

Minimum angle of approach - ___NFPA___degrees

Minimum angle of departure - ___NFPA___degrees

PAINT CODES AND BASIC ATTRIBUTES

Paint Information

Paint Manufacturer: **PPG is HME Standard Paint**

BODY PAINT

Color Body Panels Color:* Harvester Red

Color Body Panels Code:* L5994EB

If the hosebed sides are painted are they the same color as the body panels?:

If not complete the following:

Hosebed Wall Color:* Harvester Red

Hosebed Wall Code:* L5994EB

CONSTRUCTION DETAILS

Details of construction such as, but not limited to mounting positions for siren heads, grab handles, switches, labeling and materials where not otherwise specifically detailed in the written specifications at time of order, shall be left to the discretion of the manufacturer who shall be solely responsible for the design, construction and placement of the components.

COMMERCIAL CHASSIS DESCRIPTION

The following Freightliner chassis shall be provided:

Vehicle

Configuration

001-172	M2 106 CONVENTIONAL CHASSIS
004-220	2020 MODEL YEAR SPECIFIED
002-004	SET BACK AXLE - TRUCK
019-002	STRAIGHT TRUCK PROVISION
003-001	LH PRIMARY STEERING LOCATION

General

Service

AA1-002	TRUCK CONFIGURATION
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AA6-001 DOMICILED, USA 50 STATES (INCLUDING CALIFORNIA AND CARB OPT-IN STATES)
A85-020 FIRE SERVICE
A84-1EV EMERGENCY VEHICLES BUSINESS SEGMENT
AA4-002 LIQUID BULK COMMODITY
AA5-006 TERRAIN/DUTY: 10% (SOME) OF THE TIME, IN TRANSIT, IS SPENT ON NON-PAVED ROADS
AB1-008 MAXIMUM 8% EXPECTED GRADE
AB5-003 MAINTAINED GRAVEL OR CRUSHED ROCK - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE
995-091 MEDIUM TRUCK WARRANTY
A66-99D EXPECTED FRONT AXLE(S) LOAD : 12000.0 lbs
A68-99D EXPECTED REAR DRIVE AXLE(S) LOAD : 23000.0 lbs
A63-99D EXPECTED GROSS VEHICLE WEIGHT CAPACITY : 35000.0 lbs

Truck Service

AA3-027 FIRE TANK/PUMPER - MAIN DRIVELINE DRIVEN SPLIT-SHAFT PTO/PUMP
A88-99D EXPECTED TRUCK BODY LENGTH : 15.0 ft
* AF3-2CP DEALER STOCK TRUCK - UPFIT UNDETERMINED
AF7-99D EXPECTED BODY/PAYLOAD CG HEIGHT ABOVE FRAME "XX" INCHES : 32.0 in

Engine

101-23B CUM L9 350EV HP @ 2000 RPM, 2200 GOV RPM , 1000 LB/FT @ 1400 RPM

Electronic Parameters

79A-068 68 MPH ROAD SPEED LIMIT
79B-000 CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT
79K-006 PTO MODE ENGINE RPM LIMIT - 1000 RPM
79M-001 PTO MODE BRAKE OVERRIDE - SERVICE BRAKE APPLIED
79P-002 PTO RPM WITH CRUISE SET SWITCH - 700 RPM
79Q-003 PTO RPM WITH CRUISE RESUME SWITCH - 800 RPM
79S-001 PTO MODE CANCEL VEHICLE SPEED - 5 MPH
79U-007 PTO GOVERNOR RAMP RATE - 250 RPM PER SECOND
80G-002 PTO MINIMUM RPM - 700
80H-004 CUMMINS EMERGENCY VEHICLE THROTTLE CONTROL OPTION
80J-002 REGEN INHIBIT SPEED THRESHOLD - 5 MPH

Engine Equipment

99C-017 2016 ONBOARD DIAGNOSTICS/2010 EPA/CARB/FINAL GHG17 CONFIGURATION

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99D-012 2008 CARB EMISSION CERTIFICATION - EXEMPTED VEHICLE; NO CLEAN IDLE LABEL REQUIRED

1.30E+00 STANDARD OIL PAN

105-001 ENGINE MOUNTED OIL CHECK AND FILL

133-004 ONE PIECE VALVE COVER

014-1BX SIDE OF HOOD AIR INTAKE WITH NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER

124-1G1 DR 12V 300 AMP 40-SI BRUSHLESS PAD MOUNT ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE

292-203 (3) DTNA GENUINE, FLOODED STARTING, MIN 2250CCA, 510RC, THREADED STUD BATTERIES

290-1D3 STEEL BATTERY BOX WITH ENCLOSED TRAY

281-001 STANDARD BATTERY JUMPERS

* 282-049 SINGLE BATTERY BOX FRAME MOUNTED LH SIDE UNDER AFT DOOR OF CREW CAB

291-017 WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN

289-012 NON-POLISHED DIAMOND PLATE BATTERY BOX COVER

87P-001 CAB AUXILIARY POWER CABLE

33M-001 AUXILIARY POWER NET DISTRIBUTION BLOCK FOR BODY BUILDER USE

293-060 POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH WITH LOCKING PROVISION MOUNTED OUTBOARD DRIVER SEAT

295-029 POSITIVE AND NEGATIVE POSTS FOR JUMPSTART LOCATED ON FRAME NEXT TO STARTER

107-032 CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE

108-002 STANDARD MECHANICAL AIR COMPRESSOR GOVERNOR

131-013 AIR COMPRESSOR DISCHARGE LINE

152-039 GVG, FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING

128-1AR CUMMINS EXHAUST BRAKE INTEGRAL WITH VARIABLE GEOMETRY TURBO WITH ON/OFF DASH SWITCH, ACTIVATES STOP LAMPS

016-1C3 RH OUTBOARD UNDER STEP MOUNTED HORIZONTAL AFTERTREATMENT SYSTEM ASSEMBLY WITH RH HORIZONTAL TAILPIPE

28F-007 ENGINE AFTERTREATMENT DEVICE, AUTOMATIC OVER THE ROAD ACTIVE REGENERATION AND DASH MOUNTED SINGLE REGENERATION REQUEST/INHIBIT SWITCH

239-001 STANDARD EXHAUST SYSTEM LENGTH

N 237-052 RH STANDARD HORIZONTAL TAILPIPE

23U-002 13 GALLON DIESEL EXHAUST FLUID TANK

30N-003 100 PERCENT DIESEL EXHAUST FLUID FILL

23Z-002 NON-POLISHED ALUMINUM DIESEL EXHAUST FLUID TANK COVER

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43X-002 LH MEDIUM DUTY STANDARD DIESEL EXHAUST FLUID TANK LOCATION
23Y-001 STANDARD DIESEL EXHAUST FLUID PUMP MOUNTING
43Y-001 STANDARD DIESEL EXHAUST FLUID TANK CAP
273-018 HORTON DRIVEMASTER ADVANTAGE ON/OFF FAN DRIVE
276-002 AUTOMATIC FAN CONTROL WITH DASH SWITCH AND INDICATOR LIGHT,
NON ENGINE MOUNTED

110-003 CUMMINS SPIN ON FUEL FILTER
118-008 COMBINATION FULL FLOW/BYPASS OIL FILTER
266-013 1100 SQUARE INCH ALUMINUM RADIATOR
103-039 ANTIFREEZE TO -34F, OAT (NITRITE AND SILICATE FREE) EXTENDED LIFE
COOLANT

171-007 GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT
172-001 CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES
270-008 AUXILIARY ENGINE COOLING USING WATER FROM FIRE PUMP
168-002 LOWER RADIATOR GUARD
138-011 PHILLIPS-TEMRO 1000 WATT/115 VOLT BLOCK HEATER
140-053 BLACK PLASTIC ENGINE HEATER RECEPTACLE MOUNTED UNDER LH DOOR
134-001 ALUMINUM FLYWHEEL HOUSING
132-004 ELECTRIC GRID AIR INTAKE WARMER
155-058 DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH

Transmission

342-1KD ALLISON 3000 EVS AUTOMATIC TRANSMISSION WITH PTO PROVISION

Transmission Equipment

343-331 ALLISON VOCATIONAL PACKAGE 198 - AVAILABLE ON 3000/4000 PRODUCT
FAMILIES WITH VOCATIONAL MODEL EVS
84B-003 ALLISON VOCATIONAL RATING FOR FIRE TRUCK/EMERGENCY VEHICLE
APPLICATIONS AVAILABLE WITH ALL PRODUCT FAMILIES
84C-022 PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 5,
AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
84D-027 SECONDARY MODE GEARS, LOWEST GEAR 1, START GEAR 2, HIGHEST GEAR
5, AVAILABLE FOR 3000/4000 PRODUCT FAMILIES ONLY
8.40E+01 PRIMARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS
DEFINED BY ENGINE AND VOCATIONAL USAGE
84F-000 SECONDARY SHIFT SCHEDULE RECOMMENDED BY DTNA AND ALLISON, THIS
DEFINED BY ENGINE AND VOCATIONAL USAGE
84G-000 PRIMARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS
DEFINED BY ENGINE AND VOCATIONAL USAGE
84H-000 SECONDARY SHIFT SPEED RECOMMENDED BY DTNA AND ALLISON, THIS
DEFINED BY ENGINE AND VOCATIONAL USAGE

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84J-000	ENGINE BRAKE RANGE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84K-000	ENGINE BRAKE RANGE ALTERNATE PRESELECT RECOMMENDED BY DTNA AND ALLISON, THIS DEFINED BY ENGINE AND VOCATIONAL USAGE
84L-010	DISABLE - LOAD BASED SHIFT SCHEDULE, DISABLE - VEHICLE ACCELERATION CONTROL
84N-000	NEUTRAL AT STOP - DISABLED, FUELSENSE - DISABLED
84U-000	DRIVER SWITCH INPUT - DEFAULT - NO SWITCHES
353-023	VEHICLE INTERFACE WIRING CONNECTOR WITHOUT BLUNT CUTS, AT END OF FRAME
34C-001	ELECTRONIC TRANSMISSION CUSTOMER ACCESS CONNECTOR FIREWALL MOUNTED
362-035	CUSTOMER INSTALLED CHELSEA 277 SERIES PTO
363-002	PTO MOUNTING, RH SIDE OF MAIN TRANSMISSION
341-018	MAGNETIC PLUGS, ENGINE DRAIN, TRANSMISSION DRAIN, AXLE(S) FILL AND DRAIN
345-003	PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED
97G-004	TRANSMISSION PROGNOSTICS - ENABLED 2013
370-015	WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK
375-006	MERITOR MTC-4210 AND MTC-4213 TRANSFER CASE OIL COOLER
346-013	TRANSMISSION OIL CHECK AND FILL WITH CROSSOVER TO CLEAR LH PTO AND DIRECT MOUNT PUMP
373-042	MERITOR MTC 4210XL-EVO 2-SPEED TRANSFER CASE
376-001	TRANSFER CASE SHIFT CONTROLS WITH TRANSFER CASE PTO ON/OFF SWITCH WHEN APPLICABLE
35T-001	SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)

Front Axle and Equipment

400-104	MX-12-120HR-EVO 12,000# 1790MM KPI SINGLE FRONT DRIVE AXLE WITH HR CARRIER
398-488	4.88 FRONT AXLE RATIO
389-079	MXL 16T MERITOR EXTENDED LUBE FRONT STEERING AXLE DRIVELINE WITH HALF ROUND YOKES
402-087	MERITOR 16.5X5 Q+ MX DRIVE AXLE CAST SPIDER HEAVY DUTY CAM FRONT BRAKES
403-026	FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING
419-015	MERITOR CAST IRON FRONT BRAKE DRUMS
427-001	FRONT BRAKE DUST SHIELDS
409-006	FRONT OIL SEALS
416-022	STANDARD SPINDLE NUTS FOR ALL AXLES
405-002	MERITOR AUTOMATIC FRONT SLACK ADJUSTERS

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536-050 TRW THP-60 POWER STEERING
539-003 POWER STEERING PUMP
534-015 2 QUART SEE THROUGH POWER STEERING RESERVOIR
40T-002 SYNTHETIC 75W-90 FRONT AXLE LUBE

Front Suspension

620-1F0 12,000# DUAL TAPERLEAF FRONT SUSPENSION
619-005 MAINTENANCE FREE RUBBER BUSHINGS - FRONT SUSPENSION
410-001 FRONT SHOCK ABSORBERS

Rear Axle and Equipment

420-037 RS-23-161 23,000# R-SERIES SINGLE REAR AXLE
421-489 4.89 REAR AXLE RATIO
424-001 IRON REAR AXLE CARRIER WITH STANDARD AXLE HOUSING
386-073 MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES
382-073 MXL 17T MERITOR EXTENDED LUBE INTERTRANSMISSION DRIVELINE WITH HALF ROUND YOKES
452-001 DRIVER CONTROLLED TRACTION DIFFERENTIAL - SINGLE REAR AXLE
878-018 (1) DRIVER CONTROLLED DIFFERENTIAL LOCK REAR VALVE FOR SINGLE DRIVE AXLE
* 87B-019 BLINKING LAMP WITH EACH MODE SWITCH, DIFFERENTIAL UNLOCK WITH IGNITION OFF, ACTIVE <5 MPH, DEACTIVATE >15 MPH
423-020 MERITOR 16.5X7 Q+ CAST SPIDER CAM REAR BRAKES, DOUBLE ANCHOR, FABRICATED SHOES
433-025 FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING
434-012 BRAKE CAMS AND CHAMBERS ON REAR SIDE OF DRIVE AXLE(S)
451-025 GUNITE HEAVY WEIGHT CAST IRON REAR BRAKE DRUMS
425-002 REAR BRAKE DUST SHIELDS
440-006 REAR OIL SEALS
426-1B2 BENDIX EVERSURE LONGSTROKE 1-DRIVE AXLE SPRING PARKING CHAMBERS
428-002 MERITOR AUTOMATIC REAR SLACK ADJUSTERS
41T-002 SYNTHETIC 75W-90 REAR AXLE LUBE

Rear Suspension

622-1DC 26,000# FLAT LEAF SPRING REAR SUSPENSION WITH HELPER AND RADIUS ROD
621-001 SPRING SUSPENSION - NO AXLE SPACERS
431-001 STANDARD AXLE SEATS IN AXLE CLAMP GROUP

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	623-005	FORE/AFT CONTROL RODS
Brake System		
	018-002	AIR BRAKE PACKAGE
	490-100	WABCO 4S/4M ABS
	871-001	REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES
	904-001	FIBER BRAID PARKING BRAKE HOSE
	412-001	STANDARD BRAKE SYSTEM VALVES
	46D-001	STANDARD AIR SYSTEM PRESSURE PROTECTION AND 85 PSI PRESSURE PROTECTION FOR AIR HORN(S)
	413-002	STD U.S. FRONT BRAKE VALVE
	432-003	RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE
	480-086	BW AD-9SI BRAKE LINE AIR DRYER WITH HEATER
*	479-003	AIR DRYER MOUNTED INBOARD ON LH RAIL
	460-057	STEEL AIR BRAKE RESERVOIRS MOUNTED UNDER CAB STEPS AND INSIDE FRAME JUST FORWARD OF REAR SUSPENSION
	477-004	PULL CABLES ON ALL AIR RESERVOIR(S)
Trailer Connections		
	335-004	UPGRADED CHASSIS MULTIPLEXING UNIT
	32A-002	UPGRADED BULKHEAD MULTIPLEXING UNIT
Wheelbase & Frame		
	545-450	4500MM (177 INCH) WHEELBASE
	546-101	11/32X3-1/2X10-15/16 INCH STEEL FRAME (8.73MMX277.8MM/0.344X10.94 INCH) 120KSI
	547-001	1/4 INCH (6.35MM) C-CHANNEL INNER FRAME REINFORCEMENT
	552-XXX	(42 INCH) REAR FRAME OVERHANG
	55W-007	FRAME OVERHANG RANGE: 42 INCH
	549-093	8 INCH BOLT ON FRONT FRAME EXTENSION
	AC8-99D	CALC'D BACK OF CAB TO REAR SUSP C/L (CA) : 64.41 in
	AE8-99D	CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA) : 59.91 in
	AM6-99D	CALC'D SPACE AVAILABLE FOR DECKPLATE : 64.2 in
	FSS-0LH	CALCULATED FRAME SPACE LH SIDE : 67.36 in
	FSS-0RH	CALCULATED FRAME SPACE RH SIDE : 181.98 in
	553-001	SQUARE END OF FRAME
	550-001	FRONT CLOSING CROSSMEMBER
	559-003	LIGHTWEIGHT HEAVY DUTY ALUMINUM ENGINE CROSSMEMBER
	561-001	STANDARD CROSSMEMBER BACK OF TRANSMISSION

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562-001 STANDARD MIDSHIP #1 CROSSMEMBER(S)
572-001 STANDARD REARMOST CROSSMEMBER
565-001 STANDARD SUSPENSION CROSSMEMBER

Chassis Equipment

556-997 OMIT FRONT BUMPER, CUSTOMER INSTALLED SPECIAL BUMPER, DOES NOT COMPLY WITH FMCSR 393.203
558-001 FRONT TOW HOOKS - FRAME MOUNTED
574-001 BUMPER MOUNTING FOR SINGLE LICENSE PLATE
586-024 FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS
551-007 GRADE 8 THREADED HEX HEADED FRAME FASTENERS
N 601-009 CUSTOMER REQUESTS (1) COPY STANDARD BODY BUILDER DIAGRAM 2D DXF/PDF FORMAT ELECTRONICALLY TRANSMITTED
970-038 TANK BODY 0 TO 1500 GALLONS

Fuel Tanks

204-152 70 GALLON/264 LITER ALUMINUM FUEL TANK - LH
***** 218-006 25 INCH DIAMETER FUEL TANK(S)
215-005 PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS
212-007 FUEL TANK(S) FORWARD
664-001 PLAIN STEP FINISH
205-001 FUEL TANK CAP(S)
***** 122-1J1 DETROIT FUEL/WATER SEPARATOR WITH WATER IN FUEL SENSOR, HAND PRIMER AND 12 VOLT PREHEATER
216-020 EQUIFLO INBOARD FUEL SYSTEM
11F-998 NO NATURAL GAS VEHICLE FUEL TANK VENT LINE/STACK
2.00E-03 AUXILIARY FUEL SUPPLY AND RETURN PORTS LOCATED ON LH FUEL TANK
202-016 HIGH TEMPERATURE REINFORCED NYLON FUEL LINE
221-008 FUEL COOLER MOUNTED LEFT HAND IN RAIL

Tires

093-1UY MICHELIN X MULTI D 11R22.5 16 PLY RADIALFRONT TIRES (NORTH AMERICAN ONLY)
094-1UY MICHELIN X MULTI D 11R22.5 16 PLY RADIAL REAR TIRES (NORTH AMERICAN ONLY)

Hubs

418-015 MERITOR IRON FRONT HUBS
450-060 CONMET PRESET PLUS PREMIUM IRON REAR HUBS

Wheels

502-1F2 MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 6.20 INSET 2-HAND STEEL DISC FRONT WHEELS

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505-1F2 MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 6.20 INSET 2-HAND STEEL DISC REAR WHEELS

496-011 FRONT WHEEL MOUNTING NUTS

497-011 REAR WHEEL MOUNTING NUTS

Cab Exterior

829-079 154 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB

650-008 AIR CAB MOUNTING

705-012 CAB ROOF REINFORCEMENTS FOR ROOF MOUNTED COMPONENTS

648-002 NONREMOVABLE BUGSCREEN MOUNTED BEHIND GRILLE

678-067 SAFETY YELLOW LH AND RH INTERIOR GRAB HANDLES AND LH AND RH EXTERIOR NON-SLIP GRAB HANDLES

646-023 HOOD MOUNTED CHROMED PLASTIC GRILLE

65X-003 CHROME HOOD MOUNTED AIR INTAKE GRILLE

644-004 FIBERGLASS HOOD

690-017 HOOD LINER, ADDED FIREWALL AND FLOOR HEAT INSULATION

727-036 VALVE AND PLUMBING FOR CUSTOMER FURNISHED AIR HORN, PIPING CAPPED AT FIREWALL

726-002 DUAL ELECTRIC HORNS

657-1CV DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME WITH (4) KEYS

575-001 REAR LICENSE PLATE MOUNT END OF FRAME

312-038 INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL

302-047 LED AERODYNAMIC MARKER LIGHTS

311-001 DAYTIME RUNNING LIGHTS

294-094 OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING WITH SEPARATE STOP/TAIL WIRES TO 7 FEET BEYOND END OF FRAME

300-015 STANDARD FRONT TURN SIGNAL LAMPS

744-103 DUAL WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LED LIGHTS AND LH AND RH REMOTE

797-001 DOOR MOUNTED MIRRORS

796-001 102 INCH EQUIPMENT WIDTH

743-204 LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS

729-001 STANDARD SIDE/REAR REFLECTORS

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677-055 RH AFTERTREATMENT SYSTEM CAB ACCESS WITH POLISHED DIAMOND PLATE COVER

768-043 63X14 INCH TINTED REAR WINDOW

661-003 TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS

654-003 MANUAL DOOR WINDOW REGULATORS

663-013 TINTED WINDSHIELD

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Cab Interior

659-019	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED
707-1AK	OPAL GRAY VINYL INTERIOR
706-026	MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR
708-026	MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR
772-006	BLACK MATS WITH SINGLE INSULATION
691-008	FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING
694-010	IN DASH STORAGE BIN
693-023	LH DOOR MAP POCKET
742-007	(2) CUP HOLDERS LH AND RH DASH
680-006	GRAY/CHARCOAL FLAT DASH
860-004	SMART SWITCH EXPANSION MODULE
700-002	HEATER, DEFROSTER AND AIR CONDITIONER
701-008	STANDARD HVAC DUCTING WITH SNOW SHIELD FOR FRESH AIR INTAKE
703-005	MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH
170-015	STANDARD HEATER PLUMBING
130-033	DENSO HEAVY DUTY AIR CONDITIONER COMPRESSOR
702-002	BINARY CONTROL, R-134A
739-034	PREMIUM INSULATION
285-013	SOLID-STATE CIRCUIT PROTECTION AND FUSES
280-007	12V NEGATIVE GROUND ELECTRICAL SYSTEM
324-047	DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER
655-001	CAB DOOR LATCHES WITH MANUAL DOOR LOCKS
284-101	(1) 12V POWER SUPPLY (1) DUAL 2.1 AMP USB CHARGER IN DASH
756-1E7	SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT WITH NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR
760-1F1	SEATS INC 911 UNIVERSAL SERIES HIGH BACK NON SUSPENSION PASSENGER SEAT WITH UNDERSEAT STORAGE AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSOR
762-120	SEATS INC 911 HIGH BACK NON SUSPENSION LH, RH AND CENTER REAR PASSENGER SEATS WITH UNDER SEAT STORAGE AND NFPA 1901-2009/2016 COMPLIANT SEAT SENSORS
711-004	LH AND RH INTEGRAL DOOR PANEL ARMRESTS
758-023	GRAY VINYL DRIVER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST

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761-022	GRAY VINYL FRONT PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
755-022	GRAY VINYL REAR PASSENGER SEAT COVER WITH GRAY CORDURA CLOTH BOLSTER AND HEADREST
763-105	NFPA 1901-2009 HIGH VISIBILITY ORANGE SEAT BELTS
532-002	ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN
540-015	4-SPOKE 18 INCH (450MM) STEERING WHEEL
765-002	DRIVER AND PASSENGER INTERIOR SUN VISORS

Instruments & Controls

732-004	GRAY DRIVER INSTRUMENT PANEL
734-004	GRAY CENTER INSTRUMENT PANEL
87L-003	ENGINE REMOTE INTERFACE WITH PARK BRAKE AND NEUTRAL INTERLOCKS
870-001	BLACK GAUGE BEZELS
486-001	LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM
840-002	2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES
198-003	DASH MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS
149-013	ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL
156-007	KEY OPERATED IGNITION SWITCH AND INTEGRAL START POSITION; 4 POSITION OFF/RUN/START/ACCESSORY
811-042	ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED
160-038	HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH
844-001	2 INCH ELECTRIC FUEL GAUGE
148-074	ENGINE REMOTE INTERFACE NOT CONFIGURED
163-004	ENGINE REMOTE INTERFACE CONNECTOR IN ENGINE COMPARTMENT
856-001	ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE
864-001	2 INCH TRANSMISSION OIL TEMPERATURE GAUGE
830-017	ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY
372-051	CUSTOMER FURNISHED AND INSTALLED PTO CONTROLS
852-002	ELECTRIC ENGINE OIL PRESSURE GAUGE
679-001	OVERHEAD INSTRUMENT PANEL
786-119	NFPA VEHICLE DATA RECORDER AND SEATBELT DISPLAY
746-1B4	AM/FM/WB WORLD TUNER RADIO WITH CD PLAYER, BLUETOOTH, IPOD INTERFACE, USB AND AUXILIARY INPUTS, J1939
747-001	DASH MOUNTED RADIO
750-002	(2) RADIO SPEAKERS IN CAB
753-001	AM/FM ANTENNA MOUNTED ON FORWARD LH ROOF
748-006	POWER AND GROUND WIRING PROVISION OVERHEAD

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749-016	CB WIRING ONLY TO ROOF/OVERHEAD CONSOLE; NO MOUNTING PROVISION
810-027	ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER
817-008	STANDARD VEHICLE SPEED SENSOR WITH ADDITIONAL SIGNAL FOR CUSTOMER USE LOCATED BETWEEN DRIVER AND PASSENGER SEATS
812-001	ELECTRONIC 3000 RPM TACHOMETER
162-011	IDLE LIMITER, ELECTRONIC ENGINE
329-100	ONE IGNITION CONTROLLED ON/OFF ROCKER SWITCH IN DASH WITH INDICATOR LIGHT AND WIRE ROUTED TO CHASSIS BACK OF CAB, LABEL OPT, WITH 10 FEET OF EXTRA COILED WIRE
264-019	(1) LH FOOT SWITCH, AIR DEFAULT TO ELECTRIC <85 PSI
836-015	DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY
660-008	SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY
304-001	MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH
27D-004	ALTERNATING FLASHING HEADLAMP SYSTEM WITH BODY BUILDER CONTROLLED ENGAGEMENT
882-018	ONE VALVE PARKING BRAKE SYSTEM WITH DASH VALVE CONTROL AUTONEUTRAL AND WARNING INDICATOR
299-013	SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE
298-039	INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS OVERRIDING STOP LAMPS

Design

065-000 PAINT: ONE SOLID COLOR

Color

980-7YJ CAB COLOR A: L5994EB HARVESTER RED
986-020 BLACK, HIGH SOLIDS POLYURETHANE CHASSIS PAINT
962-2Q6 FRONT WHEEL PAINT: N5994EA HARVESTER RED
966-2Q6 REAR WHEEL PAINT: N5994EA HARVESTER RED
963-003 STANDARD E COAT/UNDERCOATING

PAINT CODES AND BASIC ATTRIBUTES

CAB EXTERIOR

Location 1: L5994EB Harvester Red (Std)
Frame: Black (Std)
Steel Wheel: N5994EA Harvester Red (Std)

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- 502-1F2 MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 6.20 INSET 2-HAND STEEL DISC FRONT WHEELS
- 505-1F2 MAXION WHEELS 90541 22.5X8.25 10-HUB PILOT 6.20 INSET 2-HAND STEEL DISC REAR WHEELS

The crew seating shall be Freightliner option 756-120, Seats Inc 911 High Back Non Suspension LH, RH, and Center Rear Passenger Seats With Under Seat Storage and NFPA 1901-2009/2016 Compliant Seat Sensors.

FUEL TANK VENT EXTENSION

The OEM fuel tank vent line shall be extended from the fuel tank check valve and vented to the atmosphere. The vent line shall extend vertically from the tank to the bottom of the cab rear window and then bend 180 degrees towards the ground. A vent plug orifice (#60 drill size) shall be installed into the upper end of each line. No fuel tank roll over protection check valves shall be removed from the fuel system.

Any chassis fuel system modifications shall be fully compliant with the California Air Resources Board (CARB) standards.

UNDER CAB COMPARTMENT DESIGN AND CONSTRUCTION

All compartments shall be manufactured from 12-gauge stainless steel shall be of sweep out design and shall be bolted together. Stainless recessed round head bolts and stainless aircraft style "ESNA" nuts shall be applied with proper torque rating for each fastener. This type of construction shall greatly enhance the strength and ease of parts replacement in the event of damage and future modifications.

HINGED DOOR CONSTRUCTION

The lower cab compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments.

Each door shall be double pan design with the outer door material being 12-gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

The vertically hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door. The door latches shall be Austin Hardware locking slam latches, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

The exterior of the doors shall be painted to match the main job color.

RIGHT (OFFICER'S SIDE) COMPARTMENT UNDER REAR CAB DOOR

There shall be a brushed stainless steel compartment mounted beneath the crew door on the right (officer's) side of the cab. The compartment shall have approximate dimensions of 26" wide x 13" high x 22" deep.

A heavy duty pullout tray shall be installed in the compartment equipped with slides and a positive mechanical lock to hold the tray in the in position and shall be made from stainless steel.

COMPARTMENT LIGHTING

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LED strip lights shall be provided for the under cab compartment. The under compartment shall have an automatic compartment light switch.

COMPARTMENT STEPS

The top of the compartment shall be equipped with the original equipment steps from the chassis. The lower steps on the compartment shall be the original equipment steps from the chassis.

The original equipment steps in the front officer's and crew areas shall be reinstalled on the apparatus.

REAR DOOR EXTERIOR GRAB HANDLES

The rear doors of the cab shall be fitted with exterior door grab handles to match the grab handles supplied behind the front doors.

EXHAUST TAILPIPE MODIFICATION

The exhaust system on the chassis shall be removed from the DOC back. A four (4) inch horizontal tailpipe shall be installed terminating ahead of the rear tires on the right side of the vehicle.

The area over the right side under cab compartment shall have the tailpipe wrapped to prevent excessive heat in the compartment and from beneath the cab. The tailpipe shall terminate with an exhaust gas diffuser that is five (5) inches in diameter with a 20 degree angle cut. A "CAUTION HOT EXHAUST" labeling will be placed directly over the exhaust outlet on the apparatus body.

The apparatus body on the right side ahead of the rear tires shall be modified to allow the exhaust system to be no lower than the running board on the pump.

BRAKE HOSE PROTECTION

All Synflex air hose that is routed below the frame rails shall be wrapped with a fire wrap lagging capable of withstanding flame and heat impingement of a minimum of 250°C (482°F).

CAB GROUND LIGHTING

One (1) LED light shall be mounted beneath the step on the driver and one on the officer's side. These lights shall be designed to provide illumination on areas under the cab for entry/egress. Light activation shall occur when any cab door is open.

ELECTRICAL INTERFACE

The apparatus shall be equipped with a state of the art electrical interface utilizing the chassis multiplexing system as the foundation for the design. Integration of analog devices and hard wiring with logic devices shall be kept to a minimum. All wiring shall be color coded and labeled to correspond to the electrical manual provided with the completed apparatus.

LOW VOLTAGE HIGH IDLE

The Hi Idle shall be activated if the system voltage drops to 12.4 volts or less for 30 seconds and the following interlocks are engaged:

- Transmission in neutral
- Parking Brake Set

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Service Brake Released

No other feature has control of the engine speed (ex. pressure governor operation)

Hi Idle shall be maintained until system voltage has reached 13.3 volts or greater for 120 seconds or if any of the interlocks change state.

AUXILIARY ENGINE COOLER

The cooling system shall have one (1) auxiliary engine cooler mounted in the radiator water piping. The apparatus shall have the fire pump water circulated to the cooler from a valve located on the apparatus pump panel.

CAB CONSOLE

A center console fabricated from minimum 14 gauge steel, with a black powder coat finish shall be mounted to the cab floor between the front bucket seats mounted to the cab floor with bolts and nylon lock nuts. The console shall have a removable top and front panel. The console shall be the maximum size that will fit between the front bucket seats, while ensuring allowances for seat belt access, engine doghouse removal and rear seat leg room. The overall height shall not exceed the height of the front seat cushions.

The console shall have a form/map box with the following dimensions - 13-1/2" deep x 20-3/4" wide x 14" front to back. This box is sized to utilize the maximum space available and that is deep enough to house 8 1/2" X 11" binders. The mapbox shall include a black powder coated 14-gauge steel lid hinged at the rear with a push button lever type latch. Two (2) full length adjustable dividers shall be installed in the console.

The console shall be vented to allow heat dissipation from the electrical components mounted within. A pancake fan shall be installed in the console, powered when the ignition is in the "on" position. The electrical fuse/breaker panel shall be mounted to the front side of the console and be provided with a protective lid that contains a legend for the breaker functions.

A four (4) position "handi-talki" holder shall be mounted on the rear side of the center console. This holder shall be powder coated black to match the console. The holder shall be mounted low enough so the "handi-talki" body does not protrude above the top surface of the center console.

The following components shall be recessed mounted in the cab console top panel:

PTO Pump Shift Control, switch guard, indicator light and identification tag

Water Tank Level Gauge

PA-640 Siren

Whelen Rear Lightstick Controller

Foam System Remote Control

Diesel Pump Remote Control Panel

Mounted to the center of the console on the front side shall be the Intercom Control

There shall be six (6) 20 amp fused spare circuits connected to a terminal strip inside the console for use by the end user.

ELECTRONIC SIREN

A Federal Signal 100w electronic siren control with microphone, model PA-640, shall be provided.

The siren shall be wired and programmed to provide the following:

The left two vertically stacked buttons:

<u>Label</u>	<u>Function</u>
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A/H	The left upper button shall operate the siren's air horn tone
MAN	The left lower button shall provide manual siren control

The six buttons horizontal on the control head reading left to right shall provide the following functions:

<u>Label</u>	<u>Function</u>
LEFT	Pump house left side flood light
RIGHT	Pump house right side flood light
REAR	Rear ground lights under the tailboard
WORK	Flood lights beneath the rear body upper steps
FLOOD	Spot/Flood Lights on the rear upper outside of the body
TCL	Traffic Clearing Lights (wig-wag and lightbar clear) cut-out

The slide switch shall operate in the following manner:

- Position 1 - Steady Red and Rear Amber lightstick control
- Position 2 - Adds front Lower, side and rear warning lights
- Position 3 - Adds remainder lightbar and headlight wig-wag

HANDHELD SPOTLIGHT

A LED NovaTech hand held spotlight shall be hard wired into cab console and mounted convenient for the officer's use. This 1,040 lumen 4000K spotlight shall include a momentary switch, with a two to twelve foot long 18 gauge SVO coiled cord.

A heavy duty steel wire j-hook for mounting the light shall be provided.

12VDC POWER POINTS

Six (6) 12 volt, socket (cigarette lighter) type, receptacles shall be provided each with a protective rubber plug with strap. The sockets shall be mounted one (1) each side of the rear of the cab console beside the handi-talkie holder and four (4) on the front of the consol above the fuse blocks on either side of the intercom.

FRONT BUMPER

A 10" high heavy-duty 10 gauge, polished stainless steel, wraparound, 2-rib front bumper shall be provided the full width of the cab.

BUMPER EXTENSION

The front frame extension shall be bolted directly to the main rail. The extension and main rail joint shall have a 3/8" thick side plate for reinforcement. The completed apparatus must be able to be lifted at the front bumper without structural damage to the front extension for towing of a disabled vehicle.

The front bumper face shall extend 18 inches ahead of the front face of the cab skin.

FRONT TOW PLATE

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A 3/4" plate tow eye shall be provided mounted directly to the truck chassis frame rails. The plate is to have a center tow eye opening with dimensions of 3" x 4". The tow plate shall be attached to the truck chassis with Grade 8 bolts with hardened washers and Grade "C" distorted thread locknuts. The bumper tow eye, top with grip type material, shall be treated with an epoxy type nonskid material. (Black in Color) The nonskid material shall be applied in accordance with the manufacturer's recommendation. Epoxy or equal.

HOSE ROLLER FIXTURE

A 2 inch by 2 inch receiver is to be bolted in place, offset to the right (officer's) side for use as a hose roller fixture.

GRAVELSHIELD

A gravelshield shall be installed filling the area above the extension rails. This gravelshield shall be constructed of .125" thick NFPA non-skid, bright, non-skid, aluminum treadplate. The gravelshield shall be supported at the front by the top flange of the bumper. At the rear, the gravelshield shall be supported by a steel substructure.

BUMPER HOSEWELLS

There shall be three (3) hosewells in the front extended bumper. Each hosewell shall be constructed of .125" smooth aluminum and contain drain holes.

On the right (officer's) side of the bumper extension the hosewell shall be as large as possible front to back with a tapered side to the right side of the hosewell (1.38 cubic foot). This hosewell shall be equipped with a 2" red web strap with quick release to retain the hose when in the stowed position.

The center hosewell (mounted between the frame rails) shall be as large as possible front to back (1.65 cubic foot). The center hosewell shall include a diamond plate hinged cover. The cover shall be manufactured with bevel style ends. A "D-Ring" handle shall be used to open the lid with a gas shock to hold the lid in the open position. The left and right forward corners of the lid shall have a cutout to allow a preconnected hose to be stored with the hosewell cover closed.

On the left (driver's) side of the bumper extension the hosewell shall be as large as possible front to back with a tapered side to the right side of the hosewell (1.38 cubic foot). This hosewell shall be equipped with a 2" red web strap with quick release to retain the hose when in the stowed position.

OPEN GRATE MAT - HOSEWELL

The floor of the center hosewell shall be covered with black colored, open grate mat for improved ventilation.

SIREN SPEAKER

There shall be one (1) Federal Signal black 100 watt speaker provided. The speaker shall be centered, mounted behind the front bumper.

TIRE PRESSURE MONITORING DEVICE

Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap with an LED tire alert to indicate tire pressure conditions. The LED will flash when the tire drops 8 psi below the factory setting.

TRANSMISSION PTO

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A clutched drive Chelsea, model 278SMFJP-B3XD, 10-bolt heavy duty engine driven power take off shall be installed by the apparatus manufacturer. The pump transmission shall be engaged by a guarded toggle switch. The pump shift controls shall be located in the cab within easy reach of the operator and shall include indicator lights as mandated by NFPA # 1901 latest editions.

PUMP DRIVESHAFTS

Spicer 1410 Series driveshafts shall be provided for the power from the PTO to the water pump. The fire pump and gear case shall be mounted in such a manner that the PTO driveline angles do not exceed the manufacturer's recommended angles for the u-joints and shall be of the proper series and type specified by the pump and PTO manufacturer's.

REFLECTIVE MATERIAL - INTERIOR CAB DOOR

The cab and crew doors shall have white reflective material affixed to the bottom inside edge inside of each door.

AIR HORN

A 21" Hadley stutter tone air horn shall be mounted on the right frame rail along side the engine. The air horn shall be controlled by the commercial chassis air horn accomodation package.

COMPARTMENT OPEN LIGHT

A Red Open Compartment Flashing Light, Whelen OS Series LED shall be mounted on the face of the dash to the right of the instrument cluster. A chrome flange is to be supplied with the light. A label shall be applied adjacent to the light 'OPEN COMPARTMENT'.

An audible buzzer shall be provided and activate when the Open Compartment Light circuit is activated.

The compartment open light circuit shall be wired to all compartment doors including the hose bed covers. The open compartment circuit is deactivated when the parking brakes of the apparatus are applied.

ENGINE MAINTENANCE LIGHT

One (1) LED engine maintenance light shall be supplied beneath the hood. The light shall illuminate automatically when the hood is tilted.

OFFICER MAPLIGHT

A Federal Signal maplight with an 18" long gooseneck and base mounted rheostat shall be mounted on the center of the dash to the right of the heater controls and above the parking brake release valve.

RADIO POWER CIRCUIT

A battery switched 15 amp power circuit shall be provided looped inside the cab console. Additionally, an OEM chassis ignition and battery circuits shall be run from the chassis power panel to the console for use by the end customer.

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RADIO ANTENNA MOUNT WIRING

Four (4) NMO mounts shall be roof mounted, on the cab in the following locations:

one (1) left side of the roof in line with the post between the driver's and rear doors
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the center of the dash behind the AM/FM radio.

one (1) right side of the roof in line with the post between the officer's and rear doors
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the center of the dash behind the AM/FM radio.

one (1) left side of the roof ahead of the rear of the cab
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the officer's seat box.

one (1) right side of the roof ahead of the rear of the cab
a weather cap shall be installed on this mount - the unterminated coax from this mount is to be run to the officer's seat box.

BATTERY CHARGER

A PRO MARINER / ON BOARD SOLUTIONS, ProNauticP 1230 series, 30 amp battery charger shall be mounted on rear wall behind the left rear seat.

SHORELINE AUTO-EJECT

A KUSSMAUL Super Auto Eject, model 091-55-20-120, with weatherproof cover shall be provided.

The Super Auto Eject is to be completely sealed to prevent internal contamination of the working components.

The internal switch arrangement of the Super Auto Eject shall be designed to close and open the 120-volt AC circuit after the mating connector is inserted and before the connector is removed. This design shall prevent arcing at the connector contacts to provide long life.

The electrical connection shall be provided as a 120-volt AC - 20 amp type using a NEMA 5-20P connector.

The Auto-Eject cover shall be yellow in color.

The Auto-Eject cover shall be a Kussmaul 091-55

The Auto Eject assembly shall be mounted on the exterior of the cab below the driver's door.

ALTERNATING HEADLIGHT WARNING

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The headlights shall be provided with an alternating headlight feature.

When the High Beam is selected the headlights shall become a standard high beam.

== Pump & Body - Model 34E (4x4 Chassis) - 4.001 ==

HYDRA TECHNOLOGY

The pump module must employ Hydra Technology. Due to the design a pump module manufactured with Hydra Technology is compact in size; massive in performance.

Each component in the module must undergo a selection and placement analysis staff engineers. Utilizing advanced 3D software the engineers goals must provide component placements for ergonomics with a completed module that produces maximum water flow with optimum versatility. Only after the complete analysis and build of the module in the computer can the build of the hardware in the shop begin.

Pump module design beginning with a foundation; cage framework assemblies that are precision manufactured from strong corrosion free heavy wall stainless steel tubing. This framework mounts to the truck frame through a mounting design complimented with iso-mount elastomer cushions. The result shall be a mounting system that allows for the twisting movement of the truck frame without undue stress loading of the pump module.

Next assembled shall be the stainless side panels. Brushed, mirror polished or power coated the stainless steel side panels provide strength and durability. Precise engineering allows each panel to be laser machined before assembly; instead of drilling holes technicians shall spend their time on assembly techniques that provide installations that breeze through strict quality assurance.

A thorough review of the valve control placements on a control module shall result in a neat and orderly layout. Open the access door on a side control module and peer inside. The horizontal control rods appear neat and orderly. The appearance is only a portion of the requirement. The same neat and orderly appearance after countless hours of engineering design and ergonomic study provide a smooth trouble free linkage for valve operation.

The gauge panel door shall be an expansive double wall stainless door supported by a 3/8 inch diameter hinge pin. The double wall door provides unsurpassed strength and gauge protection while thwarting the casual attempt of tinkering. Authorized servicing of the components within the door is simplified with a bolt on access panel.

Inside the access door; there shall be a clean well build appearance. Stainless steel piping, stainless steel panels, and a stainless steel framework all to provide years of trouble free service. Pipe threads are not allowed on plumbing larger than 1-1/2 inch in diameter. The pump module design shall employ Victaulic coupling connections in the pump module to save time when servicing a component. Installation of components without the use of pipe threads allows for "drop-out" maintenance of critical components without disassembly of entire piping systems. Drop in valves and manifolds with Victaulic couplings are only the start of the serviceability designed into this pump module.

Apparatus taking exception to any portion of this requirement will not be acceptable.

PUMP COMPARTMENT

The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of stainless steel tubing and angles, which does not support the fire pump. The pump compartment shall be mounted onto the chassis through rubber biscuits in a four point pattern to allow for

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chassis frame twist.

The pump compartment shall be a modular design allowing removal from the chassis in an assembly complete with pump, plumbing and gauges with an approximate width of 27".

RUNNING BOARDS

The running boards shall be an integral component of the pump compartment spaced down from the bottom of the pump module side panels to allow water to flow freely away from the running board area.

The steel running board supports shall be welded directly to the pump frame structure to provide proper support. The running board step surface shall be covered in Laser Grip stainless steel meeting the current revision of NFPA 1901 for step requirements.

DUNNAGE COMPARTMENT OVER PUMP

There shall be a dunnage compartment furnished on top of the pump module. This compartment shall be utilized for the installation of a hose reel and diesel pump. The right side and rear panels shall have laser cut grills to provide adequate air flow for cooling the diesel pump.

DUNNAGE COMPARTMENT COVER

A .125" polished aluminum treadplate cover shall be provided over the right side of the dunnage compartment where the diesel pump is installed. The cover shall be hinged on the far right side of the dunnage opening to provide service access to the diesel pump and cooling system from the top side. The cover shall have a cable to prevent opening over 90° and a push button latch to secure the cover in the closed position. The cover shall have a laser cut grill to assist in cooling of the diesel pump.

PUMP HOUSE GRABRAILS

Two (2) bright anodized extruded aluminum grab rails shall be provided, one (1) each side of the pump house on the rear (body) side of the module just below the light hood. Molded rubber gaskets shall be installed under the grab handles to protect the surface of the pump house.

AIR OUTLET

A truck air system outlet connection shall be provided and mounted in the left side pump panel. This connection shall be clearly labeled as to its function. A pipe thread frame coupling shall be provided with 1/4" NPT threads, terminating with a pipe plug.

PUMP COMPARTMENT WORK LIGHT

The pump compartment shall have one (1) white LED strip light across the pump panel to provide illumination of the pump compartment. The light strip shall be mounted transverse at the rear of the pump module with the light directed to the front. The light shall have a weather resistant, toggle style on/off switch located inside the pump compartment adjacent to the door hinge area. The power for the pump module light shall be switched thru the battery master switch.

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PUMP SERVICE ACCESS REQUIREMENTS

It is the opinion that service access to the pump, valves, gauges and controls are of the utmost importance. Special consideration shall be taken when evaluating the pump module design of the offerer. Pump panels that offer little to no access without the use of tools shall not be considered compliant with this requirement.

PUMP CONTROL PANELS

All pump controls and gauges shall be located at the left (street) side of the apparatus and properly identified. The layout of the pump control panel shall be ergonomically efficient and systematically organized. The pump operator's panel shall be removable in two (2) main sections for ease of maintenance. The pump and gauge panels shall be constructed of 12-gauge stainless steel. The gauge panel shall contain a panel for mounting of all instruments, engine monitoring system and pressure control system.

The gauge panel shall be a double panel door design to protect in the enclosed door all gauge tubing, switch, and control wiring. The gauge panel exterior shall be made of 12-gauge stainless steel. The inner pan shall bolt onto the stainless exterior panel. There shall be an access panel in the inner panel easily removable for control or gauge service or replacement.

The gauge panel door shall be designed as an opening pump house service door on the street (left) side of the pump house. This gauge panel door shall provide an opening minimum size of 21 inches wide by 14 inches in height.

The lower section of the panel shall contain all inlets, outlets and drains. All push-pull valve controls shall have quarter-turn locking control rods with chrome plated zinc tee handles. Guides for the push-pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push-pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.

NOMENCLATURE PLATES

5/8" X 3" metal, Vision Mark (or equal) individual nomenclature plates shall readily identify all switches, valves, and controls. The lettering shall be deeply etched, enamel paint filled or anodized aluminum-etched color-coded tags and shall describe the function of all the pump panel controls, switches, discharge and suction valves. The plates shall be attached with stainless steel nylock nuts and machine screws. (Plastic I.D. plates, rivets, adhesivebacked plates, and/or self-tapping screws are unacceptable).

All intake and discharge labels to be labeled as to their size and function.

PUMP PANEL FINISH

The side gauge access door, side middle horizontal support panel, inlet/discharge panel, gauge and switch and side drain panels on the left side of the pump module shall have a black powder coat finish. The right side of the pump panel intake valve area shall be brushed stainless.

The dunnage compartment side walls, module vertical uprights and light bar shall have a brushed stainless steel finish.

CONTROLS AND GAUGES

The following shall be provided on the pump and gauge panels in a neat and orderly fashion. The gauge panel shall

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include the following:

PRESSURE GOVERNOR AND MONITORING DISPLAY

Fire Research PumpBoss pressure governor and monitoring display kit shall be installed. The kit shall include a control module, 600 psi pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide by 1 3/4" deep. Inputs for monitored information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific wiring.

The following continuous displays shall be provided:

- CHECK ENGINE and STOP ENGINE warning LEDs

- Engine RPM; shown with four daylight bright LED digits more than 1/2" high

- Engine OIL PRESSURE; shown on an LED bar graph display in 10 psi increments

- Engine TEMPERATURE; shown on an LED bar graph display in 10 degree increments

- BATTERY VOLTAGE; shown on an LED bar graph display in 0.5 volt increments

- PSI / RPM setting; shown on a dot matrix message display

- PSI and RPM mode LEDs

- THROTTLE READY LED.

A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator.

The program shall store the accumulated operating hours for the pump and engine, previous incident hours, and current incident hours in a non-volatile memory. Stored elapsed hours shall be displayed at the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Engine RPM

- High Transmission Temperature

- Low Battery Voltage (Engine Off)

- Low Battery Voltage (Engine Running)

- High Battery Voltage

- Low Engine Oil Pressure

- High Engine Coolant Temperature

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A control knob that uses optical technology shall adjust pressure or RPM settings. It shall be 2" in diameter with no mechanical stops, a serrated grip, and have a red idle push button in the center.

A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

PRESSURE GOVERNOR and MONITORING DISPLAY BUZZER

Fire Research PumpBoss Z1 option for an audible alarm buzzer shall be installed. The buzzer shall sound when a signal from the PumpBoss activates it.

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MASTER GAUGES

The pump master vacuum and pressure gauges shall be 4-1/2" in diameter with white dial face gauges with black lettering and markings.

The master vacuum gauge shall be a compound style gauge with a vacuum/pressure range of -30" - 0 - 600 psig with the dial face of the gauge labeled in black INTAKE.

The master pressure gauge shall be provided with a range of 0-600 psig and the dial face of the gauge labeled in black DISCHARGE.

The gauges shall be liquidless with dash-pot shock and vibration resistant movement. The cases shall be temperature compensated with an internal breathing diaphragm. The gauge accuracy for the gauge shall be plus or minus 1% of full scale per ANSI B40.1, Grade 1A.

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. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage.

MASTER GAUGE TEST PORTS

Adjacent to each gauge there shall be a pressure tap to provide simultaneous reading of the vacuum and pressure exerted on the individual gauge and supplied with the proper identification label.

PUMP PANEL LIGHTING

The pump operator's panel shall be supplied with a LED light system. LED strip lights with a stainless steel hood shall be mounted across the top of the pump panel gauges and controls.

LED strip lights with a stainless steel hood shall be provided on each side of the pump module above the side panels.

The pump module lighting shall illuminate by a switch on the pump panel. There shall be a white/red color selector switch in the cab that controls the color of this lighting.

DRAIN DISCHARGES

The 3/4 inch drain valves shall be equipped with 90-degree fittings to direct the discharge water beneath the pump module away from the pump operator's panel.

AIR HORN ACTIVATION SWITCH

A switch shall be located on the pump panel to activate the chassis air horn. The switch shall be a momentary pushbutton type switch with a red cover. The switch shall be supplied with the proper identification label.

WATER TANK INDICATOR

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Fire Research TankVision model WLA300-A00 tank indicator kit shall be installed. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

MAIN FIRE PUMP

The contractor shall provide and install Darley JMP-500 a PTO operated 500 G.P.M. fire service rated 2-stage centrifugal pump that provides water pressure to all discharges.

The pump unit shall be fully capable of meeting the National Fire Protection Association (NFPA) # 1901, latest editions, standards for initial attack fire apparatus. The fire pump that the bidder is proposing must be prior to bid PREQUALIFIED submission by virtue of a CAL FIRE approved 100 hour Certification Test. Currently, the Waterous CPK3-500 and Darley JMP 500 are PREQUALIFIED.

The fire pump must be provided with the OEM pump manufacturer's transfer valve air cylinder assembly or electric transfer valve actuator assembly, bracketing and wiring harness. **NO EXCEPTIONS**

The main pump shall be a two stage, centrifugal type, designed for use in the fire service and supply water pressure to all discharge valves. It shall be designed so repairs can be made by replacement of normal repair parts, i.e., seals, bearings, impeller and wear rings. The impeller and wear rings shall be made of bronze material. The pump pressure shall be tested to a minimum of 600 psi.

The impeller shaft seal shall be a mechanical, self-adjusting type.

The pump shall be painted to match the color of the chassis.

PUMP HOUSE STORAGE COMPARTMENTS

EQUIPMENT STORAGE COMPARTMENT

There shall be one (1) equipment compartment located on the upper right (curb) side of the pump house. It shall have dimensions of 22" wide x 26" high. The clear door compartment dimensions shall be 20-1/2" wide x 23" high x 12" deep with the door closed. A four (4) inch diameter light mounted in rubber grommets shall illuminate the interior of the compartment when the door is open.

The equipment compartment shall be provided with a flush style hinged door. The door shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartment. The door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8"

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aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations. The vertically hinged door shall have a gas shock and polished stainless steel 1/4" piano hinge.

The door latch shall be a Hansen locking slam latch, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

The exterior of the door shall be painted to match the main job color.

There shall be two large removeable panels provided on the inside of the compartment. These panels shall provide an opening for service access to the right side of the interior of the pump module and to the bottom side of the diesel pump.

There shall be one (1) fully adjustable shelf. There shall be red/white conspicuity tape applied along the length of the front face of the adjustable shelf.

WHEEL CHOCK COMPARTMENT

Beneath the equipment storage compartment there shall be a wheel chock compartment. This compartment shall be equipped with a plate lap style stainless steel door mounted on a piano hinge with a push latch. The compartment shall have clear door dimensions of 8-1/4" wide x 13-1/2" high x 13" deep with the door closed.

PUMP RATING AND TEST REQUIREMENTS

The pump shall have the capacity of 500 gallons per minute (U.S. GPM), NFPA 1901 rated performance. The entire pump shall be assembled, and tested at the pump manufacturer's factory.

ALTITUDE REQUIREMENTS

The apparatus shall be designed to meet the specified rating at 0 to 2000' altitude.

PUMP MOUNTING

The PTO pump shall be mounted in a manner that the pump and gear case can be completely removed from beneath the truck for repair or replacement in a minimal amount of time. All pump mounting brackets shall be powdercoated to match the color of the chassis.

PRIMING PUMP SYSTEM

The priming pump shall be a Hale ESP-12 positive displacement vane type, oil-less, electrically driven, and conform to standards outlined in NFPA 1901. Activation of the priming system shall be accomplished by a push button switch. A priming button shall be located one on the pump panel and one on the cab console. The priming system shall prime both the PTO driven and the diesel driven pumps simultaneously. A Hale SPV remote valve shall be used to isolate the intake system from the atmosphere when the primer is not in operation.

PUMP SHIFT

The pump shift shall be air operated and shall incorporate an air double action piston to shift from road to pump and back. A manual or electric operated pump shift mechanism is not acceptable. The pump shift switch shall be mounted in the cab and identified as "PTO PUMP SHIFT" and include instructions permanently inscribed on the pump shift switch plate. The

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in-cab operating switch shall have a protective cover to prevent it from accidentally being moved.

The pump shift control assembly shall incorporate an indicating light system, which will notify the operator when the pump has been engaged and is ready to pump. PTO pump operation shall be interlocked to provide pumping only in stationary mode when the parking brakes are set and the transmission is in neutral.

ANODE SYSTEM

To reduce the effect of galvanic action the pump shall be equipped with two (2) easily replaceable sacrificial catalytic action $\frac{3}{4}$ " magnesium anodes. One anode is to be installed on the inlet (suction) side of the system and one anode is to be installed on the pressure (outlet) side of the PTO pump.

THERMAL PROTECTION

The pump shall be equipped with a TRV-L, thermal protection device, which monitors the water temperature of the pump and relieves water when the temperature inside the pump exceeds the preset value of the relief valve (120 degrees F / 49 degrees C).

The TRV shall automatically dump a controlled amount of water to the atmosphere when the pump water temperature exceeds the preset value. The valve shall automatically close when the water temperature cools to below the preset value.

An aluminum composite panel placard with a visual warning lamp and test button shall be provided on the operator's panel. The warning light shall illuminate when the Thermal Relief Valve is open and discharging water.

SUCTION PRESSURE RELIEF VALVE

Task Force Tips model #A1820 pressure relief valve shall be provided. The valve shall have an easy to read adjustment range from 90 to 300 PSI in 90, 125, 150, 200, 250, 300 PSI increments. For corrosion resistance the cast aluminum valve shall be hardcoat anodized with a powder coat interior and exterior finish. The valve shall be configured for either a Waterous or Hale pump, and have a 2" male NPT threaded discharge outlet. The unit shall be covered by a five-year warranty.

MASTER DRAIN

The apparatus shall be equipped with a Class 1 Manual Master Pump Drain for draining of the lower pump cavities, volute and selected water-carrying lines and accessories. The all brass and stainless steel construction allows for operation up to 600 psi.

PUMP CERTIFICATION TEST

The pump shall undergo pump test with line and/or low voltage requirements of NFPA 1901 prior to delivery of the completed apparatus. The certificate shall be furnished with the apparatus on delivery.

LEFT SIDE STEAMER INLET

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There shall be one (1) steamer inlet furnished on the left side pump panel. The suction inlet shall have an NPT thread. At the intake connection there shall be a chrome plated adapter 4" female NPT to 4" male NH with a removable strainer provided.

LARGE DIAMETER CAP

A four (4) inch chrome plated cap with long handles shall be supplied. The cap shall be capable of withstanding 500 PSI.

LEFT SIDE INTAKE

There shall be an intake located on the left (street) side of the pump and shall contain:

A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve. The inlet valve shall have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel that extends through the pump panel. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

The valve shall be able to be removed from the operator's side of the pump panel by removing a brushed stainless steel trim panel.

The valve shall also include a push pull type valve piped to the inlet to bleed off pressure from the connection on the outlet side of the valve.

RIGHT SIDE INTAKE

There shall be an intake located on the right (curb) side of the pump and shall contain:

A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve. The inlet valve shall have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel that extends through right side lower compartment. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

The valve shall also include a push pull type valve piped to the inlet to bleed off pressure from the connection on the outlet side of the valve.

LEFT SIDE DISCHARGE

There shall be a discharge located on the left (street) side of the pump and shall contain:

A 2-1/2" discharge shall be provided with a swing type control handle adjacent to the valve. The discharge outlet shall have a 2-1/2" quarter-turn swing-out valve. The discharge shall be provided with painted brass straight discharge with 2-1/2" NH male threads that extends through the pump panel. A pressure cap is not provided.

The valve shall be able to be removed from the operator's side of the pump panel by removing a brushed stainless steel trim panel.

REAR DISCHARGES

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Piping to the rear discharges shall be accomplished through a sleeve in the water tank. for each discharge.

REAR DISCHARGE - LEFT SIDE

There shall be one (1) 2-1/2" discharge outlet located on the left side rear of the body below the hose bed. The discharge outlet shall be plumbed with 2-1/2" high pressure hose and have a 2-1/2" quarter-turn, swing out valve with direct control on outside rear of the apparatus body. There shall be a 30° brass painted 2-1/2" NST male thread on the end of the valve for hose connections.

REAR DISCHARGE - RIGHT SIDE

There shall be one (1) 1-1/2" discharge outlet located on the right side rear of the body below the hose bed. The discharge outlet shall be plumbed with 2" high pressure hose and have a 2" quarter-turn, swing out valve with direct control on outside rear of the apparatus body. There shall be a chrome plated 2" to 1-1/2" NST male thread adapter on the end of the valve for hose connections.

CAPS

Pressure caps shall be provided for both discharges.

FRONT DISCHARGES

Two (2) 1-1/2" discharges shall be located at the front bumper. The front discharges shall be plumbed using a single feed of 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings. The front discharge outlet shall have two (2) 2" quarter-turn swing out valves. Each front discharge shall be provided with a 1-1/2" painted brass, 90-degree swivel adapter with 1-1/2" NH male threads.

The valve for the center and left front bumper hose wells shall be located on the left side of the front bumper outboard of the frame rail, be vertically mounted behind the bumper and controlled at the valve.

The valve for the right side hose well shall be located outboard of the frame rail, be vertically mounted behind the bumper and controlled at the valve.

The discharge swivel locations shall provide adequate clearance for the use of 1½" gated wye's and be designed so as not to interfere with the opening and closing of the hood. The swivels shall feature stops to prevent them from rotating 360 degrees and impacting the hood.

An inline 1/4 turn valve shall be mounted easily accessible beneath the cab on the left side to turn off the water supply to the front discharges. Drains shall be provided in the low points in the plumbing to drain water.

CAPS

Two (2) discharge caps are required.

PUMP HOSE LAY BEDS

The hose storage areas shall be mounted on top of the pump module. They shall be arranged in a single stack design with a divider in the center of the storage area. Each storage area shall extend from the side of the pump module to the center of the storage with dimensions of 4-1/2" wide x 36" deep x 32" tall. The floor of the hose storage area shall contain drain holes to allow drainage.

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CROSSLAY HOSE GUIDES

Brushed stainless steel hose guides shall be provided on the left and right side of each hose bed.

DISCHARGE VALVES

One (1) discharge outlet on each side shall be located adjacent to the pump house hose lay, set back from the panel edge, on the left and right side.

The discharge outlet shall have a 2" quarter-turn swing-out valve with a swing type control handle adjacent to the valve. The discharge shall be provided with painted brass straight discharge with 1-1/2" NH male threads that extends through the pump panel. A pressure cap is not to be provided.

The valves shall be able to be removed from the outside of the pump panel.

CROSSLAY HOSEBED COVER

A .125" polished aluminum treadplate hinged cover shall be provided over the crosslay hosebeds, complete with full-length stainless steel piano hinge. Stops shall be provided to protect cab or other adjacent body components. The hinge shall be located on the forward section of the cover, closest to the chassis cab.

VINYL FLAPS

The aluminum treadplate crosslay cover shall be supplied with weighted vinyl end flaps. Each flap shall have a means of securing the flap to prevent hose from falling off the truck.

The vinyl crosslay end flaps shall be Brilliant Red in color. Each flap shall have a means of securing the flap to prevent hose from falling off the truck.

BOOSTER HOSE REEL

A Hannay model SBSEPF17-28-29 RT booster hose reel with leak proof ball bearing swing joint, adjustable friction brake, and electric rewind shall be furnished. The reel shall have an all aluminum frame and drum, polished aluminum discs, and plated drive chain, sprocket, hub assembly, swivel joints and fasteners. The reel capacity shall be at least 150' of 3/4" hardline hose. The reel shall be plumbed with wire reinforced, high pressure hose coupled with reusable stainless steel fittings, and shall have a 1" valve in the plumbing preceding the reel.

The booster hose reel shall be mounted in the left side of the dunnage compartment over the pump. The friction brake control shall protrude through the dunnage wall with the hand knob on the outside of the wall for operation.

The hose reel shall include one lower horizontal and two vertical chrome fairlead rollers. The rollers shall be backed up with the left side dunnage wall to prevent the roller mounts from spreading. Two (2) additional sets of fair lead rollers shall be located on the auxiliary pump cover for guiding the hose across the top of the apparatus.

BOOSTER HOSE

Three (3) fifty foot sections of 3/4" rubber covered booster hose shall be provided on the booster reel. The hose shall be high pressure type, 800 pounds test, coupled with 1" NPSH threads.

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SWITCHES, REWIND BOOSTER REEL

Two (2) hose reel rewind switches shall be located, one (1) each side of the pump module. The switches shall be marine style momentary switches with a red weatherproof cover.

BACK PUMP FILLER SYSTEM

A Class 1 brass, $\frac{3}{4}$ ", quarter turn ball valve with chrome handle shall be supplied and labeled "Back Pump Filler". The valve shall be installed on the left lower forward side of the pump panel with the discharge hose terminating at the outside of the pump panel. The valve plumbing shall be $\frac{3}{4}$ " I.D. hose properly routed and clamped from the tank sump to the filler valve.

AKRON BALL VALVES

All ball valves shall be Akron heavy duty valves with stainless steel ball unless specified otherwise.

The valves shall have an all cast brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing brass ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of eight bolts.

All exposed brass valves shall be painted body color, the front bumper discharge valves shall be painted silver.

TANK TO PUMP

The tank to pump piping shall be capable of delivering water to the pump at a rate of five hundred (500) gallons per minute. This flow shall be sustained while pumping to a minimum of 80% of the certified tank capacity with the apparatus on level ground.

The tank to pump line shall run from the pump to the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing. The tank to pump line shall be 3" I.D. piping with a 3" ball valve.

A check valve shall be provided in the tank to pump supply line to prevent unintentional back filling of the water tank.

A guarded air toggle switch and indicator lights shall be located on the pump operator's panel for tank to pump operation. A red indicator light shall be provided when the valve is closed and a green indicator light when the valve is opened.

TANK REFILL

A 2" tank refill line shall be provided using a 2" quarter-turn full flow ball valve controlled from the pump operator's panel with a push pull manual locking handle. The tank refill shall be plumbed with high pressure flexible piping and high pressure flexible piping stainless steel couplings.

The tank filler valve shall be plumbed to flow water from both the main and auxiliary pumps.

LEFT REAR DIRECT TANK FILL

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There shall be a direct tank fill located on the left (street) side of the rear compartment and shall contain:

A 2-1/2" intake with a 2-1/2" quarter-turn swing-out valve mounted direct on the rear of the apparatus body. The inlet valve shall be painted body color and have a swing type control handle located adjacent to the valve.

The inlet shall be provided with a 2-1/2" NST female swivel. A chrome plated intake plug with plug retention chain shall be installed on the inlet to the valve.

PUMP HOUSE STORAGE COMPARTMENTS

EQUIPMENT STORAGE COMPARTMENT

There shall be one (1) equipment compartment located on the upper right (curb) side of the pump house. It shall have dimensions of 22" wide x 26" high. The clear door compartment dimensions shall be 20-1/2" wide x 23" high x 12" deep with the door closed. A four (4) inch diameter light mounted in rubber grommets shall illuminate the interior of the compartment when the door is open.

The equipment compartment shall be provided with a flush style hinged door. The door shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartment. The door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations. The vertically hinged door shall have a gas shock and polished stainless steel 1/4" piano hinge.

The door latch shall be a Hansen locking slam latch, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

The exterior of the door shall be painted to match the main job color.

There shall be two large removeable panels provided on the inside of the compartment. These panels shall provide an opening for service access to the right side of the interior of the pump module and to the bottom side of the diesel pump.

There shall be one (1) fully adjustable shelf. There shall be red/white conspicuity tape applied along the length of the front face of the adjustable shelf.

WHEEL CHOCK COMPARTMENT

Beneath the equipment storage compartment there shall be a wheel chock compartment. This compartment shall be equipped with a plate lap style stainless steel door mounted on a piano hinge with a push latch. The compartment shall have clear door dimensions of 8-1/4" wide x 13-1/2" high x 13" deep with the door closed.

FOAM SYSTEM

A Foam Pro model 1600/2.0 built in foam injection system shall be provided with the controls at the operator's panel. The foam system shall be a fully automatic, electronic, direct injection foam proportioning system. The system shall be capable of handling Class A foam concentrate. The foam proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. The foam system shall be installed in accordance with the manufacturer's recommendations.

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The foam system shall have a 12 volt, 1/3 hp electric motor driven positive displacement piston type foam concentrate pump with a rated capacity of .01 to 1.7 GPM at 200 psi with a maximum operating pressure of 400 psi.

FOAM SYSTEM PRESSURE RELIEF ON SHUTDOWN

For firefighter safety a time delayed solenoid valve and TDI Series interval timer with time delay ranges (1-1023 seconds) shall be installed in the 2" discharge manifold after the foam system check valve to discharge trapped manifold water pressure upon pump shut down. **NO EXCEPTIONS TO THIS REQUIREMENT**

FOAM SYSTEM

The foam system will operate as a Class A system.

FOAM TANK REFILL SYSTEM

A Hale truck mounted "EZ-Fill" foam tank fill system shall be provided and installed on the apparatus. The refill system shall provide the ability to automatically refill a single foam tank from the ground without carrying foam solution up to the fill towers in the hosebed.

The refill system shall be activated by a switch provided on a control panel with indicator lights mounted on the pump panel and will automatically shut off when the foam tank is full. The refill system shall be equipped with fresh water flush capabilities and a cam lock pickup tube connection located on the pump panel.

FOAM SYSTEM OUTLETS

The foam system shall be distributed into the following discharge outlets:

- Front bumper discharges
- Pump house hose beds
- Pump house mounted booster hose reel
- Rear 1-1/2" discharge

FOAM SYSTEM CONTROLS

The Foam Pro system shall be equipped with an electronic control unit, suitable for installation on the pump operator's panel. The control module shall provide the following functions:

- Activate the foam proportioning system.
- Provide selectable control of foam proportioning rates from 0.1% to 1.0%, in 0.1% increments
- Flash a "low concentrate" warning when the foam concentrate tank(s) runs low

There shall be a remote start - stop button located on the in cab console and on the pump panel to allow operation from inside the cab.

PORTABLE PUMP

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A Darley 1-1/2AGE 24K portable pump shall be provided on the apparatus.

Pump Performance

- 150 gpm @ 100 psi
- 150 gpm @ 130 psi
- 80 gpm @ 210 psi

Diesel Engine

Kubota, model D902, in-line 3 cylinder, EPA tier 4, water-cooled, overhead valve (OHV) delivering a maximum output of 24.8 hp @ 3600 RPM, 54.8 cu. in. displacement, 4-cycle, diesel fueled. The engine shall be piped to the chassis fuel system with provisions to prevent fuel drainback to the tank when the engine is shutdown. A spark arrestor is to be provided on the engine exhaust system. A fuel reprime pump is to be provided to assist in fuel delivery to the diesel engine from the chassis tank.

A 1/2" crankcase oil drain extension line shall be provided and routed to facilitate an efficient and clean oil change. An Aeroquip or equal style hose, threaded fittings and drain plug shall be used. The hose will be permanently marked "Aix Oil Drain".

PUMP PANEL CONTROL

The auxiliary pump shall have a control panel located on the midship pump module operator's position. This panel shall contain the following:

- Auxiliary pump water pressure gauge
- Vernier throttle cable
- Pump ignition on / off / start switch
- Low Oil Pressure indicator light
- Engine Overheat indicator light
- Glow Plug operational light
- Primer Button

CAB PANEL CONTROL

The auxiliary pump shall have a control panel located on the in cab console. This panel shall contain the following:

- Auxiliary pump water pressure gauge back-lighted red
- Vernier throttle cable
- Pump ignition on / off / start switch
- Low Oil Pressure indicator light
- Engine Overheat indicator light
- Glow Plug operational light
- Primer Button

PUMPHOUSE DOOR

The backer on the pumphouse door shall contain the following:

- Electric hourmeter to log auxiliary pump operation

PORTABLE PUMP PIPING

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The inlet to the diesel pump shall be connected to the 4" intake manifold for the PTO pump with 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings. There shall be a 2" check valve at the connection to the 4" intake manifold to prevent back flow from the 2" line with the 4" line under vacuum.

The discharge of the diesel pump shall be piped with 2" stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings to a double check valve. The other inlet to the double check valve shall be connected to the PTO pump pressure side. The double check valve shall prevent water from the PTO pump and the diesel pump from backfeeding under pressure. The check valve outlet shall feed the foam manifold upstream of the foam system check valve.

HEAT EXCHANGER

A heat exchanger shall be provided on the chassis cooling system. The heat exchanger shall not allow mixing of the chassis coolant and water from the fire pump. A discharge line shall be installed to provide water from the fire pump to the chassis heat exchanger to assist in engine cooling during pumping operations. The cooler return line shall pass through a check valve into the water tank.

WATER TANK CONSTRUCTION

The tank shall have a rated capacity in U.S. gallons, complete with lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the notice is to inform department personnel who store or use the tank that the unit is under warranty.

The tank shall be constructed of 1/2" thick Polypropylene & Mac226 sheet stock. This material shall be non-corrosive stress relieved thermoplastic, black in color and UV stabilized for maximum protection. The tank shall be of a special configuration and is so designed to be completely independent of the body and compartments. All exterior tank joints and seams shall be extrusion welded and/or contain the Bent Edge™ and tested for maximum strength and integrity. The top of the tank is fitted with removable lifting eyes designed with a 3-to-1 safety factor to facilitate easy removal.

The transverse and longitudinal swash partitions shall be manufactured of Polypropylene & Mac226 material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules. All swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

TANK SUMP AND CONNECTIONS

There shall be one (1) sump standard per tank. The sump shall be constructed of black Polypropylene & Mac226 and be located as close as possible to the longitudinal center of the tank. The sump shall have a 3" FNPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean out and drain. All tanks shall have an anti-swirl plate located above the tank to pump connection.

There will be two (2) standard tank outlets: one for tank to sump suction line, and one for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 GPM. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet NFPA guidelines in effect at the time of manufacture.

EXTERNAL FOAM TANK

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A twenty (20) gallon polypropylene foam concentrate tank shall be furnished as an external component of the booster tank. The foam tank shall have an anti-foaming fill stack and removable screen located in an accessible area. The foam tank fill tower shall be equipped with a latch, pressure/vacuum vent and have a sealed airtight cover.

The foam tank shall be plumbed to the on board "Class A" foam system. A drain valve connection shall be provided at the lowest point of the foam tank. The foam tank shall drain shall have a 1/4 turn 3/4" valve mounted on the pump panel. The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"

"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

HOSEBED BULKHEAD

A stainless steel bulkhead shall be installed between the out of county storage area and the hose storage area of the hosebed. The bulkhead shall be the same height and design as the hosebed side walls.

No hosebed flooring shall be provided in the space between the bulkhead and the front wall of the hosebed.

TANK MOUNTING

A tank mounting cradle shall be supplied. The tank mounting cradle shall consist of a minimum of five (5) crossmembers and four (4) full tank length longitudinal members. The tank shall rest on the tank mounting sub frame, and shall be insulated from the sub-frame with a 2-1/2" wide rubber insulator. The tank shall sit cradle-mounted using four (4) corner angles of 8" x 8" x 4" x .250" welded directly to the tank sub-frame. The angles shall keep the tank from shifting left to right or front to rear. The tank is designed on the free-floating suspension principal and shall not require the use of hold downs. The tank shall be completely removable without disturbing or dismantling the apparatus body structure. The hosebed cross-braces shall act as water tank retainers. The water tank cradle shall be designed to be completely independent of the apparatus body to eliminate torsional stress loading in the body. The tank cradle shall be mounted with captivated die springs on the four corners to allow the cradle to move independent of the twist of the truck chassis. No exception will be permitted to the tank mounting requirements.

The tank cradle shall be finish painted to match the chassis axles.

TANK DRAIN

A 2" tank drain shall be provided for the booster tank below the tank sump. The drain shall be provided with a 2" 1/4 turn PVC valve with a manual control on the valve.

HOSEBED DUNNAGE HINGED ALUMINUM COVER

A one-piece polished aluminum treadplate cover shall be supplied and shall extend the length and width of the hosebed dunnage area. The hosebed covers shall be constructed of .125" polished aluminum treadplate with cross bracing to provide maximum strength and rigidity to support the weight of a firefighter standing on the covers when closed. The aluminum treadplate shall meet the current revision of NFPA 1901 for step requirements.

The cover shall be equipped with a full length stainless steel piano hinge and diamond plate handle integral to the rear of the cover. There shall be a gas shock installed on each side the cover to assist in opening.

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PURCHASE INTENT

The apparatus being purchased is expected to have an 18 to 20 year service life. Based on this requirement, the department is extremely concerned that the apparatus remains structurally sound and the outward appearance remains in a "like new" condition, with minimal maintenance and upkeep, throughout the intended service life.

Aluminum apparatus bodies and differing construction designs will be reviewed and considered ONLY if the builder / manufacture provides in the respondent specifications adequate proof that procedures and materials employed in the design prevent corrosion over the intended service life. Burden of proof is on the bidder and final determination of acceptability will be solely determined by the department.

The entire body design shall be of a laser machined, bolted design to allow for ease of removal for repair or replacement, without cutting welds.

APPARATUS BODY DESIGN AND CONSTRUCTION

The apparatus body shall be built of stainless steel and shall be designed exclusively for Fire Service use. The overall body width shall be 98 inches wide and shall be constructed in accordance with current NFPA requirements. All metal work shall be free of sharp edges, objects or corners. No exceptions are allowed to this requirement.

The body design shall be fully tested with proven engineering and test techniques such as finite element analysis, stress coating, and strain gauging. Engineering and test techniques shall have been performed with special attention given to fatigue life and structural integrity of compartments and body support system.

The apparatus body shall be designed with the use of parametric modeling engineering software to ensure proper design of panel cuts and alignment of holes in mating parts. The entire apparatus body shall be a precision laser machined, bolted construction, properly reinforced with integral flanges eliminating the need for additional structural shapes. Hose body fabrications shall be free of all internal projections which might injure personnel or fire hose.

The pump module is to be completely separate from the main body to prevent damage due to flexing.

MODULAR BODY REQUIREMENTS

The body shall be completely modular in design allowing transfer of body components to a new chassis in the event of an accident or wear. Body components shall be removable from chassis without cutting or bending. The modular design shall also facilitate ease of repair or replacement of major or minor body parts. The mounting of the apparatus body shall be separate and distinct from the water tank mounting and the pump module mounting.

All body panels are to be laser machined on a CAM controlled laser to ensure accuracy (+/- .010"). This shall greatly enhance assembly and matching of repair parts. The body compartment floors, rear walls and roof areas shall be constructed of 12-gauge austenitic stainless steel. The vertical front and rear walls are designed with 14-gauge stainless steel. These front and rear walls are designed as a structural beam with the inclusion of the design encompassing a front and rear design that allows for installation of telescoping lights.

Interior and unexposed stainless steel panels shall be #4B finish to eliminate the need for high maintenance painted surfaces in the compartments. All exterior non-painted stainless steel panels shall have #4B finish.

The entire body shall be fabricated using precision holding fixtures to ensure accurate dimensions. Body front and rear vertical flanges shall be triple broken, providing a mounting area for rear hand rails. Major body components shall consist of right and left body sides, and rear facing compartments.

The front and rear vertical corners of the apparatus body shall be recessed to provide a mounting area for vertical hand rails and/or telescoping light poles.

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COMPARTMENT ROOF CONSTRUCTION

Each compartment top shall have a bolt in 12-gauge stainless roof section for supporting roof loads of up to 500 pounds per square foot without permanent roof deformation. The stainless roof sections shall attach the compartment rear wall and compartment vertical sides through a fastened joint creating a full perimeter compartment attachment of the stainless roof section.

BODY MOUNTING SYSTEM

The front body support system shall be an integral design with .250" thick steel deep section cross member across the top of the chassis frame. The deep section cross member shall be attached to the right side and the left side lower front compartment weldments with grade 8; 3/8 inch diameter bolts on each side of the apparatus. The front cross member shall be attached to the chassis by means of an elastomer spring with extended travel captivated die spring mounting system with limited travel.

The lower portion of this spring mounting system shall be an integral part of the pump module frame mounting system. This design allows for maximum chassis flexing without undue stress transfer to the apparatus body.

The right and left side rear compartments shall be attached to a steel rear body support. The stainless steel support shall be attached to the chassis frame extensions by means of an elastomer spring mounting system with extended travel captivated die spring to form a modular integral body support system.

The apparatus body shall not rest upon the chassis truck rails and must be separated entirely from the steel frame of the chassis to prevent galvanic action.

Loose fitting u-bolt body mounting systems are not acceptable due to the likeliness of the apparatus body shifting or becoming detached from the chassis upon rear end impact.

COMPARTMENT INTERIOR FINISH

For better interior visibility, to reflect light better, ease of maintenance and prevent the masking of poor welds and questionable workmanship the interior of the body compartments shall remain uncoated.

EXTERIOR ROOF FINISH

The top of the compartments shall be brushed stainless steel. The roof shall contain 'Not a Stepping Surface' labeling.

REAR TAILBOARD

The tailboard shall be constructed of stainless steel in a three-piece design to allow severe twist of the apparatus without damage to the apparatus body or tailboard. The surfaces material of the tailboard shall be "Laser Grip" to provide optimum gripping in the environment found in wildland fire operations. The tailboard shall be 10 inches measured from the body to the rear edge.

The center section of the tailboard shall have a pivot design to allow access to the apparatus rear toe eye for vehicle recovery. The pivot shall be held in place by a detent handle, providing locking positions in up half-down and down.

In the center section of the tailboard there shall be a secondary flip-down step provided to reduce the stepping height from the ground to the rear tailboard. The secondary step shall have slotted legs allowing it to drop down in the up position

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which shall allow the RR1 doors to be opened without any interference. These slots will also lock the step in the up position and shall require the user to lift up the step to swing it down to the lowered position.

The flip-down step shall have a break-away stop in the lowered position in the event the apparatus is backed into an object with the step in the down position.

The tailboard shall provide recessed mounting for the rear ICC marker lights.

CHASSIS FRAME EXTENSION

There shall be a rear five (5) inch x three (3) inch x 1/4 inch wall ASTM A-500 grade B rectangular tubing frame extension to provide frame support for the rear of the apparatus body.

Two 5/8 inch ASTM 572 Grade 50 vertical mounting plates are to be welded to the tubing to provide a drop frame connection to the truck chassis. This extension assembly is to be bolted to the truck chassis with eight (8) 1/2 grade 8 bolts with hardened flat washers to form an integral part of the truck frame assembly.

Two 1/2 inch thick by 43 inch long cross support stabilizer bars are to be bolted horizontally in place from the rear tow eye plate to beneath the vertical mounting plate chassis attachment point.

REAR TOW EYE

A 3/4 inch thick rail width by nine (9) inch deep rear horizontal tow eye plate with a four (4) inch diameter rear tow eye in the plate.

HOSE ROLLER FIXTURE

A 2 inch by 2 inch receiver is to be bolted in place, offset to the left (driver's) side for use as a hose roller fixture.

EXTENSION PAINT FINISH

The rear frame extension assembly and tow eye plate is to be painted the color of the truck chassis frame rails.

The rear frame extension shall be finish painted to match the chassis frame.

COMPARTMENT DESIGN AND CONSTRUCTION

All compartments shall be manufactured from 12-gauge stainless steel with the vertical front and rear corner walls from 14-gauge, shall be of sweep out design and shall be bolted together. Stainless recessed round head bolts and stainless aircraft style "ESNA" nuts shall be applied with proper torque rating for each fastener. This type of construction shall greatly enhance the strength and ease of parts replacement in the event of damage and future modifications.

COMPARTMENT VENTILATION

The body shall be provided with a laser cut louvers to provide ventilation.

VENT FILTRATION

There shall be filters provided for compartments. The protective louver covering the filter shall be removable to allow for

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filter changing.

The filter shall be 100% virgin nylon fiber in an open web design that is USDA approved. The filter shall be chemically treated with Dimethyl Benzyl Ammonium Saccharinate to aid in the reduction of bacteria and fungi.

WATER TANK CAPACITY

The water tank shall be rectangular shaped and shall have a minimum capacity of 500 US gallons.

TANK LID & FILL TOWER

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of 1/2" thick Polyprene & Mac226 and shall be a minimum dimension of 10"x 14" outer perimeter. The tower shall be located in the center of the tank. The tower shall have a 1/4" thick removable Polyprene & Mac226; screen and a Polyprene & Mac226 hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum ID of 4" that is designed to run through the tank, and shall be piped behind the rear axle beneath the tank.

The tank cover shall be constructed of recessed 1/2" thick Polyprene & Mac226, stress relieved, UV stabilized material. A minimum of two lifting dowels shall be drilled and tapped to accommodate the lifting eyes.

OVERFLOW AND VENT PIPE

The fill tower shall be fitted with an integral 4" ID, Schedule 40 PVC combination overflow/vent pipe running from the fill tower through the tank to a 4" coupling flush mounted into the bottom of the tank to allow water to overflow beneath the chassis.

BODY MODULE AND HOSEBED CAPACITIES

The total capacity of the body module exterior compartments shall be 103-1/2 cubic feet excluding the pump body compartment.

The length from the rear of the hosebed to the headboard shall be 80".

The total capacity of the body hosebed shall be approximately 48 cubic feet.

The hosebed height shall be approximately 51-3/4" from the top of the rear tailboard.

The body shall have an overall length of 101.5".

APPARATUS BODY HOSEBED

The hosebed shall be constructed in such a manner that will prevent damage to fire hose. The hosebed shall comply with the current NFPA requirements. The interior of the hosebed shall be free of projections such as nuts, sharp edges or brackets that may damage hose. The hosebed and walls shall be manufactured from stainless steel.

An aluminum extrusion shall be installed over the rear opening of the hosebed to protect the body from wear. The hosebed floor shall be fitted with removable slatted, ribbed heavy-duty extruded aluminum floorboards.

HOSEBED TOP LOADING EQUIPMENT COMPARTMENT

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In the front of the hosebed a top loading equipment compartment that runs the width of the hosebed shall be installed. The compartment shall be constructed of stainless steel with a total volume of 16.6 cubic feet. Inside dimensions shall be 21" long x 19" deep and 72" wide.

The top of the coffin compartment is to be provided with a single lift up door. The lift up door shall be a 'double wall' design overlapping the top of the compartment to reduce the possibility of rain entering the compartment.

The door shall be constructed of aluminum with smooth finished inside panels and NFPA compliant treadplate on the exterior. The door is to be attached to the compartment top with a continuous stainless steel hinge along the outer edge. The compartment door opened shall provide one clear space area of 68" x 18" for access into the compartment.

The compartment floor shall be formed with a recess ribbed design for strength and to create a depressed area that will allow any accumulated debris or moisture to collect without the equipment resting in the contaminant. The depressed area is to be covered with open grating material. There shall be large diameter drain holes with removable plugs placed in the depressed area of the compartment floor for cleaning out the compartment.

The compartment door shall be wired into the door open warning circuit. Inside the compartment there shall be one (1) LED light activated when the door is open for low ambient light operating conditions.

The compartment shall be bolted in place and removable for water tank service.

HOSEBED CAPACITY

The hosebed design shall provide two separate hosebeds, one on the left and one on the right side of the fill tower/foam cell compartment. Each hosebed shall have internal dimensions of 28" wide x 18-1/2" tall x 80" from the front of the truck to the rear providing a total hosebed capacity of 48 cubic foot for hose storage.

ADJUSTABLE HOSE BED DIVIDERS

Two (2) adjustable hosebed dividers shall be provided. Each divider shall be fabricated from .250" thick smooth aluminum plate, 5052-H32 alloy. The rear end of each divider shall have a 3" radius corner and shall be sanded and deburred to prevent damage to hose.

There shall be two hand hold openings provided. One (1) at the rear in a vertical position and one (1) approximately 24 inches in from the rear in a horizontal position.

HINGED ALUMINUM HOSEBED COVERS

Two (2) two-piece polished aluminum treadplate hosebed covers shall be supplied and shall extend the full length and width of the main hosebed. The hosebed covers shall be constructed of .125" polished aluminum treadplate with cross bracing to provide maximum strength and rigidity to support the weight of a firefighter standing on the covers when closed. The aluminum treadplate shall meet the current revision of NFPA 1901 for step requirements.

The covers shall be equipped with a full length stainless steel piano hinge and a grab handle installed at the rear of each cover. There shall be a gas shock installed on each cover to assist in opening. The hosebed covers shall include a heavy duty positive mechanical stop at the rear of the hosebed to support them when placed in the open position.

An additional chrome handle shall be installed at the front of each hosebed cover. The handles shall be mounted on the top flat surface cover along the welded brace at the front of the covers.

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REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be one (1) red vinyl flap attached to each aluminum hosebed cover. The vinyl flaps shall cover the area at the rear of the hosebed from top to bottom. The flaps shall be independent of each other. The bottom edge of each flap shall be weighted with a powder coated steel bar .

Each hosebed flap shall have two (2) red webbed straps with quick release adjustable clips to meet the requirements of NFPA.

HOSEBED COMPARTMENT LIGHTING

Four (4) weather proof LED lights shall be provided on the underneath side of the aluminum hosebed covers. Two (2) lights shall be provided for each side cover. Each side of the hosebed cover shall have an automatic compartment light switch.

LEFT SIDE COMPARTMENT DIMENSIONS

ABOVE WHEEL WELL

There shall be one (1) high side full depth compartment centered over the rear wheels. It shall have dimensions of 51-1/2" wide x 42-1/2" high. The clear door compartment dimensions shall be 49-1/2" wide x 37" high x 23-1/4" deep with the door closed.

REAR OF WHEEL WELL - RAISED FLOOR

There shall be one (1) rescue style, full height, and full depth compartment behind the rear wheels. It shall have approximate dimensions of 38-1/2" wide x 60" high. The clear door compartment dimensions shall be 34" wide x 54-1/2" high x 23-1/4" deep.

The rear compartment is raised to meet the 20° angle of departure critical to the mission of this equipment.

The rear floor shall be reinforced for the rigors of off-road. The body compartment doors shall have a bright finished drip rail.

HINGED DOOR CONSTRUCTION - LEFT SIDE

All left side compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

Vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

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The left side door latches shall be Hansen locking slam latches, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

FENDER SIDE SKIRTS

There shall be stainless steel fender side skirts located in the area of the rear wheels. The design of the fender sides shall be a minimal length to provide maximum compartment space in the apparatus.

BODY FENDERS - POLISHED

The apparatus body fenders shall be made from 16 gauge polished stainless steel and shall be rolled, die stamped and fully removable. The stainless steel fenders and stainless fender liners shall be fastened with stainless bolts and ESNA nuts to the outer fender panel.

REAR AXLE MUD FLAPS

Two (2) black, anti-sail, mud flaps shall be mounted behind the rear wheels.

SCBA BOTTLE COMPARTMENTS

Four (4) SCBA bottle tube compartments shall be provided, two (2) in each side rear wheel well area. These tubes shall be located rear of the single axle tire. Each compartment shall be constructed of gray roto molded storage compartment to provide SCBA scuff protection. A door seal shall be provided at the perimeter of the SCBA compartment. The doors shall be brushed stainless steel with a push button trigger latch.

SCBA BOTTLE RETENTION STRAP

One (1) one-inch (1") wide loop of red webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in the event the door is not latched for travel. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

RIGHT SIDE COMPARTMENT DIMENSIONS

ABOVE WHEEL WELL

There shall be one (1) high side reduced depth compartment centered over the rear wheels. It shall have dimensions of 51-1/2" wide x 42-1/2" high. The clear door compartment dimensions shall be 49-1/2" wide x 37" high x 11-1/4" deep with the door closed.

REAR OF WHEEL WELL - RAISED FLOOR

There shall be one (1) rescue style, full height, and reduced depth compartment behind the rear wheels. It shall have approximate dimensions of 38-1/2" wide x 60" high. The clear door compartment dimensions shall be 34" wide x 54-1/2" high x 11-1/4" deep in the upper section and 23-1/4" deep in the lower section with the door closed.

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The rear compartment is raised to meet the 20° angle of departure critical to the mission of this equipment.

The rear floor shall be reinforced for the rigors of off-road. The body compartment doors shall have a bright finished drip rail.

HINGED DOOR CONSTRUCTION - RIGHT SIDE

All right side compartments shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

Both vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

The door latch(es) shall be Hansen locking slam latch(es), with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

REAR COMPARTMENT DIMENSIONS

There shall be one (1) storage compartment at the rear of the body. It shall have approximate dimensions of 48" wide x 48-1/2" high. The clear door compartment dimensions shall be 30" wide x 34" high x 26-1/2" deep with the door closed.

The rear compartment floor is raised to meet the 20° angle of departure critical to the mission of this equipment.

HINGED DOOR CONSTRUCTION - REAR COMPARTMENT

The rear compartment shall be provided with hinged doors. The hinged compartment doors shall be flush style so that the entire door fits flush against the apparatus body sides. All doors shall be provided with a high quality, continuous double seal type weather stripping to prevent moisture and dust from entering the exterior compartments. No exceptions are allowed to this requirement.

Each door shall be double pan design with the outer door material being 12 gauge stainless steel with a 1/8" aluminum removable inner liner that shall have a natural finish to provide reflective qualities during night operations.

Both vertically hinged and horizontally hinged doors shall have gas shocks. A polished stainless steel 1/4" piano hinge shall be provided for each door.

The exterior of the doors shall be painted to match the main job color.

The door latch shall be Hansen locking slam latch, with a chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

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LADDER STORAGE - ON BEAM

The ladder shall be mounted on the right side of the body to the right of the water tank. The ladders shall be placed into the body from the rear of the apparatus sliding into the compartment on beam. A single plate vertically hinged door shall be provided.

The compartment shall be capable of storing one (1) 20' three-section ladder, one (1) backboard, one (1) 5' digger bar, one (1) 8' pike pole and one (1) 8' rubbish hook.

The door latch shall be provided with a rotary locking chrome "D" ring with a 5-degree bend for easier grasping of each door handle with gloved hands. The latch shall be provided with a keyed lock.

Type III Ladder Group, 20-3 Section

EXTENSION LADDER

One (1) 20' three-section Duo-Safety model 912, aluminum extension ladder shall be provided with the apparatus.

SUCTION HOSE STORAGE

Two (2) suction hose storage compartments shall be located above the side storage compartments on both sides of the apparatus. The compartments shall hold a combined total of three (3) eight (8) foot section of five (5) inch hard suction hose and strainer. Both compartments shall be capable of holding two (2) eight (8) foot sections of hose if needed. The compartments shall be constructed of step grade aluminum diamond plate. Each compartment shall have an aluminum diamond plate stainless steel hinged door on the rear of the compartment. Each compartment door shall have a locking positive latching door latch.

HARD SUCTION HOSE

Two (2) 8' long x 4" diameter, lightweight PVC flexible suction hose shall be provided. It shall be first quality, non-collapsible type and designed for having a low friction loss which will not collapse under a vacuum of 23". The hard suction hose shall be equipped with a 4" NH long handle female end and 4" NH rocker lug male end couplings.

BODY RUBRAIL / LIGHTING SYSTEM

The apparatus body shall have a bolt on extruded, bright anodized aluminum rub rail affixed to the side beneath each door area. Each rub rail shall be attached to the apparatus body with stand off spacers made from 1" diameter UHMW Polyethylene bar stock.

The rubrail shall be designed with an integral white LED strip light. The white LED shall be downward facing and activated with the ground light circuit.

The rubrail design shall also include a red LED strip light. The red LED strip light shall face outward and activate as a red flashing warning light when the warning lights are active.

APPARATUS BODY PAINT

The following apparatus body components shall be painted job color.

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The rear wheel fender panels.
The compartment side doors.
The hosebed side walls.
The rear panel of the top loading hosebed equipment compartment.
The area between the side doors.
The rear of the apparatus body on each side of the RR1 compartment.
The rear ladder and suction hose compartment doors. (exterior surface and door edges only)

Note: No paint required on the rear corners of the hosebed or coffering compartment. No paint on the inside of the lower rear compartment doors.

APPARATUS COMPARTMENT LIGHTING

Two (2) LED, armor protected, strip lights shall be provided one (1) each side of the compartment at the door frame for each body compartment. Each body door shall have an automatic compartment light switch.

There shall be a white/red color selector switch in the cab that controls the color of this lighting.

UNDERBODY LIGHTING

Underbody ground lights shall be provided under the apparatus body. Two (2) Hella Picador flood lights shall be provided at the rear of the apparatus body, one (1) each side, to illuminate under the rear compartments.

There shall also be two (2) LED ground lights provided under the pump panel running boards, one (1) each side, to illuminate the area under the pump panel areas. These lights are activated by a switch on the pump panel.

REAR BODY STEPS

There shall be six (6) Cast Products fixed steps with integral hand hold installed on the rear of the apparatus body. The step shall have an open grate design for self cleaning. The lower steps shall be mounted one (1) each side beneath the thru storage compartment doors. There shall be two (2) steps mounted each side inboard between the thru compartment and rear compartment doors.

A stainless steel scuff plate shall be provided behind each step and extend upward in the toe kick area to protect the rear body finish.

INTERFACE (I-ZONE) BRACKETS

Two (2) extruded aluminum handrail sections shall be provided, with brackets. The brackets shall be designed to hold the handrails in position with a quick pin to hold in place for operation. Inside the right rear door of the RR1 compartment there shall be a storage bracket to hold the handrails when not in use. The I-Zone brackets are provided to lace hose between when moving from house to house during structure fire protection operations.

REAR HANDRAILS

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Four (4) ribbed, solid stock 1-1/4" diameter, aluminum handrails with chrome plated stanchions shall be supplied and installed at rear of the apparatus body. There shall be two vertical handrails installed, one (1) each side on the rear area of the body in line with the rear of the hosebed side walls. These handrails shall begin at the top of the hosebed side walls and extend down to the bottom of the ladder and suction hose storage compartments. One (1) handrail shall be installed horizontally along the lower edge of the hosebed. One (1) handrail shall be installed at the top of the rear panel of the top loading fill tower/foam cell compartment.

APPARATUS ICC MARKER LIGHTING

Five (5) red LED clearance lights shall be supplied, mounted in the rear of the apparatus.

Two (2) red LED clearance lights shall be supplied, mounted facing the side of the apparatus.

ICC lighting utilized and lighting positions shall be in conformance with FMVSS 108.

BUMPER MOUNTED FOG LIGHTS

Two (2) four (4) inch diameter LED driving lights shall be mounted recessed with a chrome bezel.

REAR STOP / TAIL / TURN / BACKUP LIGHTS

The rear of the apparatus shall be equipped with 4" diameter grommet mounted rear lights. The top light in the assembly shall be a LED amber lamp wired as the rear directional signal. The middle light set shall be a red LED stop/tail lights and the lower lights shall be clear LED backup lights.

BACK-UP ALARM

A solid state electronic backup alarm shall be installed on the rear of the apparatus and wired to the backup light circuit.

One (1) rear license plate mounting system and LED light shall be provided. The license plate shall be located on the rear of the apparatus to the right of the RR1 compartment door. There shall be a backer installed for the license plate.

One (1) front license plate mounting system shall be provided on the hood on the right of the grille.

CAB FORWARD ROOF MOUNTED LIGHTBAR

An Ahrens-Fox, single tier beacon shall be mounted facing forward on the cab roof. The beacon housing shall be finished in black powder coating.

The beacon shall contain eight (8) warning light pods facing forward and one (1) pod facing each side of the apparatus. Each pod shall contain ten (10) red LED's with red lens.

These light bars fulfill the requirements for Upper Zone A and in combination with the upper rear warning devices fulfill the requirements for Upper Zones B, C, and D. Any clear warning light(s) in the light bar shall be disabled automatically for the "Blocking Right of Way" mode.

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LOW LEVEL WARNING LIGHTS

Two (2) Whelen, C6 SurfaceMax series red super LED light heads with red lenses shall be surface mounted to the face of the grille. The lights shall be 18 inches from the top of the bumper gravshield

Two (2) Whelen, model LINZ6R, LED chrome bezel mounted warning lights shall be mounted on the front bumper facing forward on the swept area of the bumper.

These four (4) lights fulfill the requirements for Lower Zone A lower level warning devices.

FRONT INTERSECTION LIGHTS

Two (2) Whelen, model LINZ6R, LED flush mounted warning lights with aluminum bezels shall be mounted in each side of the front bumper.

These two (2) lights fulfill the requirements for Lower Zone B & D lower level warning devices.

BODY SIDE WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted one (1) on each side of the body over the rear wheel.

These two (2) lights fulfill the requirements for Lower Zone B & D lower level warning devices.

REAR UPPER LEVEL WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted on the upper rear of the apparatus.

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted on the upper rear sides of the apparatus.

These lights fulfill the requirements for Upper Zone B, C & D upper level warning devices.

REAR LOWER LEVEL WARNING LIGHTS

Two (2) Whelen, model 70R02FCR 3 x 7, red LED warning lights with clear lens and chrome bezels shall be mounted on the rear of the apparatus below the taillights at the lower outermost corners in vertical position.

These two (2) lights fulfill the requirements for Lower Zone C lower level warning devices.

LED TRAFFIC ADVISOR

One (1) amber LED Whelen traffic advisor, TAM83, with cable, shall be mounted on the upper rear of the apparatus. The 30" long device shall consist of eight independent TIR3 LED heads.

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The switch control box is to be mounted in the cab console allowing for easy operation by the driver.

BODY SIDE WORK LIGHTING

The side of the apparatus shall be provided with two (2) Maxxima LED work lights model# MWL-28. The flood lights shall be mounted one (1) each side of the pumphouse to the rear of the crosslay preconnect valve.

REAR SPOT/WORK LIGHTING

The rear of the apparatus shall be provided with two (2) HiViz FT-WL-X-9-S-B-SH black housing LED spotlights. These lights are to be mounted one (1) on each side of the rear of the apparatus body beneath the upper level warning lights.

There shall also be two (2) Maxxima MWL-42 LED flood lights provided. The flood lights shall be mounted one (1) each side beneath the mid level rear fixed step.

ALUMINUM SHELVES - ADJUSTABLE

Three (3) shallow adjustable aluminum shelves shall be installed and have flanges that are 2" deep with a material thickness of .188". A channel strong back shall be provided along the center, bottom of each shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

The shallow shelves are to be located as follows:

In the compartment on the left side over the wheels (L1) there shall be one (1) SCBA bracket mounted to the rear wall on the left side of the compartment. A fixed vertical divider wall is to be located to the right of the SCBA bracket location. Two (2) shelves shall be mounted one (1) full width in the upper portion and one (1) three-quarter width in the portion of the compartment next to the SCBA mounting.

CONSPICUITY TAPE

Conspicuity tape with a red/white reflective stripe shall be applied along the length of the front face of all adjustable shelves.

FLOOR MATTING

The following locations shall be furnished with Turtle Tile:

- L1 compartment floor the edge of the floor shall be provided with a yellow wedge ramp
- L1 middle (short) shelf
- L1 upper (long) shelf

FULL HEIGHT PULL OUT VERTICAL TOOL BOARDS

Three (3) full height vertical pull out tool board(s) shall be installed in the L2 body compartment.

Each board shall be equipped with Grant slides and a gas shock to hold the board in both the in and out positions. The tool board shall be made from .25" aluminum with a large hand hole for pulling the board out. The bottom of the tool board

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shall be provided with an aluminum box that is 9-1/2" wide by 16" deep. The bottom of each box shall have two drain holes to prevent water accumulation in the box. The department shall add the desired components for tool storage.

CONSPICUITY TAPE

Conspicuity tape with a red/white reflective stripe shall be applied along the face of each pull out tool board box.

ALUMINUM SHELVES - ADJUSTABLE

An adjustable aluminum shelf shall be installed and have flanges that are 2" deep with a material thickness of .188". A channel strong back shall be provided along the center, bottom of each shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

A deep shelf is to be mounted in the rear compartment (RR1). This shelf shall have flanges that are 2" deep with a material thickness of .188". Two channel strong backs shall be provided along the bottom of each deep shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

CONSPICUITY TAPE

Conspicuity tape with a red/white reflective stripe shall be applied along the length of the front face of all adjustable shelves.

FLOOR MATTING

The following locations shall be furnished with Turtle Tile:

RR1 shelf

RR1 floor - the edge of the floor shall be provided with a yellow wedge ramp

ALUMINUM SHELVES - ADJUSTABLE

Two (2) shallow adjustable aluminum shelves shall be installed and have flanges that are 2" deep with a material thickness of .188". A channel strong back shall be provided along the center, bottom of each shelf. Each shelf shall be fully adjustable in height and held in place by extruded uprights.

The shallow shelves are to be located as follows:

Two (2) shallow shelves shall be mounted in the compartment on the right side (R2), one (1) in the upper portion and one (1) in the lower portion of the compartment mounted at the compartment split depth position.

CONSPICUITY TAPE

Conspicuity tape with a red/white reflective stripe shall be applied along the length of the front face of all adjustable shelves.

FLOOR MATTING

The following locations shall be furnished with Turtle Tile:

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R2 both shelves

R2 floor - the edge of the floor shall be provided with a yellow wedge ramp

SCBA BRACKETS

Three (3) Zico SCBA brackets are to be located in the R1 compartment.

FLOOR MATTING

The following locations shall be furnished with Turtle Tile:

R1 shelf above SCBA mounting area

R1 floor - the edge of the floor shall be provided with a yellow wedge ramp

WHEEL CHOCKS

One pair of heavy duty, extruded aluminum wheel chocks measuring 8" high x 7" wide x 11.8" long shall be provided with the apparatus. Worder 7HY HD Yellow Handled Extrusions are the requested chocks. The wheel chocks shall have a bright yellow powder coat finish for high visibility, safety and corrosion resistance. No exception shall be allowed to these requirements.

Wheel chocks are to be stored in the wheel chock compartment in the right side of the pump module.

REFLECTIVE SAFETY STRIPE

A 6" wide 3M brand Scotchlite reflective stripe shall be affixed to the vehicle. The side striping shall begin at the rear of the front fender on the hood and proceed to the rear of the cab. There is no striping on the pump panel left or right side. The strip shall continue on the body in line with the cab strip and terminate at the rear sides of the body. The front of the hood shall have a 2" wide stripe applied to the bottom of the grill area.

REFLECTIVE STRIPE COLOR

The apparatus body striping shall be white reflective.

REAR DOOR REFLECTIVE CHEVRON STRIPING

Red and yellow reflective chevron striping shall be provided and applied to the rear door(s). The stripes shall be 4" wide and shall alternate red and yellow. The chevron pattern shall angle up from the outer edges toward the center of the rear body.

WATER TANK WARRANTY

The water tank is to be free from defects in material and workmanship for the normal service life of the apparatus in which the water tank is installed.

If a tank has a defect in material or workmanship covered by the warranty, the tank manufacturer shall repair at their cost, by authorized personnel or authorized third parties. The tank manufacturer shall make an effort to effectuate repair within 48 hours following initial notification of a covered defect. The tank manufacturer shall make a reasonable effort to repair tank at most convenient location to end user.

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The tank manufacturer shall reimburse all reasonable costs associated with rendering the tank accessible for repair, including, but not limited to, removal and reassembly of the hose bed floor.

== Limited Warranty - Use For Contracts - 4.001 ==

HME, INC. **LIMITED WARRANTY**

Thank you for purchasing our products!

This book specifies the limited warranty offered by HME, Inc. (“**HME**”) for HME products. Please note that the applicable limited warranty depends on what product you, the original purchaser, bought. As such, not all terms contained in this book will be applicable to you. Please review the coverage(s) appropriate for your HME product before proceeding through the rest of this book.

This book is divided as follows:

Section A, General Provisions

Section B, Limited Warranties

Section C, Exclusions

Section D, Additional Provisions Applicable to All Products.

HME’s limited warranty set forth in this book will be referred to collectively as this “**Limited Warranty**” or “**HME’s Limited Warranty**”. In this Limited Warranty, the term “**you**” and “**Customer**” will refer to the original purchaser/owner of the HME products and not to any subsequent purchaser or owner.

A. GENERAL PROVISIONS

This Section A constitutes part of the Limited Warranty for all HME products.

Who and What HME’s Limited Warranty Covers

HME’s Limited Warranty only covers you, the original purchaser/owner of new HME product(s). Subsequent owners or purchasers are not covered by this Limited Warranty.

Subject to the limitations and exclusions set forth in this Section A as well as Sections B, C, and D below, HME’s Limited Warranty generally covers repair, finish, or replacement, at the sole option of HME, of your new HME cab, chassis, apparatus, aerial or any components thereof (hereinafter “**Covered Part(s)**”) in which a defect in materials or workmanship appears during normal use, maintenance or service within the Warranty Period (as “**Warranty Period**” is defined in each part of this Limited Warranty).

HME, Inc.

If HME determines there is warranty coverage for a Covered Part, HME shall, at its sole option, repair, refinish, or replace (or have repaired or refinished), at HME's factory, by HME's representative at the location of the Covered Part, or at HME's authorized service facility (whichever location HME designates), any Covered Part not otherwise excluded from HME's Limited Warranty if the Covered Part proves, in HME's opinion, to be defective and if all other terms of this Limited Warranty are complied with. The repair, refinish, or replacement of a Covered Part does not extend the life of this Limited Warranty. This Limited Warranty is valid only in the United States and Canada.

What This Limited Warranty DOES NOT Cover

This Limited Warranty is limited by the limitations and exclusions in this Section A and is also limited by the limitations and exclusions set forth in Sections B, C, and D below. The limitations and exclusions set forth in the most specific Section of this Limited Warranty shall supersede the warranty provisions in all other Sections. For example, if there is a potential paint defect, then subject to the other limitations and exclusions in this Limited Warranty, the paint limited warranty would apply in Section B(3) below rather than the general warranty in Section B(1) below.

No Replacement or Repurchase of Fire Apparatus. IF HME DETERMINES THERE IS WARRANTY COVERAGE, REPAIR, REFINISH, OR REPLACEMENT OF COVERED PARTS BY HME IS THE EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY. **HME WILL NOT UNDER ANY CIRCUMSTANCES REPLACE A FIRE APPARATUS OR REPURCHASE THE FIRE APPARATUS FROM YOU.**

B. LIMITED WARRANTY

1. General Warranty

The Limited Warranty under this Section B(1) (the "**General Warranty**") for Covered Parts is limited to chassis systems and components such as the driveline, cooling system, hydraulic system, suspension, air system, and climate control system, (but excludes the engine, transmission and axles); apparatus systems and components; and the aerial device and system.

Warranty Period for General Warranty

The General Warranty is in effect for a Warranty Period that continues until 36 months from the date of delivery of the new fire apparatus to the original owner, or the first 36,000 actual miles (or 57,900 actual kilometers) from the delivery date, whichever occurs first. At the time of purchase, you as the original purchaser have an option at an additional cost to extend the Warranty Period for the General Warranty for additional years up to a maximum period of 5 years from the delivery date, 100,000 miles from the delivery date, or 3,000 engine hours from the delivery date, whichever occurs first. The General Warranty is not valid if the odometer is disconnected, or its reading has been altered, or mileage cannot be determined.

2. Structural Warranty

The Limited Warranty under this Section B(2) (the "**Structural Warranty**") for Covered Parts is limited to the cab structure, body structure, and structural failures of aerials.

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Warranty Period for Cab Structural Warranty

The Structural Warranty is in effect for a Warranty Period that continues until 10 years from the date of delivery of the completed new fire apparatus to the original purchaser, or the first 100,000 actual miles (or 161,290 actual kilometers) from the delivery date, whichever occurs first. The Structural Warranty is not valid if the odometer is disconnected, or its reading has been altered, or mileage cannot be determined.

3. Paint Warranty

The Limited Warranty under this Section B(3) (the “**Paint Warranty**”) specifically covers Paint Defects on a cab exterior finish, apparatus body panel exterior finish, or the aerial ladder assembly manufactured by HME. A Covered Part shall be considered to have “**Paint Defects**” if it is found by HME to have any loss of gloss, color retention, cracking, blistering, bubbling or flaking under normal use and with normal maintenance and cleaning. For Paint Defects, you as the original purchaser must notify HME in writing within 30 days after any claimed Paint Defect has appeared. In the case of a warranty claim, the refinish or repair of all non-warranty blemishes, if any, shall be negotiated prior to the warranty refinish or repair.

Warranty Period for Paint Warranty

The Paint Warranty is in effect for a Warranty Period that continues until the period specified below or the date of the first 36,000 actual miles (or 57,900 actual kilometers) from the delivery date. The Paint Warranty is not valid if the odometer is disconnected, or its reading has been altered, or mileage cannot be determined. At the time of purchase, you as the original purchaser have an option for an extra cost to extend the Warranty Period for the Paint Warranty for additional years up to a maximum of 5, 7, or 10 years. The Paint Warranty only covers the cost to refinish or repair Paint Defects for the specific defect and at the percentages set forth below:

Top Coat and Appearance Gloss, Color Retention, Cracking		Coating System, Adhesion, Flaking, Blistering, Bubbling	
0 to 72 months	100%	0 to 36 months	100%
73 to 120 months	50%	37 to 84 months	50%
		85 to 120 months	25%

Note: To clarify, the chart above does not extend the Warranty Period for the Paint Warranty beyond the first 36,000 actual miles (or 57,900 actual kilometers) from the delivery date. If you purchase the 5 year extended Warranty Period, then the chart above should be limited to 5 years from the delivery date and there will be no warranty after that date.

4. Chassis Frame Rail Warranty

The Limited Warranty under this Section B(4) (the “**Frame Warranty**”) is limited to the chassis frame rail. It does not cover support brackets and hardware, such as those used for fuel tank mounting and cab mounting.

Warranty Period for Chassis Frame Rail Warranty

HME, Inc.

The Frame Warranty is in effect for a Warranty Period that continues until the date that is the expected lifetime of a new vehicle. For purposes of this Frame Warranty, the expected lifetime is 20 years from the original delivery date. This Frame Warranty is not valid if the odometer is disconnected, or its reading has been altered, or mileage cannot be determined.

5. **Frame Rail & Crossmember Corrosion Protection Warranty**

The Limited Warranty under Section B(5) of this Limited Warranty (the “**Corrosion Protection Warranty**”) specially covers galvanized steel corrosion on the chassis frame and crossmembers. The Corrosion Protection Warranty covers parts and labor to correct the affected area as set forth below. Annual inspections at an authorized HME service provider must be performed to keep the warranty in effect.

Upon any claim made under the Corrosion Protection Warranty, the affected area must be inspected, reviewed and approved by HME or its designated repair personnel or facility prior to any work being completed. Any authorized warranty work shall be performed only by HME or its designated repair personnel or facility. Any repairs completed by an unauthorized repair shop or personnel shall cause this Corrosion Protection Warranty to be invalid. The obligations of HME under this Corrosion Protection Warranty are limited to the cost of bringing the affected area into compliance with HME’s specifications or of removing any defects in materials or workmanship.

Warranty Period for Corrosion Protection Warranty

This Corrosion Protection Warranty is in effect for the original owner for a Warranty Period that continues until 20 years from the date of delivery of the new fire apparatus to the original owner.

6. **Stainless Piping Warranty**

The Limited Warranty under Section B(6) of this Limited Warranty (the “**Stainless Piping Warranty**”) includes Covered Parts that are limited to the stainless steel piping used in the construction of the fire apparatus water/foam plumbing systems.

Warranty Period for Stainless Piping Warranty

The Stainless Piping Warranty is in effect for a Warranty Period that continues until 10 years from the original delivery date, or the first 36,000 actual miles (or 57,900 actual kilometers) from the delivery date, whichever occurs first.

7. **Waterway Warranty**

The warranty for the waterway component is a pass-through warranty from the original manufacturer. HME does not provide a warranty for the waterway.

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C. EXCLUSIONS

The following exclusions apply to this Limited Warranty. Additional exclusions may be listed in other Sections of this Limited Warranty.

1. General Exclusions

As to all HME products, items not covered by this Limited Warranty include:

- Normal maintenance activities/items and wear parts such as lubrication, batteries, tires, filter and oil replacement, belts and hoses, brake lining and adjustment, door check strap adjustment, vehicle alignments, electrical accessories, voltage regulator, flashers, windshield wipers, etc.
- Damage caused by, but not limited to, failure to follow the required or recommended maintenance schedule, failure to maintain proper fluid and lubricant levels, failure to ensure operating parameters are maintained and failure to follow operating instructions.
- Damage caused by, but not limited to, misuse, abuse or neglect (e.g. overloading, driving over curbs, or exposure to corrosive, including but not limited to salt and/or acidic exposure, or flooded environments).
- Damage that arises outside of normal use.
- Damage caused by collision, fire, theft, vandalism, civil unrest, acts of terrorism, acts of war, acts of God, or similar casualties.
- Damage or defects with respect to Covered Parts in a vehicle that is leased or rented to a second party for compensation.
- Incidental expenses such as, but not limited to loss of use, inconvenience, loss of time, vehicle rental, towing, lodging or travel costs, etc.
- Additions or accessions not originally installed by HME, including ancillary equipment used in firefighting, and any problems resulting from such additions or accessions.
- Installation of any “aftermarket” devices or the modification of any existing system or component originally installed by HME without HME’s prior express written approval and any problems resulting from such installation or modification.
- Covered Parts that have been sold by an owner other than HME before the Covered Parts become a complete vehicle.
- Any alteration of a Covered Part not authorized in writing by HME prior to alteration.
- Other specific exclusions listed in each part in this book.

2. Exclusions for General Warranty

Items not covered by the General Warranty include:

- The frame, cab structure, body structure, aerial structure, stainless piping, and paint, but each is covered by specific warranty terms as defined in their individual warranties.
- The engine, transmission, axles or components added to the chassis by another party; however, the engine, transmission, axles and/or components added to the chassis by another party may be covered by warranties issued to you from the respective component manufacturers.
- The components added to the apparatus by another party; however, these items may be covered by warranties issued to you from the respective component manufacturers.

HME, Inc.

3. Exclusions for Structural Warranty

Items not covered by the Structural Warranty include:

- All hardware, seats, mechanical items, electrical items and paint finishes.
- Covered Parts damaged as a result of corrosion, including, but not limited to salt and/or acidic exposure.

4. Exclusions for Paint Warranty

Items not covered by the Paint Warranty include:

- Damage caused by lightning, earthquake, windstorm, hail, flood or use in a corrosive or acidic environment.
- Damage from lack of poor maintenance and cleaning.
- Gold leaf or striping except that which is affected by repair. (Gold leaf or striping affected by repair must have been installed during the manufacture of a cab to be covered under the Paint Warranty for the cab.)
- Time, loss of use of the vehicle, inconvenience, vehicle rental, lodging, food or other consequential or incidental loss that may result from a Paint Defect.
- UV paint fade.
- Cab underside
- Chassis frame rails, crossmembers and suspension
- Aerial Ladder torque box and outrigger assemblies.
- Components not painted by HME may be covered by the respective manufacturer's warranty.

5. Exclusions for Frame Warranty

Items not covered by the Frame Warranty include:

- Damage caused as a result of corrosion, including but not limited to salt, chlorides and/or acidic exposure.

6. Exclusions for Corrosion Protection Warranty

Items not covered by the Corrosion Protection Warranty include:

- Parts that have not been galvanized, including but not limited to, suspension hangers, fuel tank and mounting, and air system components.
- Transportation costs.
- Damage due to lack of specified normal maintenance and service as outlined and required in the service and operating manuals provided with the apparatus.
- Damage from accidents, abuse, physical and mechanical damage, and all other conditions not considered as "normal" operating conditions.

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D. ADDITIONAL PROVISIONS APPLICABLE TO ALL HME PRODUCTS

This Section D applies to all HME products.

Exclusive Warranty

THE LIMITED WARRANTY SET FORTH IN THIS BOOK IS THE ONLY WARRANTY APPLICABLE TO HME PRODUCTS AND IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTY BY HME, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS LIMITED WARRANTY IS FURTHER LIMITED BY THE TERMS AND CONDITIONS STATED IN THE PROVISIONS BELOW:

LIMITATION ON DAMAGES: HME shall not be liable for incidental, consequential, direct, indirect or other damages (such as, but not limited to, lost wages, attorney's fees, or lost vehicle rental expenses) that result from any breach or claim related to or arising out of (a) this Limited Warranty, (b) other warranties, if any, (c) any agreement between HME and the Customer, or (d) the HME products or any actual or alleged defect related to the HME products.

LIMITATION ON IMPLIED WARRANTIES: Any implied warranties that arise by way of applicable state or provincial law, including any implied warranty of merchantability or fitness for a particular purpose, are limited in duration to the applicable Warranty Period and are limited in scope of coverage to the Covered Parts covered by this Limited Warranty.

Third Party Representations

HME does not authorize any person to create for HME any other obligations or liability in connection with its products, and HME is not responsible for any representation, promise or warranty made by an HME Sales Representative, component or vehicle manufacturer, or other person beyond what is expressly stated in this Limited Warranty.

How to Obtain the Limited Warranty

In order to be eligible under this Limited Warranty, you **MUST** return a completed "Limited Warranty Registration" form to HME within 60 days of the date of delivery. The original purchaser/owner is responsible for submitting, either directly or with the assistance of the HME Sales Representative, a "Limited Warranty Registration" form to HME within 60 days of the date of delivery.

The "Limited Warranty Registration" form is located in both the HME Chassis Owner's Manual supplied with your new vehicle, and at the end of this Limited Warranty document. THIS LIMITED WARRANTY IS NOT VALID IF THE LIMITED WARRANTY REGISTRATION FORM IS NOT SENT TO HME WITHIN 60 DAYS AFTER THE DATE OF DELIVERY TO THE ORIGINAL PURCHASER/OWNER.

How to Get Service

To obtain warranty service, the original owner shall call HME Monday through Friday from 7:30 a.m. to 5:00 p.m. (Eastern Time) at 1-616-534-1463. Our customer service technicians can help answer questions regarding our products and services, provide information about warranty coverage and maintenance issues, help you arrange for service under third party warranties, and locate HME authorized service centers in your area. ALL LIMITED WARRANTY WORK MUST BE AUTHORIZED BY HME BEFORE REPAIRS ARE MADE. When you call for service, please have the following information available so that we may expedite your service:

HME, Inc.

- Your HME Job Number (Found on VIN Tag)
- Original owner date of purchase
- The current actual mileage
- The current actual engine hours

If service is needed on a Covered Part, you shall be responsible for all cost associated with transporting the Covered Part to the service location HME identifies at the time HME arranges for service. NO WARRANTY CLAIM WILL BE PROCESSED OR PAID WITHOUT PROOF OF ACTUAL MILEAGE AND THE DATE OF DELIVERY TO THE ORIGINAL PURCHASER/OWNER.

Legal Remedies

Any claim or controversy arising out of or relating to this Limited Warranty, or breach thereof, shall be settled by arbitration administered by the American Arbitration Association in the State of Michigan in accordance with the Commercial Arbitration Rules of the American Arbitration Association. The determination of the arbitrator(s) shall be in writing and shall include an explanation of the basis for the determination. The determination of the arbitrator(s) shall be final and binding and judgment upon such determination may be entered in any court having jurisdiction.

COVERAGES

General Warranty - Three (3) Years Total

Cab & Body Paint Warranty - 5 Years