DEKALB COUNTY

FIRE & RESCUE

PROPOSAL FOR TWO (2)

SUTPHEN SPH100

100’ MID-MOUNT ALUMINUM AERIAL

SUBMITTED BY SUTPHEN CORPORATION

PROPOSAL

TO THE:
DeKalb County – Board of Commissioners
Department of Purchasing and Contracting
1300 Commerce Drive, 2nd Floor
Decatur, GA 30030

DATE: August 17, 2020

We hereby propose and agree to furnish the following firefighting equipment upon your acceptance of this proposal via the NPPGOV Co-Operative Purchasing Agreement:

Two (2) Sutphen Heavy Duty Five-Section 100' Mid-Mount Aluminum Aerial Platform (SPH100) with Cancer Prevention Clean-Cab Compartment, 320cu-ft Body Compartment Volume, 243' Ground Ladder Compliment & (2) 1250GPM Monitors Complete and Delivered for the Total Sum of $2,779,574.06

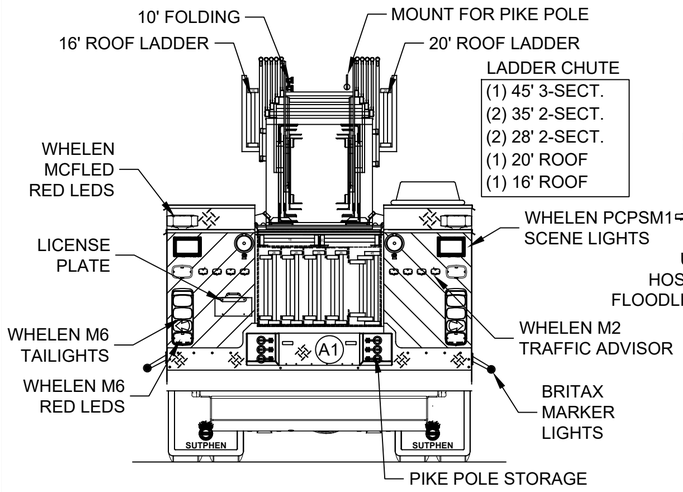
The unit shall be manufactured completely in accordance to the following proposal and delivered in approximately **15-17** months from the date of the contract signing or purchase order, subject to delays from all causes beyond our control.

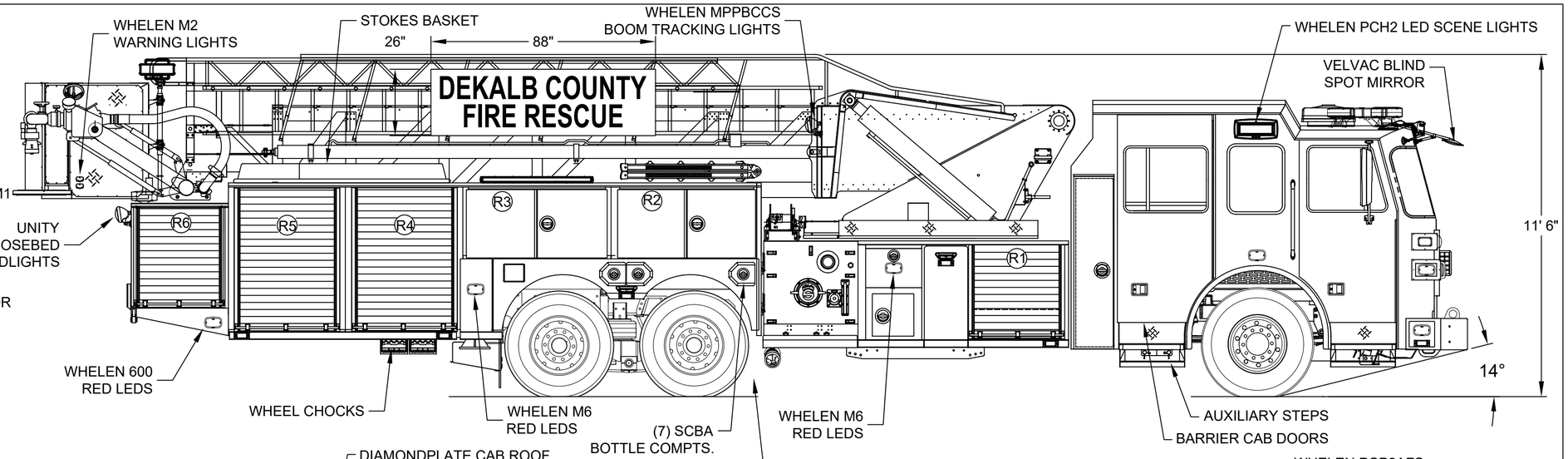
This proposal shall be valid for thirty (**30**) days. If the contract or purchase order is not received within this proposed duration, we reserve the right to extend, withdraw, or modify our proposal, including pricing, delivery times, and prepayment discounts as applicable.

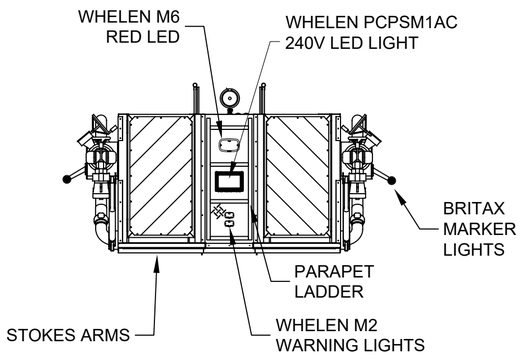
Respectfully submitted,

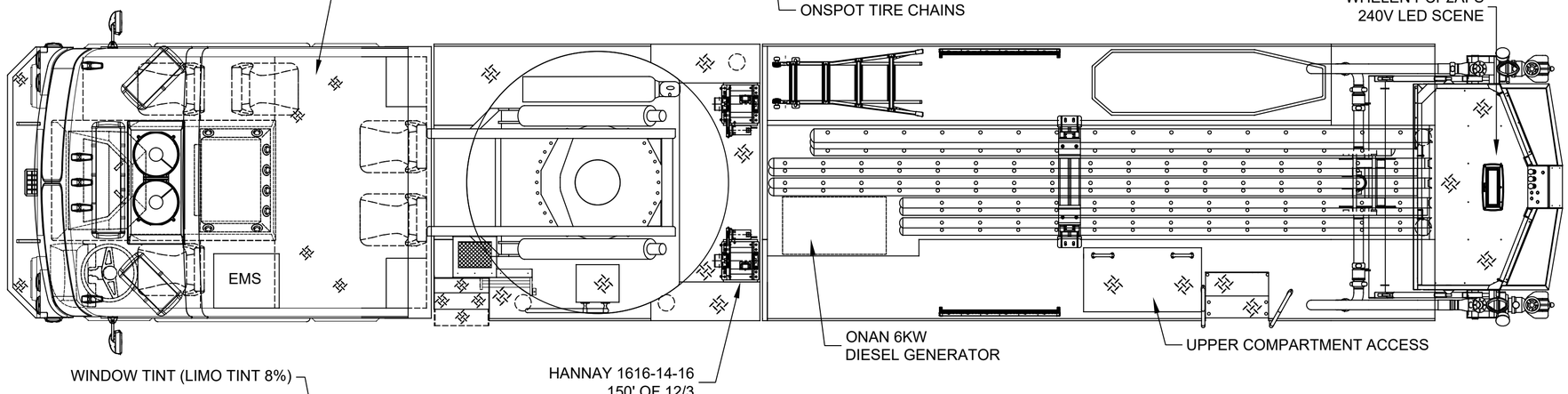
Jerry Harley

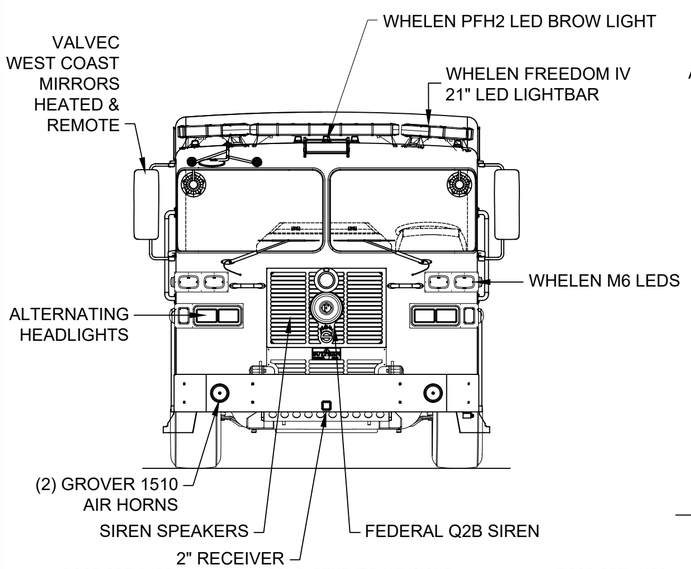
Jerry Harley
Authorized Representative for Sutphen Corporation

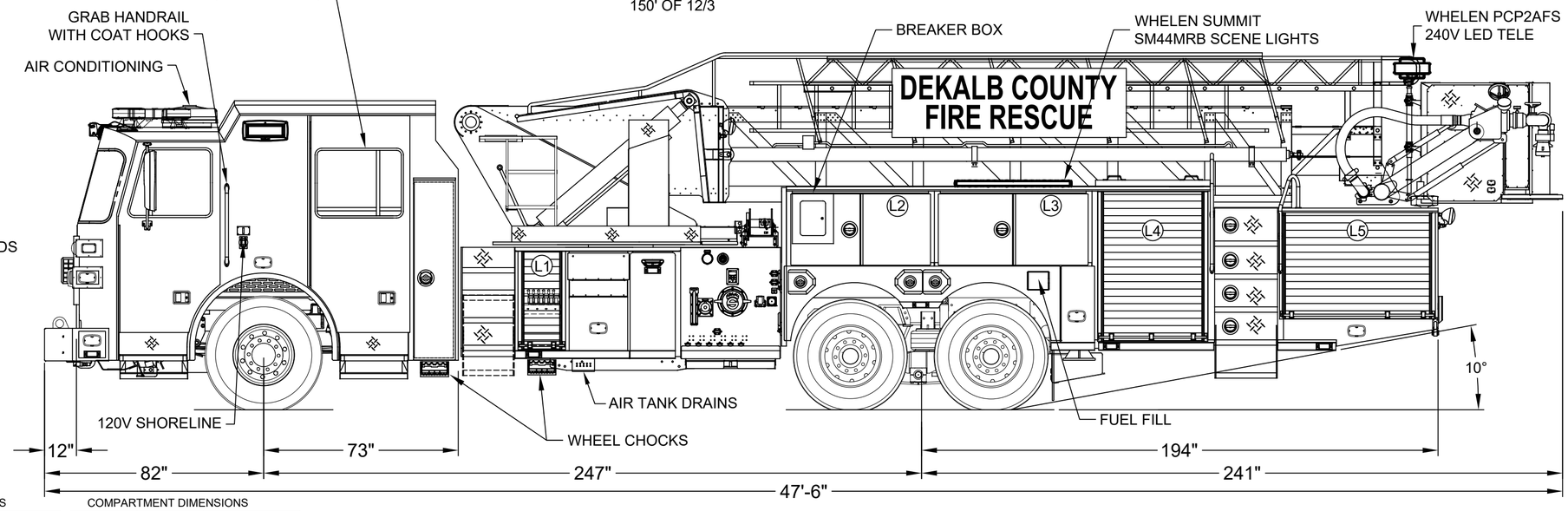












DOOR OPENINGS

COMPT.	HEIGHT	WIDTH
L1	31 13/16	13 7/16
L2	23	50 1/4
L3	23	50 1/4
L4	48 1/2	38 3/4
L5	32 1/8	46

COMPARTMENT DIMENSIONS

HEIGHT	WIDTH	DEPTH
38 1/2	20 5/16	19 7/8
27 1/2	58	20 1/2
27 1/2	58	26 1/2
56 1/2	45 3/4	26 1/2
40 1/8	56 3/4	26 1/2

DOOR OPENINGS

COMPT.	HEIGHT	WIDTH
R1	31 13/16	33 7/16
R2	23	50 3/4
R3	23	50 1/4
R4	48 1/2	38 3/4
R5	48 1/2	38 3/4
R6	32 1/8	30 7/8

COMPARTMENT DIMENSIONS

HEIGHT	WIDTH	DEPTH
38 1/2	40	8 1/2 LOWER 10" 27 1/2 UPPER 28 1/2"
27 1/2	58	26 1/2
27 1/2	58	26 1/2
56 1/2	45 3/4	26 1/2
56 1/2	45 3/4	26 1/2
40 1/8	34 3/4	26 1/2

DOOR OPENINGS

COMPT.	HEIGHT	WIDTH
A1	9 1/8	24 1/2

COMPARTMENT DIMENSIONS

HEIGHT	WIDTH	DEPTH
9 7/8	26	88

TOTAL COMPARTMENT VOLUME - 320.27 CU.FT.

DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE AND ARE SUBJECT TO MINOR DEVIATIONS DURING CONSTRUCTION.

IN THE EVENT OF A DISCREPANCY BETWEEN THE SUTPHEN SPECIFICATIONS AND DRAWING, THE SUTPHEN SPECIFICATIONS SHALL PREVAIL.

DRAWING IS FOR REFERENCE ONLY. SOME ITEMS PROPOSED MAY NOT BE SHOWN OR NOTED.

CUSTOMER APPROVAL

NAME: _____

TITLE: _____

DATE: _____

REV.	DESCRIPTION	BY	DATE
A	UPDATED DRAWING PER CUSTOMER CHANGES	JDH	07/08/20

DRAWN BY: J.HOWELL

DATE: 05/13/2020

MFG. FACILITY: DUBLIN

SUTPHEN

DEKALB COUNTY FIRE RESCUE
STONE MOUNTAIN, GA

SPH100 AERIAL PLATFORM

DWG. NO.: DEKALB COUNTY, GA (2020 SPH100).DWG

Cooperative Purchasing Quote Sheet

Cooperative Purchasing Agency: National Purchasing Partners (NPP) Lead Agency: Leauge of Oregon Cities (LOC)	**Date Prepared:** 08/14/20 **Contract Number:** RFP #1905

Purchaser:		**Vendor:**	
Company:	DeKalb County	**Company:**	Sutphen Corporation
Address:	1300 Commerce Drive	**Address:**	6450 Eiterman Rd.
City, State:	Decatur, GA 30030	**City, State:**	Dublin, OH 43016
Contact:	Nigel Wilson, Fleet Superintendent	**Contact:**	Jerry Harley
Phone:	404-297-6566	**Phone:**	336-613-8202
Email:	newilson@dekalbcountyga.gov	**Email:**	jharley.wfa@gmail.com

Item Number:	**1.G**	**Base Price:**	**$1,103,835.55**

Description: Aerial Platform: Model SPH100 Aerial Platform, Sutphen Monarch Chassis, Tandem Axle, 4-Door Cab, Cummins X12 455hp Engine, EVS4000 Transmission, Stainless Steel Body, 1500 GPM Pump, 300 Gallon Water Tank. Delivery included.

Section 1 - Published Options

Item / Description	Cost
See Attached	$175,535.60
Subtotal	**$175,535.60**

Section 2 - Non-Published Options

Item / Description	Cost
See Attached	$110,415.85
Subtotal	**$110,415.85**
Total of Unpublished Options from Base Model + Published	*8.6%*

Section 3 - Misc. Adjustments

Trade-Ins, Down Payment Discounts, Etc.

Item / Description	Cost
Subtotal	**$0.00**
Total Unit Price	**$1,389,787.00**

Estimated Delivery:	15 - 17 months	**Quantity:**	2
Total Purchase Price			**$2,779,574.00**

DeKalb County

PUBLISHED OPTIONS							
Add, Change, Delete	OPTION #	QTY	DESCRIPTION	CODE	UNIT PRICE	EXTENDED PRICE	With 15% Discount
D	10000210	-1	APPROVAL DRAWINGS	IATS	0.00	$0.00	$0.00
D	10000215	-1	STD WIRING SCHEMATIC	STD	0.00	$0.00	$0.00
A	10000220	1	DETAILED WIRING SCHEMATIC	IPOS	3,123.68	$3,123.68	$2,655.13
D	10000300	-3	~PRECONSTRUCTION CONFERENCE - PER PERSON, PER TRIP	IATS	1,250.00	-$3,750.00	-$3,750.00
A	10000310	6	~INSPECTION TRIPS - PER PERSON, PER TRIP	IATS	1,250.00	$7,500.00	$7,500.00
D	45010001	-1	FRONT TOW EYES, BELOW BUMPER	STD	0.00	$0.00	$0.00
A	45010003	1	FRONT TOW EYES, TOP OF BUMPER	IPOS	849.96	$849.96	$722.47
D	23014220	-1	ENGINE, CUMMINS X 12 455HP DOC-DPF-DEF-SCR OBD	IPOS	26,875.99	-$26,875.99	-$22,844.59
A	23014230	1	ENGINE, CUMMINS X 12 500HP DOC-DPF-DEF-SCR OBD	IPOS	27,783.13	$27,783.13	$23,615.66
D	23029200	-1	ENGINE WARRANTY, 5 YEAR, 100,000 MILES FOR CUMMINS X12 / X15	STD	0.00	$0.00	$0.00
A	23029220	1	ENGINE WARRANTY, 10 YEAR, 200,000 MILES FOR CUMMINS X12 / X15 MAJOR COMPONENTS COVERAGE (FCM)	IPOS	2,210.85	$2,210.85	$1,879.22
A	23031180	1	12VDC HEATER FOR FLEETGUARD FUEL/WATER SEPARATOR	IATS	497.46	$497.46	$422.84
D	47012440	-1	TRANSMISSION, ALLISON GEN 5, EVS4000	IPOS	12,178.74	-$12,178.74	-$10,351.93
A	47012445	1	TRANSMISSION, ALLISON GEN 5, EVS4000R W/RETARDER	IPOS	20,230.06	$20,230.06	$17,195.55
D	23110000	-1	JACOBS ENGINE BRAKE	STD	0.00	$0.00	$0.00
A	23110100	1	DELETE JACOBS ENGINE BRAKE	IPOS	-1,481.05	-$1,481.05	-$1,258.89
D	26030000	-1	FUEL FILL	STD	0.00	$0.00	$0.00
A	26030055	1	DUAL FUEL FILL (FUEL BEAM)	IPOS	370.26	$370.26	$314.72
D	13010050	-1	ALTERNATOR, LEECE NEVILLE 270 AMP 4916PA	STD	0.00	$0.00	$0.00
A	13010205	1	ALTERNATOR, LEECE NEVILLE 320 AMP 4962PA	IPOS	468.06	$468.06	$397.85
D	15010500	-1	BATTERIES, INTERSTATE TYPE 31 MHD (4)	STD	0.00	$0.00	$0.00
A	15030215	1	MASTER BATTERY DISCONNECT SWITCH	IATS	353.64	$353.64	$300.59
A	15040100	3	120V OUTLET WIRED TO SHORELINE INLET - EA	IATS	341.04	$1,023.12	$869.65
A	15031560	1	BATTERY CHARGER, KUSSMAUL LPC 40 W/REMOTE BAR GRAPH DISPLAY	IPOS	1,366.99	$1,366.99	$1,161.94
D	15031577	-1	BATTERY CHARGER, IOTA DLS-45	STD	454.73	-$454.73	-$386.52
D	14530150	-1	TOP SPEED, 60 MPH	STD	0.00	$0.00	$0.00
A	14530200	1	TOP SPEED, OTHER	STD	0.00	$0.00	$0.00
D	42920200	-1	TIRE PRESSURE MONITOR, REAL WHEELS, LED	STD	273.58	-$273.58	-$232.54
A	42920300	1	TIRE PRESSURE MONITOR, QUICK PRESSURE	IPOS	306.56	$306.56	$260.58
D	44220100	-1	WHEELS, ALUM, ACCURIDE (max 58K rear)	STD	2,403.34	-$2,403.34	-$2,042.84
A	44220210	1	WHEELS, ALUM, ALCOA, DURABRITE (max 58K rear)	IPOS	4,104.88	$4,104.88	$3,489.15
A	44230120	1	INNER WHEELS COATED, TANDEM AXLE	IATS	812.81	$812.81	$690.89
A	44042005	1	SPARE TIRE GOODYEAR 12R22.5	IATS	617.83	$617.83	$525.16
A	44042015	1	SPARE TIRE GOODYEAR 425/65R22.5	IATS	700.20	$700.20	$595.17
A	44041015	1	SPARE WHEEL, ALUM 22.5 X 8.25	IATS	411.88	$411.88	$350.10
A	44041025	1	SPARE WHEEL, ALUM 22.5 X 12.25	IATS	494.26	$494.26	$420.12
A	44042100	2	MOUNT SPARE TIRE TO SPARE WHEEL	IATS	164.73	$329.46	$280.04
D	16010009	-1	BRAKES MERITOR SCAM 6" FRONT, SCAM 7" REAR	STD	0.00	$0.00	$0.00
A	16010275	1	BRAKES STEERTEK DISC PLUS EX225 FRONT, MERITOR DISC PLUS EX225 REAR (TANDEM AXLE)	IPOS	6,354.38	$6,354.38	$5,401.22
A	18030000	1	GUARD OVER PARKING BRAKE KNOB	IATS	70.73	$70.73	$60.12
A	18030400	1	FRONT WHEEL BRAKE ASSIST FOR FOUR WHEEL BRAKE SERVICE	IATS	852.58	$852.58	$724.69
A	18020000	1	CENTRAL LOCATION FOR AIR TANK DRAINS	IATS	463.98	$463.98	$394.38
A	18030110	1	AIR OUTLET CONNECTION	IATS	341.04	$341.04	$289.88
D	18110100	-1	WABCO 6 CHANNEL ANTI-LOCK BRAKES TANDEM	IPOS	682.06	-$682.06	-$579.75
A	18110150	1	WABCO 6 CHANNEL ANTI-LOCK BRAKES W/ASR TANDEM	IPOS	1,534.65	$1,534.65	$1,304.45
A	14530501	1	TIRE CHAINS, ON-SPOT, 6 STRANDS, (1) SET	IATS	2,588.40	$2,588.40	$2,200.14
A	11024250	1	CAB TSAL4SE 73" 10" RR 1/2	IPOS	3,572.71	$3,572.71	$3,036.80
D	11024291	-1	CAB TSAL4SJ 62" FLAT	IPOS	2,583.10	-$2,583.10	-$2,195.64
D	11031350	-1	CAB DOORS, FULL LENGTH	STD	0.00	$0.00	$0.00
A	11031355	1	CAB DOORS, BARRIER STYLE	IPOS	1,213.58	$1,213.58	$1,031.54
A	11031365	1	LOWER CAB STEP WELLS, RAPTOR (BLACK) & TREADPLATE BACK & SIDE WALLS	IPOS	1,059.91	$1,059.91	$900.92
A	11031390	1	AUXILIARY CAB STEPS, ALUM, GRIP STRUT (SET OF 4)	IATS	2,845.76	$2,845.76	$2,418.90
D	11031395	-1	CAB STEP LIGHTING, TECNIQ E41 LED STRIP LIGHTS	STD	0.00	$0.00	$0.00
D	11031419	-1	CAB DOOR WINDOWS, MANUAL	STD	0.00	$0.00	$0.00
A	11031421	1	CAB DOOR WINDOWS, POWER	IPOS	742.51	$742.51	$631.13
D	11031401	-1	CAB SIDE WINDOWS, FIXED, BOTH SIDES	IPOS	364.99	-$364.99	-$310.24
A	11031406	1	CAB SIDE WINDOWS, FIXED, OFFICER'S SIDE ONLY	IPOS	182.50	$182.50	$155.13
D	11031440	-1	TWO SLIDING WINDOWS IN BACK WALL OF CAB APPROX 16.25" X 14.25"	IPOS	700.53	-$700.53	-$595.45

A	11031460	1	NO WINDOWS, BACK WALL OF CAB	STD	0.00	$0.00	$0.00
A	11031465	3	WINDOW TINTING (LIMO TINT 8%)	IATS	66.00	$198.00	$168.30
D	38010015	-1	MIRRORS LANG MEKRA 300 SERIES REMOTE	STD	0.00	$0.00	$0.00
A	38030205	1	BLIND SPOT MIRROR, VELVAC, ON CAB ROOF	IATS	287.88	$287.88	$244.70
D	20010080	-1	BUMPER, 18" POLISHED STAINLESS STEEL	IPOS	170.33	-$170.33	-$144.78
A	20012200	1	BUMPER, 12" FORMED STEEL CHANNEL, PAINTED	IPOS	1,107.06	$1,107.06	$941.00
D	20029800	-1	BUMPER SIDES, DIAMONDPLATE	STD	0.00	$0.00	$0.00
A	20029830	1	BUMPER SIDES, PAINTED STEEL, W/POCKET (12-24" EXTENSION)	IPOS	812.81	$812.81	$690.89
A	20050300	1	WINCH RECEIVER, FRONT	IATS	737.81	$737.81	$627.14
A	20050395	1	WIRING FOR WINCH RECEIVER	IATS	861.46	$861.46	$732.24
D	12010500	-1	AIR HORNS, DUAL, GROVER #2040 RECTANGULAR	STD	0.00	$0.00	$0.00
A	12010510	1	AIR HORNS, DUAL, GROVER #1510 ROUND, 24"	IPOS	0.00	$0.00	$0.00
D	12030015	-1	AIR HORNS CUTOUTS IN BUMPER, BEHIND PERFORATIONS (X12/X15 STYLE)	IPOS	0.00	$0.00	$0.00
A	12030025	1	AIR HORNS CUTOUTS THRU BUMPER, ROUND, NO PERFORATIONS	IPOS	0.00	$0.00	$0.00
A	12030205	1	AIR HORNS WIRED TO STEERING WHEEL BUTTON	IATS	93.41	$93.41	$79.40
A	12510109	1	ELEC SIREN, WHELEN 295HFSA7, REMOTE FLUSH MOUNT WITH REMOVABLE	IPOS	755.66	$755.66	$642.31
D	12510110	-1	ELEC SIREN, WHELEN 295HFS2, REMOTE FLUSH MOUNT	STD	734.63	-$734.63	-$624.44
D	12620100	-1	SIREN SPEAKER, 100W, CAST PRODUCTS, SA4201-6B-A	STD	525.09	-$525.09	-$446.33
A	12620202	1	SIREN SPEAKER, 100W, WHELEN, SA314B, BLACK FINISH (PAIR)	IPOS	1,532.88	$1,532.88	$1,302.95
A	12710100	1	SIREN, FEDERAL Q2B, GRILLE MOUNT	IATS	2,814.21	$2,814.21	$2,392.08
A	12730305	1	FOOT SWITCH, DRIVER'S SIDE, FOR MECH SIREN	IATS	93.41	$93.41	$79.40
A	12730310	1	FOOT SWITCH, OFFICER'S SIDE, FOR MECH SIREN	IATS	93.41	$93.41	$79.40
A	32520520	1	HEADLIGHTS, LED, FIRETECH FT-4X6, DUAL STS HOUSINGS	IPOS	4,180.16	$4,180.16	$3,553.14
D	32520670	-1	HEADLIGHTS, LED, FIRETECH FT-4X6, SINGLE STS HOUSINGS	STD	2,516.00	-$2,516.00	-$2,138.60
A	32530500	1	ALTERNATING FLASHER FOR HEADLIGHT	IATS	255.78	$255.78	$217.41
A	48010300	1	FRONT TURN SIGNALS, WHELEN 400 SERIES LED (4)	IPOS	462.56	$462.56	$393.18
D	48090001	-1	FRONT TURN SIGNALS, WHELEN 400 SERIES LED (2)	IPOS	208.41	-$208.41	-$177.15
A	32530630	1	CORNERING LIGHTS, WHELEN M6 LED	IATS	1,213.98	$1,213.98	$1,031.88
D	27022120	-1	HANDRAILS, CAB EXTERIOR, KNURLED STAINLESS STEEL (4) SIDE	IPOS	0.00	$0.00	$0.00
A	27022130	1	HANDRAILS, CAB EXTERIOR, KNURLED STAINLESS STEEL (2) SIDE	IPOS	-223.13	-$223.13	-$189.66
A	27030605	1	COAT HOOKS FOR GRAB HANDRAILS (2)	IATS	64.61	$64.61	$54.92
A	27030710	1	HANDRAILS, FRONT OF CAB, KNURLED STAINLESS STEEL (PAIR)	IATS	559.70	$559.70	$475.75
A	27025500	1	HANDRAILS, CAB INTERIOR, BLACK RUBBER COATED (2) REAR ENTRY	IATS	223.13	$223.13	$189.66
D	27030100	-1	HANDRAILS, REAR CAB INTERIOR DOOR, BLACK RUBBERIZED (2) ONLY	STD	0.00	$0.00	$0.00
A	27030120	1	HANDRAILS, REAR CAB INTERIOR DOOR, BLACK RUBBERIZED (2) AND KNURLED	IPOS	389.18	$389.18	$330.80
A	11032020	1	EXTERIOR COMPT, SIDE OF EXT CAB, 60" H, DS	IPOS	3,626.76	$3,626.76	$3,082.75
A	11032200	2	INTERIOR ACCESS, NOT PROVIDED	STD	0.00	$0.00	$0.00
A	11032450	2	COMPT DOOR LOCK - NOT PROVIDED	IATS	0.00	$0.00	$0.00
A	11032100	2	NO OPENING TO CREW SEAT COMPT	STD	0.00	$0.00	$0.00
A	11032070	1	EXTERIOR COMPT, SIDE OF EXT CAB, 60" H, OS	IPOS	3,626.76	$3,626.76	$3,082.75
D	11035420	-1	DIAMONDPLATE CAB ROOF 30" x FULL WIDTH	STD	0.00	$0.00	$0.00
A	11035422	1	DIAMONDPLATE CAB ROOF 56" x FULL WIDTH	IPOS	348.99	$348.99	$296.64
A	11033202	1	3/16" SMOOTH ALUM BACK WALL & SIDE WALLS, INSIDE CAB	IATS	835.36	$835.36	$710.06
A	31010250	1	INTERIOR, MULTISPEC BLACK SPECKLE PAINT W/BLACK EMBOSSED FRP BOARD	IPOS	0.00	$0.00	$0.00
D	31010287	-1	INTERIOR, MULTISPEC GRAY SPECKLE PAINT W/GRAY-BLACK DURAWEAR	IPOS	0.00	$0.00	$0.00
D	31010290	-1	CAB INTERIOR FLOOR COVERING, GRAY RUBBERIZED	STD	0.00	$0.00	$0.00
A	31010291	1	CAB INTERIOR FLOOR COVERING, BLACK RUBBERIZED	IPOS	0.00	$0.00	$0.00
A	11035375	1	DIAMONDPLATE CAB FLOOR	IATS	2,406.98	$2,406.98	$2,045.93
D	11031670	-1	NO STORAGE ON ENGINE ENCLOSURE	STD	0.00	$0.00	$0.00
A	11031680	1	CENTER CONSOLE W/MAP BOOK STORAGE, TOP OF ENGINE ENCLOSURE	IPOS	566.39	$566.39	$481.43
D	11031510	-1	FLAT WORK SURFACE IN LIEU OF GLOVE BOX	STD	0.00	$0.00	$0.00
A	11031512	1	COMPUTER TRAY IN LIEU OF GLOVE BOX	IPOS	151.23	$151.23	$128.55
A	11031701	1	GLOVE BOX HOLDERS IN UPPER CREW DOORS (SLANT BACK, RR)	IATS	564.26	$564.26	$479.62
D	29810100	-1	CHASSIS ELECTRICAL DESCRIPTION	STD	0.00	$0.00	$0.00
A	29810220	1	CHASSIS ELECTRICAL SYSTEM, MULTIPLEX, WELDON, VMUX, 1 VISTA SCREEN (AERIAL)	IPOS	7,892.90	$7,892.90	$6,708.97
D	30010135	-1	INSTRUMENTATION, AMETEK W/ CENTER & OVERHEAD CONSOLES (AERIALS)	STD	807.61	-$807.61	-$686.47
A	30010235	1	INSTRUMENTATION, AMETEK GAUGES, FOR MULTIPLEX W/CENTER &	IPOS	807.61	$807.61	$686.47
D	30010610	-1	CAB PUMP SHIFT, ELECTRIC W/YELLOW KNOB	STD	0.00	$0.00	$0.00
A	30010700	1	CAB PUMP SHIFT, AIR	IPOS	270.94	$270.94	$230.30
A	30031655	1	DOOR AJAR ALARM WITH SILENCE BUTTON	IATS	478.13	$478.13	$406.41
D	29930200	-1	MAPBOOK SLOT ON BREAKER PANEL	STD	0.00	$0.00	$0.00
A	29930210	1	DELETE MAPBOOK SLOT ON FRONT BREAKER PANEL	IPOS	-46.54	-$46.54	-$39.56
D	29910100	-1	PROGRAMMABLE LOAD MANAGER, CLASS-1 SUPERNODE II	STD	0.00	$0.00	$0.00
A	30031775	1	12V POWER POINTS, (2)	IATS	170.55	$170.55	$144.97
A	30031802	1	12V DUAL PORT USB POWER POINTS, (2)	IATS	170.55	$170.55	$144.97

A	84541545	1	POWER & GROUND STUDS, LOWER COMMAND CONSOLE	IATS	308.84	$308.84	$262.51
A	84541550	1	POWER & GROUND STUDS, UNDER OFFICER'S SEAT	IATS	840.63	$840.63	$714.54
A	33530654	1	INTERIOR CAB DOOR WARNING LIGHTS, WHELEN ION T-SERIES LED, TLI* (QTY 4)	IATS	1,085.91	$1,085.91	$923.02
D	28010740	-1	DEFROSTER, HEATER & A/C (TM-21)	IPOS	6,600.06	-$6,600.06	-$5,610.05
A	28010750	1	DEFROSTER, HEATER & A/C, SEVERE CLIMATE (TM-31)	IPOS	7,823.54	$7,823.54	$6,650.01
A	28090003	1	HEAT TO FEET	IATS	543.64	$543.64	$462.09
A	11031692	1	REAR HEAT/AC STORAGE, 3 EMS GLOVE HOLDERS, HORIZONTAL	IATS	478.13	$478.13	$406.41
A	28031001	1	FAN, 12 VOLT, DRIVER'S SIDE, MOUNTED OUTBOARD OF WINDSHIELD	IATS	233.14	$233.14	$198.17
A	28031101	1	FAN, 12 VOLT, OFFICER'S SIDE, MOUNTED OUTBOARD OF WINDSHIELD	IATS	233.14	$233.14	$198.17
D	38510105	-1	DRIVER'S SEAT, BOSTROM SIERRA HIGH BACK ABTS AIR RIDE (DURAWEAR)	STD	1,414.53	-$1,414.53	-$1,202.35
A	38510204	1	DRIVER'S SEAT, BOSTROM SIERRA ELECTRIC ABTS (DURAWEAR PLUS, LOW SEAM)	IPOS	1,859.68	$1,859.68	$1,580.73
A	39010151	1	OFFICER'S SEAT, BOSTROM SIERRA, ELECTRIC ABTS (DURAWEAR PLUS, LOW SEAM)	IPOS	1,859.68	$1,859.68	$1,580.73
D	39090000	-1	OFFICER'S SEAT, BOSTROM TANKER 350, ABTS SCBA (DURAWEAR)	IPOS	823.76	-$823.76	-$700.20
D	39521105	-1	CREW SEAT 1, BOSTROM TANKER 350, ABTS SCBA (DURAWEAR)	STD	823.76	-$823.76	-$700.20
A	11032311	1	ADJUSTABLE SHELF, EMS COMPT (1)	IATS	233.50	$233.50	$198.48
D	39521106	-1	CREW SEAT 2, BOSTROM TANKER 350, ABTS SCBA (DURAWEAR)	STD	823.76	-$823.76	-$700.20
A	39521210	1	CREW SEAT 2, BOSTROM SIERRA, ABTS HIGH BACK (DURAWEAR PLUS, LOW SEAM)	IPOS	1,002.64	$1,002.64	$852.24
A	39521510	1	CREW SEAT 3, BOSTROM SIERRA, ABTS HIGH BACK FLIP UP (DURAWEAR PLUS, LOW SEAM)	IPOS	1,002.64	$1,002.64	$852.24
A	39521511	1	CREW SEAT 4, BOSTROM SIERRA, ABTS HIGH BACK FLIP UP (DURAWEAR PLUS, LOW SEAM)	IPOS	1,002.64	$1,002.64	$852.24
A	38320000	1	HELMET STORED IN COMPARTMENT	STD	0.00	$0.00	$0.00
D	39550100	-1	SEAT COLOR, GRAY	STD	0.00	$0.00	$0.00
A	39550200	1	SEAT COLOR, BLACK	IPOS	0.00	$0.00	$0.00
D	39610105	-3	SCBA BRACKETS, ZIAMATIC, LOAD & LOCK	STD	0.00	$0.00	$0.00
D	39710005	-1	DOUBLE CREW SEAT COMPT, OPEN SIDES	STD	0.00	$0.00	$0.00
A	39710015	1	CREW SEAT COMPT, FRONT DROP-DOWN DOORS (73" CAB)	IPOS	785.54	$785.54	$667.71
A	84541601	1	MOUNTING OF CUSTOMERS RADIO-DUAL HEAD	IATS	1,790.21	$1,790.21	$1,521.68
A	84541700	2	INSTALLATION OF CUSTOMERS 2-WAY RADIO ANTENNA	IATS	335.26	$670.52	$569.94
A	84541500	1	WIRING OF CAB FOR FUTURE INSTALLATION OF HANDLIGHT CHARGERS OR RADIO CHARGERS	IATS	852.58	$852.58	$724.69
A	30030100	1	OFFICER'S SIDE SPEEDOMETER	IATS	426.30	$426.30	$362.36
D	60026000	-1	PUMP PACKING, HALE	STD	0.00	$0.00	$0.00
A	60026020	1	MECHANICAL PUMP SEAL, HALE	IPOS	811.48	$811.48	$689.76
A	60031005	1	ALLOY ANODES, HALE	IATS	224.19	$224.19	$190.56
D	66020100	-1	3" TANK TO PUMP W/CHECK VALVE	STD	0.00	$0.00	$0.00
D	73010100	-1	TANK FILL 1.5"	STD	0.00	$0.00	$0.00
D	61010405	-1	PRESSURE GOVERNOR, CLASS 1 TPGJ1939	STD	0.00	$0.00	$0.00
A	61031000	1	ENGINE STATUS CENTER, CLASS 1 ENFO IV	IATS	799.05	$799.05	$679.19
A	64030000	1	2.5" RIGHT SIDE INLET	STD	1,278.83	$1,278.83	$1,087.01
D	70525125	-2	2.5" DISCHARGE, LEFT	STD	1,364.13	-$2,728.26	-$2,319.02
D	71025125	-2	2.5" DISCHARGE, RIGHT	STD	1,364.13	-$2,728.26	-$2,319.02
A	71025140	1	4" DISCHARGE, RIGHT	IATS	2,520.68	$2,520.68	$2,142.58
A	72810150	1	DELETE STD CROSSLAYS (SPH)	IPOS	-2,636.65	-$2,636.65	-$2,241.15
D	72811000	-1	ONE 2.5" CROSSLAY, 2.5" SWVL & TWO 2" CROSSLAYS W/1.5" SWIVEL (SPH)	STD	0.00	$0.00	$0.00
D	72910520	-1	COVER, VINYL FOR CROSSLAYS (SPH)	STD	628.93	-$628.93	-$534.59
D	61730005	-5	DRAIN VALVES, INNOVATIVE CONTROLS, LIFT-UP	STD	0.00	$0.00	$0.00
A	63030400	2	HALE MASTER INTAKE VALVE, ELEC	IATS	4,734.54	$9,469.08	$8,048.72
A	63034650	2	ADAPTER, 6" NST FE X 5" STORZ, 30 DEGREE W/CAP & CHAIN, TFT	IATS	310.58	$621.16	$527.99
D	61720100	-7	VALVE, AKRON HEAVY DUTY	STD	0.00	$0.00	$0.00
D	61770100	-3	ACTUATOR, VALVE, SWING HANDLE	STD	0.00	$0.00	$0.00
D	61770120	-2	ACTUATOR, VALVE, PUSH/PULL HANDLE, INNOVATIVE CONTROLS	IPOS	0.00	$0.00	$0.00
A	61770200	1	ACTUATOR, VALVE, AKRON HANDWHEEL	IPOS	584.05	$584.05	$496.44
D	61770425	-3	ACTUATOR, VALVE, ELECTRIC, AKRON 9333	IPOS	1,768.04	-$5,304.12	-$4,508.50
D	77021010	-6	GAUGE, DISCH, INNOVATIVE CONTROLS 2.5"	STD	0.00	$0.00	$0.00
D	61810150	-3	DISCHARGE TERMINATION, 30 DEGREE ELBOW	STD	0.00	$0.00	$0.00
D	60036010	-5	THREADS, NST	STD	0.00	$0.00	$0.00
D	78521445	-1	WATERWAY CONTROL, 4” VALVE, AKRON 9335 ELECTRIC ACTUATOR	STD	0.00	$0.00	$0.00
D	74931300	-1	PUMP FINISH, PAINTED BY SUTPHEN	STD	0.00	$0.00	$0.00
A	74931310	1	PUMP FINISH, PAINTED BY PUMP MFG	IPOS	0.00	$0.00	$0.00
D	74931500	-1	PLUMBING FINISH, PAINTED	STD	0.00	$0.00	$0.00
A	74931510	1	PLUMBING FINISH, NON-PAINTED	IPOS	0.00	$0.00	$0.00
A	76010200	1	PUMP PANEL GAUGES & CONTROLS - NO TANK OPTION	IPOS	0.00	$0.00	$0.00
D	76010105	-1	PUMP PANEL GAUGES & CONTROLS	STD	0.00	$0.00	$0.00

A	76030805	1	HALE TRV-L THERMAL RELIEF VALVE WITH LIGHT AT PUMP PANEL	IATS	837.53	$837.53	$711.90
A	76031900	1	AIR HORN PUSH BUTTON SWITCH ON PUMP PANEL	IATS	170.50	$170.50	$144.93
D	76510060	-1	GAUGES, MASTER, INNOVATIVE CONTROLS, 4"	STD	0.00	$0.00	$0.00
D	77510050	-1	GAUGE, WATER LEVEL, INNOVATIVE CONTROLS SL-14	STD	0.00	$0.00	$0.00
D	83525200	-1	WATER TANK BRAND, UPF	IPOS	0.00	$0.00	$0.00
D	83520205	-1	WATER TANK, 300 GAL, POLY (AERIALS)	STD	0.00	$0.00	$0.00
A	83520300	1	DELETE WATER TANK	IPOS	-4,379.00	-$4,379.00	-$3,722.15
D	80117010	-1	BODY SPH-1, LEFT 48"H / RIGHT 48"H	STD	0.00	$0.00	$0.00
A	80117030	1	BODY SPH-3, LEFT 56" H / RIGHT 56"H	IPOS	7,143.75	$7,143.75	$6,072.19
D	80220200	-1	COMPT DOORS, ROM ROLL-UP, PAINTED	STD	0.00	$0.00	$0.00
A	80220240	1	COMPT DOORS, AMDOR ROLL-UP, PAINTED	IPOS	0.00	$0.00	$0.00
D	81410000	-1	COVER, VINYL, MAIN HOSE BED	STD	1,023.11	-$1,023.11	-$869.64
A	81431200	1	REAR HOSEBED COVER, VINYL	STD	0.00	$0.00	$0.00
D	81440201	-1	COVER FASTENERS, BUNGIE CORDS WITH RED TAB	STD	0.00	$0.00	$0.00
D	81330300	-1	HOSE BED DIVIDER, ADJ (1)	IATS	682.06	-$682.06	-$579.75
A	82072800	5	CHROME GRAB HANDLE	IATS	51.14	$255.70	$217.35
D	89020230	-1	LADDERS, ALCO-LITE (SPH) 115' 14', 16', 16', 24'-2sec, 35'-2sec & 10'F	STD	0.00	$0.00	$0.00
A	89030605	1	LITTLE GIANT 17' LADDER	IATS	713.53	$713.53	$606.50
A	89530900	1	MOUNTING OF EXTRA LADDER (EACH)	IATS	1,705.15	$1,705.15	$1,449.38
A	89530910	2	MOUNTING OF ROOF LADDER ON BASE SECTION OF AERIAL	IATS	1,202.54	$2,405.08	$2,044.32
A	80232110	1	2" RECEIVER, REAR	IATS	450.90	$450.90	$383.27
A	80232175	1	WIRING FOR WINCH RECEIVER	IATS	861.46	$861.46	$732.24
D	84511100	-1	BODY ELECTRICAL DESCRIPTION	STD	0.00	$0.00	$0.00
A	84511220	1	BODY ELECTRICAL SYSTEM, MULTIPLEX, WELDON, VMUX (AERIAL)	IPOS	4,113.23	$4,113.23	$3,496.25
D	85010300	-1	TAILLIGHTS, WHELEN 600 SERIES, LED STOP/TAIL/TURN, HALOGEN REVERSE, QUAD HOUSING (PAIR)	IPOS	1,399.64	-$1,399.64	-$1,189.69
A	85010420	1	TAILLIGHTS, WHELEN M6 SERIES, LED STOP/TAIL/TURN/REVERSE, QUAD HOUSING (PAIR)	IPOS	2,207.58	$2,207.58	$1,876.44
A	85130100	1	MARKER LIGHTS, BRITAX, FLEXIBLE, LED (PAIR)	IATS	239.66	$239.66	$203.71
D	86510000	-1	REAR WORK LIGHTS, (2) UNITY AG FLOOD, HALOGEN	STD	0.00	$0.00	$0.00
D	86610010	-1	UPPER WARNING LIGHTS, ZONE A (FRONT), WHELEN JUSTICE 62" LED LIGHT BAR, JE0NFPA, 10 MODULES	STD	1,828.24	-$1,828.24	-$1,554.00
D	86710100	-1	UPPER WARNING LIGHTS, ZONE C (REAR), WHELEN HALOGEN BEACONS, RB6T*P (PAIR)	STD	832.98	-$832.98	-$708.03
A	86710120	1	UPPER WARNING LIGHTS, ZONE C (REAR), WHELEN LED BEACONS, MCFLED2* (PAIR)	IPOS	1,732.64	$1,732.64	$1,472.74
D	86810100	-1	UPPER WARNING LIGHTS, ZONE C (REAR PLATFORM), WHELEN 600 SUPER LED, 60*02F*R (QTY 1)	STD	327.21	-$327.21	-$278.13
A	86810200	1	UPPER WARNING LIGHTS, ZONE C (REAR PLATFORM), WHELEN M6 LED, M6* (QTY 1)	IPOS	407.44	$407.44	$346.32
D	87110100	-1	LOWER WARNING LIGHTS, ZONE A (FRONT), WHELEN 600 SUPER LED, 60*02F*R	STD	654.45	-$654.45	-$556.28
A	87110210	1	LOWER WARNING LIGHTS, ZONE A (FRONT), WHELEN M6 LED, M6* (QTY 4)	IPOS	1,629.71	$1,629.71	$1,385.25
D	87811110	-1	LOWER, ZONE A - MOUNTING LOCATION (SINGLE HOUSINGS)	STD	0.00	$0.00	$0.00
A	87811130	1	LOWER, ZONE A - MOUNTING LOCATION (DUAL HOUSINGS)	IPOS	0.00	$0.00	$0.00
D	87210120	-1	LOWER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), WHELEN 600 SUPER LED, 60*02F*R (QTY 4)	IPOS	1,308.89	-$1,308.89	-$1,112.56
A	87210220	1	LOWER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), WHELEN M6 LED, M6* (QTY 4)	IPOS	1,629.71	$1,629.71	$1,385.25
D	87310100	-1	LOWER WARNING LIGHTS, ZONE C (REAR), WHELEN 600 SUPER LED, 60*02F*R (QTY 2)	STD	654.45	-$654.45	-$556.28
A	87310200	1	LOWER WARNING LIGHTS, ZONE C (REAR), WHELEN M6 LED, M6* (QTY 2)	IPOS	814.86	$814.86	$692.63
D	87410120	-1	LOWER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), WHELEN 600 SUPER LED, 60*02F*R (QTY 4)	IPOS	1,308.89	-$1,308.89	-$1,112.56
A	87410220	1	LOWER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), WHELEN M6 LED, M6* (QTY 4)	IPOS	1,629.71	$1,629.71	$1,385.25
A	87537734	2	ADDITIONAL WARNING LIGHTS, WHELEN M6 LED, M6* (PAIR)	IATS	814.86	$1,629.72	$1,385.26
A	88391200	1	SCENE LIGHT, WHELEN PIONEER PFH2, 12V LED, BROW	IATS	1,871.18	$1,871.18	$1,590.50
A	88391300	2	SCENE LIGHT, WHELEN PIONEER PCPSM1*, LED, SURFACE MOUNT, 12V	IATS	1,131.13	$2,262.26	$1,922.92
A	88230611	1	GENERATOR, HARRISON, 10KW HYD AERIALS	IATS	14,775.85	$14,775.85	$12,559.47
A	88250405	1	CIRCUIT BREAKER PANEL WITH 8 SPACES FOR BREAKERS	IATS	497.80	$497.80	$423.13
A	88251200	1	BREAKER PANEL, SPECIAL LOCATION	IPOS	1,380.48	$1,380.48	$1,173.41
A	88390661	1	SCENE LIGHT, WHELEN PIONEER PCPSM1A*, LED, SURFACE MOUNT, 120V, FACE OF PLATFORM	IATS	1,357.40	$1,357.40	$1,153.79
A	88390664	1	SCENE LIGHT, WHELEN PIONEER PCPSM2A*, LED, SURFACE MOUNT, 120V, UNDER PLATFORM	IATS	2,152.33	$2,152.33	$1,829.48
A	94020320	1	FIXED STEP UNDER TURNTABLE ACCESS STEP	IATS	191.25	$191.25	$162.56

D	94020325	-1	FOLDING STEP UNDER TURNTABLE ACCESS STEP	IATS	191.25	-$191.25	-$162.56
A	94020340	1	TURNTABLE ACCESS, UPPER LEFT, LADDER	STD	0.00	$0.00	$0.00
D	94020345	-1	TURNTABLE ACCESS, UPPER LEFT, FOLDING STEPS	IPOS	-474.89	$474.89	$403.66
D	94020400	-1	AERIAL SPOT LIGHTS - (2) UNITY AG SPOT, HALOGEN (SP95,100,110,SPH)	STD	0.00	$0.00	$0.00
A	94020490	1	LADDER LIGHTING SYSTEM, FIRETECH FT-WL-2000-S-B, LED	IATS	2,929.75	$2,929.75	$2,490.29
D	94021025	-1	OUTRIGGER GROUND JACKS, ELECTRONIC CONTROL, SPH100	STD	0.00	$0.00	$0.00
A	94021027	1	OUTRIGGER GROUND JACKS, MANUAL CONTROL, SPH100	IPOS	0.00	$0.00	$0.00
D	94021100	-1	OUTRIGGER DISPLAY PANEL COVER, STAINLESS STEEL	STD	0.00	$0.00	$0.00
A	94021110	1	OUTRIGGER DISPLAY PANEL COVER, CLEAR PLEXIGLASS	IPOS	0.00	$0.00	$0.00
D	94021150	-1	OFFICER'S SIDE AREA, REAR OF OUTRIGGER, NO COMPATMENT, FLAT PANEL	STD	0.00	$0.00	$0.00
A	94021155	1	OFFICER'S SIDE AREA, REAR OF OUTRIGGER, COMPARTMENT W/HINGED DOOR	IPOS	2,015.84	$2,015.84	$1,713.46
D	94210200	-1	PLATFORM SPOT LIGHT - (1) UNITY AG SPOT, HALOGEN (SP95, 100, 110, SPH)	STD	0.00	$0.00	$0.00
A	94210220	1	PLATFORM SPOT LIGHT - (1) UNITY P46FLC SPOT, LED (SP95, 100, 110, SPH)	IPOS	239.75	$239.75	$203.79
A	94210295	1	MARKER LIGHTS, BRITAX FLEXIBLE, LED, PAIR, ON SIDES OF YOKE	IATS	247.13	$247.13	$210.06
A	94210510	1	MONITOR, DS, AKRON 3483 STREAM MASTER2 , MANUAL 1250 GPM	IPOS	1,373.31	$1,373.31	$1,167.31
D	94210515	-1	MONITOR, DS, AKRON 3473, GEMINI MANUAL 1000 GPM	STD	0.00	$0.00	$0.00
A	94210511	1	MONITOR, OS, AKRON 3483 STREAM MASTER2 , MANUAL 1250 GPM	IPOS	1,373.31	$1,373.31	$1,167.31
D	94210516	-1	MONITOR, OS, AKRON 3473, GEMINI MANUAL 1000 GPM	STD	0.00	$0.00	$0.00
D	94210669	-1	NOZZLE, OS, AKRON 5160 AUTO	STD	0.00	$0.00	$0.00
A	94210675	1	NOZZLE, OS, AKRON 2499 & 3488 PIPE	IPOS	-322.69	-$322.69	-$274.29
D	94211100	-1	PLATFORM AIR SYSTEM W/ 4500 PSI DOT AIR TANK	STD	0.00	$0.00	$0.00
A	94211155	1	PLATFORM AIR SYSTEM W/ 7000 PSI ASME AIR TANK	IPOS	2,136.43	$2,136.43	$1,815.97
A	94210017	1	PARAPET LADDER, SPH100	IATS	3,024.21	$3,024.21	$2,570.58
A	94280150	1	STOKES ARMS, SPH100 PLATFORM	IATS	907.28	$907.28	$771.19
A	94280101	1	STOKES STORAGE BOX, PAINTED, MOUNTED ON BOOM	IATS	3,254.04	$3,254.04	$2,765.93
A	90030015	1	A/C CONDENSER PAINTED ROOF COLOR	IATS	364.14	$364.14	$309.52
D	90630405	-1	MITER EDGED "Z" STRIPE	IPOS	329.50	-$329.50	-$280.08
D	90681110	-1	CHEVRON STRIPING, REAR BODY OUTBOARD, SCOTCHLITE (Aerial Platforms)	STD	792.00	-$792.00	-$673.20
A	90681120	1	CHEVRON STRIPING, REAR BODY OUTBOARD, REFLEXITE (Aerial Platforms)	IPOS	660.00	$660.00	$561.00
D	90681410	-1	CHEVRON STRIPING, REAR PLATFORM OUTBOARD, SCOTCHLITE	STD	660.00	-$660.00	-$561.00
A	90681420	1	CHEVRON STRIPING, REAR PLATFORM OUTBOARD, REFLEXITE	IPOS	561.01	$561.01	$476.86
D	90710000	-1	BOOM SIGN, APPROX 78" X 12"	STD	0.00	$0.00	$0.00
A	90710075	1	BOOM SIGN, APPROX 88" X 26"	IPOS	329.50	$329.50	$280.08
A	91030620	1	~MOUNTING FOR EQUIPMENT PACKAGE	IATS	35,000.00	$35,000.00	$35,000.00
D	99030100	-1	ADDITIONAL MANUFACTURER'S MANUAL	IATS	260.03	-$260.03	-$221.03
D	99030250	-1	ADDITIONAL MANUALS FROM MAJOR VENDORS	IATS	260.03	-$260.03	-$221.03
A	99040200	1	~DEALER PREP/INSPECTION	IATS	2,550.00	$2,550.00	$2,550.00
D	99510310	-1	WARRANTY, ONE YEAR - AERIALS (DUBLIN)	STD	0.00	$0.00	$0.00
A	99510330	1	WARRANTY, 3 YR. OR 40,000 MILES - AERIALS (DUBLIN)	IPOS	12,049.84	$12,049.84	$10,242.36
				TOTAL PUBLISHED OPTIONS:		**$199,224.23**	**$175,535.60**

DeKalb County

NON-PUBLISHED OPTIONS

Add, Change, Delete	OPTION #	QTY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
A	10088888	1	MONARCH SEVERE DUTY CHASSIS 2020 UPGRADES	$7,000.00	$7,000.00
A	15028888	1	SPECIAL Batteries DEKALB STYLE BATTERIES	$1,200.00	$1,200.00
A	15088888	1	SPECIAL ITEM, ADDITIONAL BATTERY INDICATOR LOCATED EXTERIOR OF CAB, ABOVE SHORE LINE CONNECTION	$500.00	$500.00
A	44088888	1	SPECIAL ITEM, STS LUG NUT CAPS	$250.00	$250.00
A	44088888	1	SPECIAL ITEM, JAKE IN ADDITION TO TRANSMISSION RETARDER	$1,150.00	$1,150.00
A	44088888	1	SPECIAL ITEM, AUTOMATIC HEATED MOISTURE EJECTORS W/MANUAL PULL CABLE (TANDEM)	$448.00	$448.00
A	44088888	1	SPECIAL ITEM, SPARE TIRES & WHEELS - DROPPED SHIPPED OR ORDERED LOCALLY. CAN NOT BE SHIPPED LOOSE ON APPARATUS	$0.00	$0.00
A	54088888	1	SPECIAL ITEM, DUAL PROTECT-O-SEAL FUEL CAP	$325.00	$325.00
A	54088888	1	SPECIAL ITEM, UPGRADE TIRE CHAINS TO BE SEVERE DUTY	$150.00	$150.00
A	11031398	1	SPECIAL Cab Step Lights AMDOR LUMABAR H20	$500.00	$500.00
A	38028888	1	SPECIAL Mirror VELVAC, WEST COAST STYLE STAINLESS STEEL, HEATED & REMOTE	$650.00	$650.00
A	32588888	1	SPECIAL ITEM, SEVERE DUTY INSULATION PACKAGE (ALUMINUM PANELS W/ DTA)	$1,800.00	$1,800.00
A	32588888	1	SPECIAL ITEM, RELOCATED MANUAL CAB TILT SYSTEM TO THE R-1 COMPARTMENT	$250.00	$250.00
A	32588888	1	SPECIAL ITEM, BLIND SPOT MIRROR TO BE HEATED	$500.00	$500.00
A	32588888	1	SPECIAL ITEM, CAB CREW DOORS TO BE PUMPER STYLE NON-SLANTED DOORS	$0.00	$0.00
A	20088888	1	SPECIAL ITEM, FRONT BUMPER NOTCHED FOR FRONT RECEIVER SO ANGLE OF DEPARTURE IS NOT AFFECTED	$2,000.00	$2,000.00
A	12088888	1	SPECIAL ITEM, DEKALB STYLE LANYARD CONTROL	$225.00	$225.00
A	32588888	1	SPECIAL ITEM, DEKALB CORNERING LIGHT MOUNTING KIT	$500.00	$500.00
A	11032388	1	SPECIAL ITEM, EXTERIOR CAB COMPARTMENTS TO BE 66" TALL IN LIEU OF 60	$950.00	$950.00
A	11088888	1	SPECIAL ITEM, DIAMONDPLATE EXTERIOR WALL OF CAB, FULL HEIGHT/WRAP AROUND CAB EDGE	$850.00	$850.00
A	30031688	1	SPECIAL Door Ajar Light WHELEN M2WR	$400.00	$400.00
A	39528889	1	SPECIAL Crew Seat CUSTOM EMS COMPARTMENT, DEKALB STYLE	$2,800.00	$2,800.00
A	11032288	1	SPECIAL Interior Access EMS Cabinet 0	$0.00	$0.00
A	39588888	1	SPECIAL ITEM, ALL SEATS TO BE VINYL MATERIAL	$0.00	$0.00
A	39588888	1	SPECIAL ITEM, D-RING LATCHES ON CREW SEAT COMPARTMENT DOORS	$200.00	$200.00
A	60088888	1	SPECIAL ITEM, COMPRESSION FITTINGS ON AUXILLARY COOLER & LINES	$500.00	$500.00
A	61028888	1	SPECIAL Pressure Control PRESSURE CONTROL, HALE TOTAL PRESSURE MASTER (TPM)	$1,882.93	$1,882.93
A	61088888	1	SPECIAL ITEM, HAND THROTTLE ON PANEL, CLASS 1 TWISTER	$625.94	$625.94
A	75088888	1	SPECIAL ITEM, HANDWHEEL FOR MANUAL OVER-RIDE IN LIEU OF BLACK HANDLE	$225.00	$225.00
A	64088888	1	SPECIAL ITEM, HANDWHEEL ON MANUAL MIV MANUAL OVER-RIDE	$225.00	$225.00
A	78528888	1	SPECIAL Aerial Discharge Control & Flowmeter NOT REQUIRED	$0.00	$0.00
A	75088888	1	SPECIAL ITEM, BUSTIN GRATING ON PULL-OUT STEP UNDER PUMP MODULE	$500.00	$500.00
A	76528888	1	SPECIAL Master Gauges GAUGES, MASTER, INNOVATIVE CONTROLS, 6"	$232.00	$232.00
A	80288888	1	SPECIAL ITEM, SAW COMPARTMENT ACCESSBILE FROM THE TOP OF L4	$2,500.00	$2,500.00
A	81428888	1	SPECIAL Hosebed Cover HOSE BED CONVERTED TO LADDER CHUTE	$0.00	$0.00
A	81440288	1	SPECIAL Hosebed Cover Fastener HOSEBED AREA CONVERTED TO LADDER CHUTE	$0.00	$0.00
A	80231888	1	SPECIAL SCBA Compt 6 SCBA CYLINDER COMPTS (TANDEM)	$1,025.00	$1,025.00
A	89988888	1	SPECIAL ITEM, D-RING LATCHES ON SCBA DOORS IN FENDER	$575.00	$575.00
A	89988888	1	SPECIAL ITEM, RUB RAILS TO HAVE WHITE REFLECTIVE STRIP	$250.00	$250.00
A	89988888	1	SPECIAL ITEM, FOUR COMPARTMENTS BUILT IN PLATFORM ACCESS LADDER AREA	$1,500.00	$1,500.00
A	89988888	1	SPECIAL ITEM, L2/L3 & R2/R3 TO BE BARN DOORS	$1,500.00	$1,500.00
A	89988888	1	SPECIAL ITEM, DELETE L6 COMPARTMENT & COMBINE WITH L5	$0.00	$0.00
A	89028888	1	SPECIAL Ladder Package LADDERS, DUO-SAFETY (CUSTOM MEASUREMENTS) - 17' LITTLE GIANT (NFPA), 16' ROOF DOUBLE HOOK, 16' ROOF DOUBLE HOOK, 20' ROOF (DOUBLE HOOKED), (2) 28' 2-SECTION, (2) 35' 2-SECTION, 45' 3-SECTION, 10' FOLDING LADDER	$3,000.00	$3,000.00
A	89088888	1	SPECIAL ITEM, LADDER CHUTE DOOR STAY-OPEN MECHANISMS	$250.00	$250.00

A	89088888	1	SPECIAL ITEM, CUSTOM LADDER CHUTE TO HOLD FULL COMPLIMENT OF LADDERS	$4,800.00	$4,800.00
A	84588888	1	SPECIAL ITEM, GROUND LIGHT CIRCUIT SWITCH	$250.00	$250.00
A	84588888	1	SPECIAL ITEM, CLASS1 ESKEY IPO VMUX	$0.00	$0.00
A	86528888	1	SPECIAL Work Lights UNITY LED WORK LIGHTS, SPOT (PAIR)	$385.60	$385.60
A	85788888	1	SPECIAL ITEM, WHELEN CORE SYSTEM	$8,500.00	$8,500.00
A	86628888	1	SPECIAL WLUpperA DEKALB (3) LIGHT BAR PER PRINT	$7,000.00	$7,000.00
A	87588888	1	SPECIAL ITEM, MARS TB8-F "888" FLUSH MOUNT IN CAB	$750.27	$750.27
A	87040088	1	SPECIAL Traffic Advisor M2WA - 8	$2,000.00	$2,000.00
A	86588888	1	SPECIAL ITEM, DELETE SPECIAL ITEM	$0.00	$0.00
A	86588888	1	SPECIAL ITEM, WHELEN SCENE LIGHTS, PCH2 RECESSED MOUNTED	$4,851.24	$4,851.24
A	86588888	1	SPECIAL ITEM, WHELEN SCENE LIGHTS, SUMMIT LED LIGHTS, S44MRB (2)	$3,770.88	$3,770.88
A	86588888	1	SPECIAL ITEM, DELETED SPECIAL ITEM	$0.00	$0.00
A	86588888	1	SPECIAL ITEM, WHELEN PELCC LIGHTS, (4)	$1,500.00	$1,500.00
A	86588888	1	SPECIAL ITEM, WHELEN M2 AMBER, (3)	$750.00	$750.00
A	86588888	1	SPECIAL ITEM, WHELEN M2 GREEN, (3)	$750.00	$750.00
A	88388888	1	SPECIAL ITEM, HANNAY ECR CORD REEL 1616-14-16 150' OF 12/3 - MOUNTED TOP OF PUMP MODULE (1) EA SIDE	$6,562.82	$6,562.82
A	88388888	1	SPECIAL ITEM, AKRON FOUR-WAY RECEPTACLE BOX WITH PIG TAIL TO REEL CABLE (2)	$1,617.14	$1,617.14
A	88388888	1	SPECIAL ITEM, PCP2AFC TELE LIGHTS, BACK OF BUCKET, (1) EA SIDE	$4,993.50	$4,993.50
A	94020488	1	SPECIAL Boom Tracking Lights AERIAL SPOT LIGHTS, WHELEN MPPBCCS LED	$595.53	$595.53
A	94088888	1	SPECIAL ITEM, RIGHT SIDE OUTRIGGER CONTROLS, (COLUMBUS STYLE)	$1,200.00	$1,200.00
A	94088888	1	SPECIAL ITEM, ACCESS PANEL, OFFICER SIDE OUTRIGGER AREA TO HAVE D-HANDLE	$200.00	$200.00
A	90688888	1	SPECIAL ITEM, DEKALB GRAPHICS PACKAGE	$4,000.00	$4,000.00
A	90088888	1	2021 SPH100 UNIT	$8,500.00	$8,500.00
A	PDB000219	1	DEALER SUPPLIED - OTHER - SETCOM INTERCOM SYSTEM	$8,000.00	$8,000.00
A	PDB000219	1	DEALER SUPPLIED - OTHER - Full Width Mud Flap across the rear	$2,000.00	$2,000.00
			TOTAL NON-PUBLISHED OPTIONS:		**$110,415.85**

	Sutphen **Component Report** Dealership: Williams Fire Apparatus	**DeKalb County, GA – SPH100** Contact: Nigel Wilson Position: Fleet Superintendent Phone: 404-297-6566 Mobile: Email: newilson@dekalbcountyga.gov Order#: SQB010580_1 Customer#: CTB000948

Bill To
Customer: DeKalb County Contact: Nigel Wilson , Fleet Superintendent Address: 1300 Commerce Drive Decatur, GA 30030

Ship To
Customer: DeKalb County Contact: Nigel Wilson , Fleet Superintendent Address: 5350 Memorial Drive Stone Mountain GA 30083

Comments
Project Coordinator: Sales Person: Revision Level: Truck Type: Body Facility:

Line	Item #	Qty	Item Description/Comments
1		1	APPARATUS MODEL = SPH100
2		1	**ENG Facility = Dublin
3		1	**ENG Electrical System = Multiplex
4	USA	1	USA
5		1	**ENG Cooperative Purchasing =Sourcewell (NJPA)
6	10000100	1	INTENT OF SPECIFICATIONS - CUSTOM APPARATUS
7	10000220	1	DETAILED WIRING SCHEMATIC
8	10000310	6	~INSPECTION TRIPS - PER PERSON, PER TRIP (6)
9	10010006	1	CHASSIS, CUSTOM
10	51070247	1	Wheelbase = 247
11	25020120	1	FRAME, 10" DOUBLE RAILS, DOMEX, TANDEM AXLE - AERIAL (110K PSI)
12	45010003	1	FRONT TOW EYES, TOP OF BUMPER

Line	Item #	Qty	Item Description/Comments
13	45010015	1	FRONT TOW EYE FINISH, PAINTED
14	46010000	1	REAR TOW EYES
15	40010250	1	STEERING - ROSS TAS-85
16	22010100	1	DRIVE LINE, SPICER, 1810 SERIES (Tandem)
17		1	**CLAR NOTES, --Tow eyes through top of bumper in addition to standard tow eyes under truck -- Tow eyes through top of bumper painted job color, DeKalb Red -- Tow eyes under truck painted blacked to match frame rail
18	23014230	1	ENGINE, CUMMINS X 12 500HP DOC-DPF-DEF-SCR OBD
19	23029220	1	ENGINE WARRANTY, 10 YEAR, 200,000 MILES FOR CUMMINS X12 / X15 MAJOR COMPONENTS COVERAGE (FCM)
20	23030006	1	AIR INTAKE/EMBER SEPARATOR
21	23031176	1	FUEL FILTER/WATER SEPARATOR, PRIMARY, FLEETGUARD FUEL PRO FH230
22	23031180	1	12VDC HEATER FOR FLEETGUARD FUEL/WATER SEPARATOR
23	23031220	1	FUEL FILTER, SECONDARY, FLEETGUARD, FF5776
24	47012445	1	TRANSMISSION, ALLISON GEN 5, EVS4000R W/RETARDER
25	23110100	1	DELETE JACOBS ENGINE BRAKE
26	47024050	1	TRANSMISSION COOLER
27	47030000	1	ALLISON TOUCH PAD SHIFTER
28		1	**ENG Shifter Pad Gearing = 5 Gears open, 6th Gear locked.
29	21021200	1	COOLING SYSTEM
30	21030000	1	FAN CLUTCH
31	21030200	1	RADIATOR COOLANT RECOVERY, PRESSURIZED SYST
32		1	**CLAR NOTES, -- Jacob brake to drop to 2nd Gear on activation
33	26020100	1	FUEL BEAM, 65 GALLON (AERIALS)
34	26030055	1	DUAL FUEL FILL (FUEL BEAM)
35	26030100	1	FUEL COOLER
36	24040000	1	DIESEL EXHAUST FLUID TANK
37	15030410	1	120V SHORELINE INLET, MANUAL, HUBBEL #HBL61CM64 (GRAY)

Line	Item #	Qty	Item Description/Comments
38		1	**ENG Shoreline Inlet Location = Driver's side of Cab, standard location.
39	13010205	1	ALTERNATOR, LEECE NEVILLE 320 AMP 4962PA
40	15040100	3	120V OUTLET WIRED TO SHORELINE INLET - EA (3)
41	13030100	1	LOW VOLTAGE ALARM, FLOYD BELL TXB-V86-515-QF
42	15028888	1	SPECIAL Batteries DEKALB STYLE BATTERIES
43		1	**CLAR NOTES, --Yellow Top Optima Batteries D31T (4)
44	15030215	1	MASTER BATTERY DISCONNECT SWITCH
45	15031700	1	BATTERY JUMPER TERMINALS
46	15031560	1	BATTERY CHARGER, KUSSMAUL LPC 40 W/REMOTE BAR GRAPH DISPLAY
47		1	**ENG Outlet Locations = (1) in R1 (1) in R4 (1) in EMS Compartment
48		1	**ENG Battery Charger Display Location: bar graph display will be in driver's side window.
49		1	**ENG Battery Charger Note: Chassis Division to provide/install battery charger & Auto Eject (if applicable)
50	15088888	1	SPECIAL ITEM, ADDITIONAL BATTERY INDICATOR LOCATED EXTERIOR OF CAB, ABOVE SHORE LINE CONNECTION
51		1	**CLAR NOTES, --Wired directly to the batteries to always show status of batteries
52	14022130	1	FRONT AXLE, HENDRICKSON STEERTEK NXT 23,000 LB.
53	41022130	1	SUSPENSION FRONT 23,000 LBS. (4) 56" LEAFS
54	41040100	1	FRONT SUSPENSION LOCKING CYLINDERS, AERIAL TOWER
55	41040200	1	FRONT SUSPENSION LOCKOUT PLATE
56	41040510	1	STEER ASSIST
57	43010320	1	FRONT TIRES GOODYEAR 425/65R22.5 LRL G296 HGW 22.5 X 12.25 WHEELS
58		1	**CLAR NOTES, --Greased front hubs IPOS oil seals. Hubs to have chrome covers on the center. Match HS-6419
59	14520310	1	REAR AXLE, MERITOR RT-50-180 52,000 LB TANDEM
60	14530200	1	TOP SPEED, OTHER
61	42020025	1	SUSPENSION REAR RAYDAN 52,000 LBS. AIR RIDE
62	44020282	1	TIRES, REAR, GOODYEAR 12R22.5 LRH ENDURANCE RSA HIGHWAY 52,000 GVWR

Line	Item #	Qty	Item Description/Comments
63	42920300	1	TIRE PRESSURE MONITOR, QUICK PRESSURE
64	44220210	1	WHEELS, ALUM, ALCOA, DURABRITE (max 58K rear)
65	44230120	1	INNER WHEELS COATED, TANDEM AXLE
66	44270105	1	HUB COVERS, FRONT & REAR, POLISHED STS (Tandem Axle)
67	44270305	1	CHROME LUG NUT CAPS, FRONT & REAR (Tandem Axle)
68	44271100	1	MUD FLAPS, FRONT (PAIR)
69	44271200	1	MUD FLAPS, REAR (PAIR)
70	44088888	1	SPECIAL ITEM, STS LUG NUT CAPS
71	44088888	1	SPECIAL ITEM, JAKE IN ADDITION TO TRANSMISSION RETARDER
72	44088888	1	SPECIAL ITEM, AUTOMATIC HEATED MOISTURE EJECTORS W/MANUAL PULL CABLE (TANDEM)
73		1	**CLAR NOTES, In addition to central location for air tank drains
74	44042005	1	SPARE TIRE GOODYEAR 12R22.5 (1)
75	44042015	1	SPARE TIRE GOODYEAR 425/65R22.5 (1)
76	44041015	1	SPARE WHEEL, ALUM 22.5 X 8.25 (1)
77	44041025	1	SPARE WHEEL, ALUM 22.5 X 12.25 (1)
78	44042100	2	MOUNT SPARE TIRE TO SPARE WHEEL (2)
79	44088888	1	SPECIAL ITEM, SPARE TIRES & WHEELS - DROPPED SHIPPED OR ORDERED LOCALLY. CAN NOT BE SHIPPED LOOSE ON APPARATUS
80		1	**CLAR NOTES, - Can this be drop shipped OR can order be placed locally by Sutphen for pickup by DeKalb or WFA. No way to ship spare wheel/tire on an SPH
81	16010275	1	BRAKES STEERTEK DISC PLUS EX225 FRONT, MERITOR DISC PLUS EX225 REAR (TANDEM AXLE)
82	18030000	1	GUARD OVER PARKING BRAKE KNOB
83	18030400	1	FRONT WHEEL BRAKE ASSIST FOR FOUR WHEEL BRAKE SERVICE
84	18010046	1	AIR BRAKE SYST 6 TANKS WABCO 1200 DRYER (TANDEM)
85	18020000	1	CENTRAL LOCATION FOR AIR TANK DRAINS
86	18030110	1	AIR OUTLET CONNECTION
87		1	**ENG Cab Air Outlet Location = Driver Side Pump Panel

Line	Item #	Qty	Item Description/Comments
88	18030140	1	AIR INLET CONNECTION
89		1	**ENG Standard Air Inlet Location = Left hand side of driver's step well.
90	18220500	1	NO ELEC STABILITY CONTROL SYS
91	18110150	1	WABCO 6 CHANNEL ANTI-LOCK BRAKES W/ASR TANDEM
92	14530501	1	TIRE CHAINS, ON-SPOT, 6 STRANDS, (1) SET
93	54010200	1	AERIAL CHASSIS PREP (TANDEM AXLE)
94	53510000	1	COMPRESSION FITTINGS ON AIR SYSTEM (CHASSIS)
95	54010000	1	MISCELLANEOUS ITEMS ON CHASSIS
96	54088888	1	SPECIAL ITEM, DUAL PROTECT-O-SEAL FUEL CAP
97	54088888	1	SPECIAL ITEM, UPGRADE TIRE CHAINS TO BE SEVERE DUTY
98	11024250	1	CAB TSAL4SE 73" 10" RR 1/2
99	11030025	1	CAB CERTIFICATION - STRUCTURAL INTEGRITY
100	11030950	1	CAB LOCKDOWN LATCHES
101	11031025	1	CAB TILT SYSTEM, AIR CONTROL VALVE
102	11031100	1	MANUAL BACK-UP TILT SYSTEM
103	11031355	1	CAB DOORS, BARRIER STYLE
104	11031365	1	LOWER CAB STEP WELLS, RAPTOR (BLACK) & TREADPLATE BACK & SIDE WALLS
105	11031385	1	CAB STEPS, LOWER GRIP STRUT, INTERMEDIATE DIAMONDPLATE
106	11031390	1	AUXILIARY CAB STEPS, ALUM, GRIP STRUT (SET OF 4)
107	11031398	1	SPECIAL Cab Step Lights AMDOR LUMABAR H20
108		1	**CLAR NOTES, Secured with screws in lieu of two-side tape
109	11031421	1	CAB DOOR WINDOWS, POWER
110	11031406	1	CAB SIDE WINDOWS, FIXED, OFFICER'S SIDE ONLY
111	11031460	1	NO WINDOWS, BACK WALL OF CAB
112	11031465	1	WINDOW TINTING (LIMO TINT 8%) - EACH (3)

Line	Item #	Qty	Item Description/Comments
113	52010010	1	ELECTRIC INTERMITTENT WIPERS
114	38028888	1	SPECIAL Mirror VELVAC, WEST COAST STYLE STAINLESS STEEL, HEATED & REMOTE
115		1	**CLAR NOTES, --Match HS-6419
116	38030205	1	BLIND SPOT MIRROR, VELVAC, ON CAB ROOF
117	11024405	1	UPPER GRILLE, LEVEL STYLE FACADE (X12/X15)
118	11024500	1	FLAMING "S" LOGO, UPPER GRILLE, REFLECTIVE RED
119	11024605	1	LOWER GRILLE, POLISHED STAINLESS (X12/X15)
120	32588888	1	SPECIAL ITEM, SEVERE DUTY INSULATION PACKAGE (ALUMINUM PANELS W/ DTA)
121		1	**CLAR NOTES, --Install Gwinnett style severe duty insulation package. Additional aluminum panels installed over standard insulation double sprayed with DTA to reduce heat transfer to cab
122	32588888	1	SPECIAL ITEM, RELOCATED MANUAL CAB TILT SYSTEM TO THE R-1 COMPARTMENT
123		1	**CLAR NOTES, --Driver side fixed window deleted due to EMS compartment.
124	32588888	1	SPECIAL ITEM, BLIND SPOT MIRROR TO BE HEATED
125		1	**CLAR NOTES, Match pumpers
126	32588888	1	SPECIAL ITEM, CAB CREW DOORS TO BE PUMPER STYLE NON-SLANTED DOORS
127		1	**CLAR NOTES, -Reference drawing. Doors to be cut straight, non-slanted.
128	20012200	1	BUMPER, 12" FORMED STEEL CHANNEL, PAINTED
129		1	**ENG Siren Speaker Perforations = No Speaker Perforations in Bumper.
130	20029830	1	BUMPER SIDES, PAINTED STEEL, W/POCKET (12-24" EXTENSION)
131	20050300	1	WINCH RECEIVER, FRONT
132	20050395	1	WIRING FOR WINCH RECEIVER (1)
133	20088888	1	SPECIAL ITEM, FRONT BUMPER NOTCHED FOR FRONT RECEIVER SO ANGLE OF DEPARTURE IS NOT AFFECTED
134	12010510	1	AIR HORNS, DUAL, GROVER #1510 ROUND, 24"
135	12030025	1	AIR HORNS CUTOUTS THRU BUMPER, ROUND, NO PERFORATIONS
136	12030205	1	AIR HORNS WIRED TO STEERING WHEEL BUTTON
137	12030350	1	LANYARD CONTROL FOR AIR HORNS

Line	Item #	Qty	Item Description/Comments
138	12088888	1	SPECIAL ITEM, DEKALB STYLE LANYARD CONTROL
139		1	**CLAR NOTES, --Air horn activation switched center mounted in ceiling. Supply and install paracord ipos pull cable for activation. Match (HS-6419)
140	12510109	1	ELEC SIREN, WHELEN 295HFSA7, REMOTE FLUSH MOUNT WITH REMOVABLE MIC
141	12620202	1	SIREN SPEAKER, 100W, WHELEN, SA314B, BLACK FINISH (PAIR)
142	12670110	1	SIREN SPEAKER(S) INSTALLED BEHIND CAB GRILLE
143	12710100	1	SIREN, FEDERAL Q2B, GRILLE MOUNT
144	12730305	1	FOOT SWITCH, DRIVER'S SIDE, FOR MECH SIREN
145		1	**ENG Siren Brake Switch for Driver.
146	12730310	1	FOOT SWITCH, OFFICER'S SIDE, FOR MECH SIREN
147		1	**ENG Siren Brake Switch for Officer.
148		1	**CLAR NOTES, --Mount footswitch on officer side as far outboard as possible
149	32520520	1	HEADLIGHTS, LED, FIRETECH FT-4X6, DUAL STS HOUSINGS
150	32530500	1	ALTERNATING FLASHER FOR HEADLIGHT
151	48010300	1	FRONT TURN SIGNALS, WHELEN 400 SERIES LED (4)
152	32530630	1	CORNERING LIGHTS, WHELEN M6 LED
153	32588888	1	SPECIAL ITEM, DEKALB CORNERING LIGHT MOUNTING KIT
154		1	**CLAR NOTES, --Cornering light located on the side of the headlight housing. The warning light normally in this location will be located on the side of the bumper skirt. (Match HS-6419). Conering light will be recessed in a stainless steel pocket --All four (4) headlights to flash with alternating headlights in headlight switch is OFF
155	27022130	1	HANDRAILS, CAB EXTERIOR, KNURLED STAINLESS STEEL (2) SIDE
156	27030605	1	COAT HOOKS FOR GRAB HANDRAILS (2)
157	27030710	1	HANDRAILS, FRONT OF CAB, KNURLED STAINLESS STEEL (PAIR)
158	27025000	1	HANDRAILS, CAB INTERIOR, BLACK RUBBER COATED (2) FRONT ENTRY
159	27025500	1	HANDRAILS, CAB INTERIOR, BLACK RUBBER COATED (2) REAR ENTRY
160	27030120	1	HANDRAILS, REAR CAB INTERIOR DOOR, BLACK RUBBERIZED (2) AND KNURLED STS AT WINDOW (2)
161	11035405	1	DIAMONDPLATE REAR EXTERIOR WALL OF CAB (AERIAL OR TOP MOUNT)

Line	Item #	Qty	Item Description/Comments
162	11032020	1	EXTERIOR COMPT, SIDE OF EXT CAB, 60" H, DS
163	11032450	1	COMPT DOOR LOCK - NOT PROVIDED
164	11032200	1	INTERIOR ACCESS, NOT PROVIDED
165	11032100	1	NO OPENING TO CREW SEAT COMPT
166	11032070	1	EXTERIOR COMPT, SIDE OF EXT CAB, 60" H, OS
167	11032450	1	COMPT DOOR LOCK - NOT PROVIDED
168	11032200	1	INTERIOR ACCESS, NOT PROVIDED
169	11032100	1	NO OPENING TO CREW SEAT COMPT
170	11088888	1	SPECIAL ITEM, DIAMONDPLATE EXTERIOR WALL OF CAB, FULL HEIGHT/WRAP AROUND CAB EDGE
171	11032388	1	SPECIAL ITEM, EXTERIOR CAB COMPARTMENTS TO BE 66" TALL IN LIEU OF 60
172		1	**CLAR NOTES, --Reference DeKalb pumpers --Doors to be mounted with hinge to the rear (suicide doors)
173	11035422	1	DIAMONDPLATE CAB ROOF 56" x FULL WIDTH
174	11033202	1	3/16" SMOOTH ALUM BACK WALL & SIDE WALLS, INSIDE CAB
175	31010250	1	INTERIOR, MULTISPEC BLACK SPECKLE PAINT W/BLACK EMBOSSED FRP BOARD
176	11032929	1	DOOR PANEL, FULL STS
177	11032950	1	REFLECTIVE MATL, INTERIOR CAB DOORS, SCOTCHLITE STRIPE
178	31010291	1	CAB INTERIOR FLOOR COVERING, BLACK RUBBERIZED
179	11035375	1	DIAMONDPLATE CAB FLOOR
180	22510100	1	ENGINE ENCLOSURE, FULL LENGTH
181	22510530	1	ENGINE ENCLOSURE COVERING, SCORPION BLACK URETHANE BLEND
182	11031680	1	CENTER CONSOLE W/MAP BOOK STORAGE, TOP OF ENGINE ENCLOSURE
183	22610050	1	ENGINE HOOD LIGHT, LED (1)
184	11031512	1	COMPUTER TRAY IN LIEU OF GLOVE BOX
185	11031701	1	GLOVE BOX HOLDERS IN UPPER CREW DOORS (SLANT BACK, RR)
186	29810220	1	CHASSIS ELECTRICAL SYSTEM, MULTIPLEX, WELDON, VMUX, 1 VISTA SCREEN (AERIAL)

Line	Item #	Qty	Item Description/Comments
187	30010235	1	INSTRUMENTATION, AMETEK GAUGES, FOR MULTIPLEX W/CENTER & OVERHEAD CONSOLE (AERIALS)
188		1	**ENG Overhead Console Panel's Finish: Black Wrinkle Finish.
189		1	**ENG Overhead Console Position 1 EM Master, Cab Warning, Body Warning, Rear Warning, ALT. Headlights, Front Flashing, SPARE, Q2B Siren Brake
190		1	**ENG Overhead Console Position 2 Brow Light, Left Scene, Right Scene, Ground Lights, Spot Lt Hose Bed
191		1	**ENG Overhead Console Position 3 A/C Controls
192		1	**ENG Overhead Console Position 4 Instrumentation & Dummy Lights
193		1	**ENG Overhead Console Position 5 Firecom Intercom Control Head
194		1	**ENG Overhead Console Position 6 Blank
195		1	**ENG Overhead Console Position 7 Blank
196		1	**ENG Lower Command Console Finish Gray Urethane.
197		1	**ENG Lower Console Panel's Finish Black Wrinkle Finish.
198		1	**ENG Lower Console Position 1 Pump shift, transmission touch pad
199		1	**ENG Lower Console Position 2 Jake ON/OFF Jake LOW/MED/HIGH High Idle Air Horn/E Horn Tire Chains Aerial PTO Generator PTO
200		1	**ENG Lower Console Position 3 Driver's side storage slot
201		1	**ENG Lower Console Position 4 Blank (dealer will install radio in this location post production)
202		1	**ENG Lower Console Position 5 Officer's side storage slot
203	30010700	1	CAB PUMP SHIFT, AIR
204	30031688	1	SPECIAL Door Ajar Light WHELEN M2WR
205		1	**ENG Door Ajar Light Location = Centered below upper command console.
206	30031655	1	DOOR AJAR ALARM WITH SILENCE BUTTON
207	29930210	1	DELETE MAPBOOK SLOT ON FRONT BREAKER PANEL
208	30031100	1	HIGH IDLE SWITCH
209	30031775	1	12V POWER POINTS, (2)

Line	Item #	Qty	Item Description/Comments
210		1	**ENG Power Point Location #1: Lower Console Position 3, Officer's corner.
211		1	**ENG Power Point Location #2: Lower Console Position 3, Driver's corner.
212	30031802	1	12V DUAL PORT USB POWER POINTS, (2)
213		1	**ENG USB Power Point Location #1: Lower Console Position 3, Officer's corner.
214		1	**ENG USB Power Point Location #2: Lower Console Position 3, Driver's corner.
215	11040000	1	CAB ACCESSORY FUSE PANEL
216	84541540	1	POWER & GROUND STUDS, UPPER COMMAND CONSOLE
217		1	**ENG Requirements (AMPS) for Power/Ground Studs in Upper Command Console: (1) 12-volt 60-amp, direct to the battery. (1) 12-volt 30-amp controlled by the ignition switch. (1) 12-volt 125-amp ground.
218	84541545	1	POWER & GROUND STUDS, LOWER COMMAND CONSOLE
219		1	**ENG Requirements (AMPS) for Power/Ground Studs in Lower Command Console: (1) 12-volt 60-amp, direct to the battery. (1) 12-volt 30-amp controlled by the ignition switch. (1) 12-volt 125-amp ground.
220	84541550	1	POWER & GROUND STUDS, UNDER OFFICER'S SEAT
221		1	**ENG Requirements (AMPS) for Power/Ground Studs Under Officers Seat: (1) 12-volt 40-amp controlled by the battery switch. (1) 12-volt 60-amp controlled by the ignition switch. (1) 12-volt 60-amp, direct to the battery. (1) 12-volt 100-amp ground.
222	30110000	1	VEHICLE DATA RECORDER, AKRON/WELDON
223	33510030	1	INTERIOR CAB LIGHTS, WHELEN 6" ROUND RED/CLEAR LED (2)
224	34010030	1	INTERIOR CREW LIGHTS, WHELEN 6" ROUND RED/CLEAR LED (2)
225	33530654	1	INTERIOR CAB DOOR WARNING LIGHTS, WHELEN ION T-SERIES LED, TLI* (QTY 4)
226		1	**ENG Cab Door Light Color Amber
227		1	**CLAR NOTES, --Interior cab door warning lights split RED/AMBER
228	28010750	1	DEFROSTER, HEATER & A/C, SEVERE CLIMATE (TM-31)
229	28090003	1	HEAT TO FEET
230	28030500	1	DEFROSTER DUCTWORK, ENTIRE WINDSHIELD
231	11031687	1	TOP HEAT/AC STORAGE, TOOL MOUNTING PLATE, 25" x 19.5"
232	11031692	1	REAR HEAT/AC STORAGE, 3 EMS GLOVE HOLDERS, HORIZONTAL
233	28031001	1	FAN, 12 VOLT, DRIVER'S SIDE, MOUNTED OUTBOARD OF WINDSHIELD

Line	Item #	Qty	Item Description/Comments
234	28031101	1	FAN, 12 VOLT, OFFICER'S SIDE, MOUNTED OUTBOARD OF WINDSHIELD
235		1	**CLAR NOTES, --Mount defrost fans outboard near A-post.
236	38510204	1	DRIVER'S SEAT, BOSTROM SIERRA ELECTRIC ABTS (DURAWEAR PLUS, LOW SEAM)
237	38320000	1	HELMET STORED IN COMPARTMENT
238	39010151	1	OFFICER'S SEAT, BOSTROM SIERRA, ELECTRIC ABTS (DURAWEAR PLUS, LOW SEAM)
239	39030010	1	OFFICER'S SEAT COMPT, OPEN FRONT
240	38320000	1	HELMET STORED IN COMPARTMENT
241	39528889	1	SPECIAL Crew Seat CUSTOM EMS COMPARTMENT, DEKALB STYLE
242		1	**CLAR NOTES, --Includes fixed divider separating top from bottom on the compartment. Bottom of compartment is open storage with no door. Top of compartment has hinge door. Compartment notched to fit heat-to-feet duct work on driver side. Match previous DeKalb units
243	11032288	1	SPECIAL Interior Access EMS Cabinet 0
244	11032311	1	ADJUSTABLE SHELF, EMS COMPT (1)
245	39521210	1	CREW SEAT 2, BOSTROM SIERRA, ABTS HIGH BACK (DURAWEAR PLUS, LOW SEAM)
246	38320000	1	HELMET STORED IN COMPARTMENT
247	39521510	1	CREW SEAT 3, BOSTROM SIERRA, ABTS HIGH BACK FLIP UP (DURAWEAR PLUS, LOW SEAM)
248	38320000	1	HELMET STORED IN COMPARTMENT
249	39521511	1	CREW SEAT 4, BOSTROM SIERRA, ABTS HIGH BACK FLIP UP (DURAWEAR PLUS, LOW SEAM)
250	38320000	1	HELMET STORED IN COMPARTMENT
251	39588888	1	SPECIAL ITEM, ALL SEATS TO BE VINYL MATERIAL
252	39550200	1	SEAT COLOR, BLACK
253	38410000	1	SEAT BELT WARNING SYSTEM, AKRON / WELDON
254	39710015	1	CREW SEAT COMPT, FRONT DROP-DOWN DOORS (73" CAB)
255	39588888	1	SPECIAL ITEM, D-RING LATCHES ON CREW SEAT COMPARTMENT DOORS
256	84541601	1	MOUNTING OF CUSTOMERS RADIO-DUAL HEAD
257		1	**ENG Radio Make & Model = TBD
258	84541700	2	INSTALLATION OF CUSTOMERS 2-WAY RADIO ANTENNA (2)

Line	Item #	Qty	Item Description/Comments
259	84541500	1	WIRING OF CAB FOR FUTURE INSTALLATION OF HANDLIGHT CHARGERS OR RADIO CHARGERS
260	30030100	1	OFFICER'S SIDE SPEEDOMETER
261	60012305	1	QMAX-1500 GPM 6" SUCTION SINGLE STAGE PUMP
262	60025010	1	GEARBOX, HALE, G-SERIES, FRONT MOUNTED
263	60026020	1	MECHANICAL PUMP SEAL, HALE
264	60031005	1	ALLOY ANODES, HALE
265	60035121	1	PUMP TEST, MISTRAS GROUP, INC
266	61510000	1	AUXILIARY COOLER (HEAT EXCHANGER)
267	62010002	1	STAINLESS STEEL PIPING
268	60088888	1	SPECIAL ITEM, COMPRESSION FITTINGS ON AUXILLARY COOLER & LINES
269	61028888	1	SPECIAL Pressure Control PRESSURE CONTROL, HALE TOTAL PRESSURE MASTER (TPM)
270	61031000	1	ENGINE STATUS CENTER, CLASS 1 ENFO IV
271	61210410	1	INTAKE PRESSURE CONTROL, TFT A1831
272	61088888	1	SPECIAL ITEM, HAND THROTTLE ON PANEL, CLASS 1 TWISTER
273		1	**CLAR NOTES, --Set intake pressure control @ 150psi
274	63021100	1	6" MAIN SUCTION, LEFT SIDE
275	63030400	1	HALE MASTER INTAKE VALVE, ELEC
276	63034650	1	ADAPTER, 6" NST FE X 5" STORZ, 30 DEGREE W/CAP & CHAIN, TFT
277	65030000	1	2.5" LEFT SIDE INLET
278	61720100	1	VALVE, AKRON HEAVY DUTY
279	61770100	1	ACTUATOR, VALVE, SWING HANDLE
280	60036010	1	THREADS, NST
281	75088888	1	SPECIAL ITEM, HANDWHEEL FOR MANUAL OVER-RIDE IN LIEU OF BLACK HANDLE
282	63025100	1	6" MAIN SUCTION, RIGHT SIDE
283	63030400	1	HALE MASTER INTAKE VALVE, ELEC

Line	Item #	Qty	Item Description/Comments
284	63034650	1	ADAPTER, 6" NST FE X 5" STORZ, 30 DEGREE W/CAP & CHAIN, TFT
285	64030000	1	2.5" RIGHT SIDE INLET
286	61720100	1	VALVE, AKRON HEAVY DUTY
287	61770100	1	ACTUATOR, VALVE, SWING HANDLE
288	60036010	1	THREADS, NST
289	64088888	1	SPECIAL ITEM, HANDWHEEL ON MANUAL MIV MANUAL OVER-RIDE
290	71025140	1	4" DISCHARGE, RIGHT - POSITION 3
291	61720100	1	VALVE, AKRON HEAVY DUTY
292	61770200	1	ACTUATOR, VALVE, AKRON HANDWHEEL
293	77021010	1	GAUGE, DISCH, INNOVATIVE CONTROLS 2.5"
294	61810150	1	DISCHARGE TERMINATION, 30 DEGREE ELBOW
295	60036010	1	THREADS, NST
296	72810150	1	DELETE STD CROSSLAYS (SPH)
297	61742000	1	MASTER PUMP DRAIN, MULTIPORT
298	61730005	3	DRAIN VALVES, INNOVATIVE CONTROLS, LIFT-UP (3)
299	78528888	1	SPECIAL Aerial Discharge Control & Flowmeter NOT REQUIRED
300	61910100	1	WATERWAY DRAIN VALVE, AKRON 1.5" PUSH/PULL CONTROL
301	74920210	1	SPH1 - SIDE MOUNT PUMP PANEL
302	74930500	1	PANEL FINISH, BLACK VINYL
303	74931000	1	ESCUTCHEON PLATES
304	74931050	1	COLOR CODING
305	74931210	1	PUMP MODULE FRAMEWORK, NON-PAINTED
306	74931310	1	PUMP FINISH, PAINTED BY PUMP MFG
307	74931510	1	PLUMBING FINISH, NON-PAINTED
308	75088888	1	SPECIAL ITEM, BUSTIN GRATING ON PULL-OUT STEP UNDER PUMP MODULE

Line	Item #	Qty	Item Description/Comments
309	75510210	1	PUMP OPERATOR LIGHTS, TECNIQ E41 LED STRIP
310	75530110	1	PUMP PANEL LIGHTS OFFICER'S SIDE, TECNIQ E41 LED STRIP
311	76010200	1	PUMP PANEL GAUGES & CONTROLS - NO TANK OPTION
312	60028050	1	PUMP PRIMER, TRIDENT, AIR
313	60028310	1	(1) PRIMER BUTTON - MAIN SUCTION
314	76025100	1	COMPRESSION FITTINGS ON AIR SYSTEM (CTZ PUMP MODULE)
315	76030805	1	HALE TRV-L THERMAL RELIEF VALVE WITH LIGHT AT PUMP PANEL
316	76031900	1	AIR HORN PUSH BUTTON SWITCH ON PUMP PANEL
317	76528888	1	SPECIAL Master Gauges GAUGES, MASTER, INNOVATIVE CONTROLS, 6"
318	83520300	1	DELETE WATER TANK
319	80117030	1	BODY SPH-3, LEFT 56" H / RIGHT 56"H
320	80029910	1	BODY SUBFRAME, SPH100
321	81165705	1	UNISTRUT TRACK IN COMPTS
322	80220240	1	COMPT DOORS, AMDOR ROLL-UP, PAINTED
323	84531110	1	COMPT LIGHTING, AMDOR LED LIGHT STRIPS, 2 PER COMPT
324	80288888	1	SPECIAL ITEM, SAW COMPARTMENT ACCESSBILE FROM THE TOP OF L4
325		1	**CLAR NOTES, Coffin like compartment accessible from the top of the body. L4 to be notched.
326	81320205	1	SPH 100 HOSEBED, ALUM FLOORING
327		1	**ENG List the Hose Bed Hose Load Req. = Hose bed converted to ladder chute. NO WATER TANK
328	81428888	1	SPECIAL Hosebed Cover HOSE BED CONVERTED TO LADDER CHUTE
329	81431200	1	REAR HOSEBED COVER, VINYL
330	81440288	1	SPECIAL Hosebed Cover Fastener HOSEBED AREA CONVERTED TO LADDER CHUTE
331	81910500	1	HANDRAILS, KNURLED STS, SPH100
332	82072800	5	CHROME GRAB HANDLE (5)
333		1	**ENG State Grab Handle Locations = Contingency amount. To be mounted at mid or final if needed.

Line	Item #	Qty	Item Description/Comments
334	82014500	1	STEPS, IC FOLD DOWN W/LIGHT (SPH)
335		1	**ENG Step Light Color = White
336	82510000	1	RUB RAILS, ANODIZED ALUM
337	83010125	1	ALUMINUM TREADPLATE (SPH)
338	80290101	1	FIBERGLASS WHEEL WELL LINERS (SL100, SPH)
339	80231888	1	SPECIAL SCBA Compt 6 SCBA CYLINDER COMPTS (TANDEM)
340		1	**CLAR NOTES, -Fuel fill both driver and officer side.
341	89988888	1	SPECIAL ITEM, D-RING LATCHES ON SCBA DOORS IN FENDER
342	89988888	1	SPECIAL ITEM, RUB RAILS TO HAVE WHITE REFLECTIVE STRIP
343	89988888	1	SPECIAL ITEM, FOUR COMPARTMENTS BUILT IN PLATFORM ACCESS LADDER AREA
344		1	**CLAR NOTES, ea compartment to have a D-Handle, door to be treadplate, and turtle tile in the bottom.
345	89988888	1	SPECIAL ITEM, L2/L3 & R2/R3 TO BE BARN DOORS
346		1	**CLAR NOTES, with D-Ring latches
347	89988888	1	SPECIAL ITEM, DELETE L6 COMPARTMENT & COMBINE WITH L5
348		1	**CLAR NOTES, L5 compartment to be one large compartment with roll-up door
349	89028888	1	SPECIAL Ladder Package LADDERS, DUO-SAFETY (CUSTOM MEASUREMENTS) - 17' LITTLE GIANT (NFPA), 16' ROOF DOUBLE HOOK, 16' ROOF DOUBLE HOOK, 20' ROOF (DOUBLE HOOKED), (2) 28' 2-SECTION, (2) 35' 2-SECTION, 45' 3-SECTION, 10' FOLDING LADDER
350		1	**CLAR NOTES, One (1) 10 ft. folding ladder, Series 585A (mounted in fly section) One (1) 16 ft. roof ladders, Double Hooked Series 875A mounted internal One (1) 16 ft. roof ladders, Double Hooked Series 875A mounted on side of boom One (1) 20 ft. roof ladders, Double Hooked Series 875A - mounted on side of boom One (1) 20 ft. roof ladders, Double Hooked Series 875A - mounted internal Two (2) 28 ft. 2-section extension ladder, Series 1200A Two (2) 35 ft. 2-section extension ladder, Series 1200A One (1) 45 ft. 3-section extension ladder - mounted internal
351	89030605	1	LITTLE GIANT 17' LADDER (1)
352	89530900	1	MOUNTING OF EXTRA LADDER (EACH) (1)
353		1	**ENG State Mounting of Extra Ladders Location and Details = -For Little Giant Ladder mounted on top of officer side body compartment.

Line	Item #	Qty	Item Description/Comments
354	89530910	2	MOUNTING OF ROOF LADDER ON BASE SECTION OF AERIAL (2)
355	89512200	1	LADDERS ENCLOSED IN HOSEBED ON BEAM (SPH)
356	89088888	1	SPECIAL ITEM, LADDER CHUTE DOOR STAY-OPEN MECHANISMS
357		1	**CLAR NOTES, Install (1) Cast Products stay-open mechanism at bottom of each ladder chute door. Location to match HS 6354
358	89088888	1	SPECIAL ITEM, CUSTOM LADDER CHUTE TO HOLD FULL COMPLIMENT OF LADDERS
359		1	**CLAR NOTES, -Includes rollers and stops. -Design to be similar to Columbus -Rear ladder chute doors to be smooth aluminum with chevron striping. - Officer side door to open first. -Add side to side bracing at top of chute towards front of body to reduce stress on chute welds.
360	80232110	1	2" RECEIVER, REAR
361	80232175	1	WIRING FOR WINCH RECEIVER (1)
362		1	**ENG Type of Plug for Body Winch Receiver = To be determined at precon.
363	84550110	1	LICENSE PLATE BRACKET W/ LIGHT, LED
364	84511220	1	BODY ELECTRICAL SYSTEM, MULTIPLEX, WELDON, VMUX (AERIAL)
365	84520000	1	BACK UP ALARM, ECCO SA917
366	84588888	1	SPECIAL ITEM, GROUND LIGHT CIRCUIT SWITCH
367		1	**CLAR NOTES, --The ground lights shall be wired to a switch located in the cab wired to activate ground lights if parking brake is disengaged and headlights are on (Match HS-5523)
368	84588888	1	SPECIAL ITEM, CLASS1 ESKEY IPO VMUX
369	85010420	1	TAILLIGHTS, WHELEN M6 SERIES, LED STOP/TAIL/TURN/REVERSE, QUAD HOUSING (PAIR)
370	85110100	1	ICC LIGHTS, LED
371	85130100	1	MARKER LIGHTS, BRITAX, FLEXIBLE, LED (PAIR)
372	85510205	1	STEP LIGHTS, LED, WHELEN 2G AT PUMP PANEL & REAR BODY
373	85710020	1	UNDERCARRIAGE GROUND LIGHTS, LED
374	86528888	1	SPECIAL Work Lights UNITY LED WORK LIGHTS, SPOT (PAIR)
375	85788888	1	SPECIAL ITEM, WHELEN CORE SYSTEM
376		1	**CLAR NOTES, Reference Pumpers
377	86600000	1	OPTICAL WARNING SYSTEM, UPPER

Line	Item #	Qty	Item Description/Comments
378	86628888	1	SPECIAL WLUpperA DEKALB (3) LIGHT BAR PER PRINT
379		1	**CLAR NOTES, (1) 44.5" Main Bar, Fully Populated (2) 23.5" Mini Bars Mounted to match HS-6638-40
380		1	**ENG Zone A, Upper Lightbar Color / Details = Freedom 4 lightbar. Fully populated with red lens (not filters!) Match HS-5849
381	86699999	1	UPPER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), COVERED BY ZONES A & C
382	86710120	1	UPPER WARNING LIGHTS, ZONE C (REAR), WHELEN LED BEACONS, MCFLED2* (PAIR)
383	86810200	1	UPPER WARNING LIGHTS, ZONE C (REAR PLATFORM), WHELEN M6 LED, M6* (QTY 1)
384	86899999	1	UPPER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), COVERED BY ZONES A & C
385	87100000	1	OPTICAL WARNING SYSTEM, LOWER
386	87110210	1	LOWER WARNING LIGHTS, ZONE A (FRONT), WHELEN M6 LED, M6* (QTY 4)
387	87811130	1	LOWER, ZONE A - MOUNTING LOCATION (DUAL HOUSINGS)
388		1	**ENG Zone A, Lower - Front, Mounting Location = (2) Warnings in top headlight housing, each side.
389	87210220	1	LOWER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), WHELEN M6 LED, M6* (QTY 4)
390	87812140	1	LOWER, ZONE B - MOUNTING LOCATION (SL100, SPH100)
391		1	**ENG Zone B, Lower - Officer's Side, Mounting Location = (1) Warning light near the front corner of the apparatus, (1) under the turntable area, (1) near the rear axle, and (1) near the rear corner of the apparatus.
392	87310200	1	LOWER WARNING LIGHTS, ZONE C (REAR), WHELEN M6 LED, M6* (QTY 2)
393	87410220	1	LOWER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), WHELEN M6 LED, M6* (QTY 4)
394	87814140	1	LOWER, ZONE D - MOUNTING LOCATION (SL100, SPH100)
395		1	**ENG Zone D, Lower - Driver's Side, Mounting Location = (1) Warning light near the front corner of the apparatus, (1) under the turntable area, (1) near the rear axle, and (1) near the rear corner of the apparatus.
396	87588888	1	SPECIAL ITEM, MARS TB8-F "888" FLUSH MOUNT IN CAB
397	87537734	2	ADDITIONAL WARNING LIGHTS, WHELEN M6 LED, M6* (PAIR) (2)
398		1	**ENG Whelen M6 LED Mounting Location = (1) ea side of cab above front wheel, (1) ea side rear of body mid height
399		1	**ENG Additional Whelen Warning Lights Note: Body Facility to provide/install Additional M6 LED Warning Lights
400	87040088	1	SPECIAL Traffic Advisor M2WA - 8
401		1	**CLAR NOTES, -Delete Traffic Control Head. Lights controlled by Whelen CORE

Line	Item #	Qty	Item Description/Comments
402	88391200	1	SCENE LIGHT, WHELEN PIONEER PFH2, 12V LED, BROW (1)
403	88391300	2	SCENE LIGHT, WHELEN PIONEER PCPSM1*, LED, SURFACE MOUNT, 12V (2)
404	86588888	1	SPECIAL ITEM, DELETE SPECIAL ITEM
405		1	**CLAR NOTES, Previously Whelen PFLASH. Not needed and controlled by CORE
406	86588888	1	SPECIAL ITEM, WHELEN SCENE LIGHTS, PCH2 RECESSED MOUNTED
407		1	**CLAR NOTES, (1) mounted each side of the cab at raise roof area
408	86588888	1	SPECIAL ITEM, WHELEN SCENE LIGHTS, SUMMIT LED LIGHTS, S44MRB (2)
409		1	**CLAR NOTES, (1) ea side of truck above L3/R3 switched LEFT scene and RIGHT scene -- Lights wired with incorporated Warning Lights.
410	86588888	1	SPECIAL ITEM, DELETED SPECIAL ITEM
411		1	**CLAR NOTES, Previous for pflasher, not needed due to CORE system
412	86588888	1	SPECIAL ITEM, WHELEN PELCC LIGHTS, (4)
413		1	**CLAR NOTES, (1) on each outrigger panel wired to "OUTRIGGER SPOTS" switch in cab (1) each side of tandem, wired into cornering light circuit
414	86588888	1	SPECIAL ITEM, WHELEN M2 AMBER, (3)
415		1	**CLAR NOTES, (1) ea side of platform and (1) on front skin. Wired in lower power dim mode to ignition switch
416	86588888	1	SPECIAL ITEM, WHELEN M2 GREEN, (3)
417		1	**CLAR NOTES, (1) ea side of platform and (1) on front skin. Wired to Upper Power
418	88230611	1	GENERATOR, HARRISON, 10KW HYD AERIALS
419		1	**ENG With the 10KW hydraulic generator, the generator pump will need to be connected directly to the transmission PTO.
420	88250405	1	CIRCUIT BREAKER PANEL WITH 8 SPACES FOR BREAKERS
421	88251200	1	BREAKER PANEL, SPECIAL LOCATION
422		1	**ENG Breaker panel to be mounted as high as possible in the compartment.
423	TBD	1	Breaker Box Mounting Location = TBD
424	88388888	1	SPECIAL ITEM, HANNAY ECR CORD REEL 1616-14-16 150' OF 12/3 - MOUNTED TOP OF PUMP MODULE (1) EA SIDE
425		1	**CLAR NOTES, -See drawing for location. Motor on reel mounted to the rear. Load as much 12/3 cord on reel as possible. Terminate the reel with ball stop & L5-20 receptacle
426	88388888	1	SPECIAL ITEM, AKRON FOUR-WAY RECEPTACLE BOX WITH PIG TAIL TO REEL CABLE (2)

Line	Item #	Qty	Item Description/Comments
427		1	**CLAR NOTES, -Stored in a compartment. NOT hard-wired to reel. Pigtail to be L5-20 Plug
428	88390661	1	SCENE LIGHT, WHELEN PIONEER PCPSM1A*, LED, SURFACE MOUNT, 120V, FACE OF PLATFORM (1)
429	88390664	1	SCENE LIGHT, WHELEN PIONEER PCPSM2A*, LED, SURFACE MOUNT, 120V, UNDER PLATFORM (1)
430	88388888	1	SPECIAL ITEM, PCP2AFC TELE LIGHTS, BACK OF BUCKET, (1) EA SIDE
431		1	**CLAR NOTES, (1) ea side back corner of the bucket
432	10040610	1	MODEL SPH100, AERIAL COMPONENTS
433	94020236	1	AERIAL TOWER ASSEMBLY, SPH100
434	94020315	1	TURNTABLE ACCESS, LOWER LEFT, FIXED STEPS
435	94020320	1	FIXED STEP UNDER TURNTABLE ACCESS STEP
436	94020340	1	TURNTABLE ACCESS, UPPER LEFT, LADDER
437	94020360	1	TURNTABLE ACCESS, UPPER RIGHT, FOLDING STEPS
438	94020250	1	INTERLOCK SYSTEM
439	94020260	1	ROTATION & SMART BOOM WARNING SYSTEM
440	94020265	1	ROTATION LIMITING ALARM , FLOYD BELL US-09-515-S
441	94020272	1	HYDRAULIC SYSTEM - SPH100
442	94020900	1	12 VOLT AUXILIARY HYDRAULIC POWER
443	94020286	1	PEDESTAL CONTROLS, PROPORTIONAL TYPE, SPH100
444	94021212	1	BOOM ASSEMBLY - SPH100
445	94020488	1	SPECIAL Boom Tracking Lights AERIAL SPOT LIGHTS, WHELEN MPPBCCS LED
446	94021326	1	LADDER SPH 100 HIGH RAIL CABLE TRACK
447	94020490	1	LADDER LIGHTING SYSTEM, FIRETECH FT-WL-2000-S-B, LED
448	94021337	1	HYDRAULIC CYLINDERS - SPH 100
449	94021344	1	AERIAL TOWER WATERWAY - 110 & SPH 100
450	94021027	1	OUTRIGGER GROUND JACKS, MANUAL CONTROL, SPH100
451	94021090	1	AERIAL JACKS ALARM, ECCO DT500

Line	Item #	Qty	Item Description/Comments
452	94021110	1	OUTRIGGER DISPLAY PANEL COVER, CLEAR PLEXIGLASS
453	94021155	1	OFFICER'S SIDE AREA, REAR OF OUTRIGGER, COMPARTMENT W/HINGED DOOR
454	93910012	1	JACK PADS, BLACK - SPH100
455	94021340	1	OPERATIONAL TEST - AERIAL PLATFORMS
456	94040051	1	LADDER TEST, MISTRAS GROUP, INC
457	94088888	1	SPECIAL ITEM, RIGHT SIDE OUTRIGGER CONTROLS, (COLUMBUS STYLE)
458		1	**CLAR NOTES, -Located behind access panel on officer side (reference columbus)
459	94088888	1	SPECIAL ITEM, ACCESS PANEL, OFFICER SIDE OUTRIGGER AREA TO HAVE D-HANDLE
460		1	**CLAR NOTES, --Access panel on officer side to get to LEFT outrigger to have (2) cables in lieu of one. --Access panel to have D-Handle
461	94210016	1	4-DOOR PLATFORM, SPH
462	94210130	1	DOOR SKIN, DIAMONDPLATE (SPH)
463	94210014	1	PLATFORM ACCESS LADDER
464	94210318	1	PLATFORM BOOM CONTROLS, PROPORTIONAL TYPE, SPH/SPI112
465	94210340	1	PLATFORM CONTROL COVER, VINYL
466		1	**ENG Platform Controls Vinyl Cover Color = Black.
467	94210220	1	PLATFORM SPOT LIGHT - (1) UNITY P46FLC SPOT, LED (SP95, 100, 110, SPH)
468	94210295	1	MARKER LIGHTS, BRITAX FLEXIBLE, LED, PAIR, ON SIDES OF YOKE
469	94210350	1	120 VOLT OUTLET IN PLATFORM
470	94210802	1	75 GPM WATER CURTAIN FOR SPH 100 or SPI112
471	94210705	1	YOKE OUTLETS - SPH100
472	94210510	1	MONITOR, DS, AKRON 3483 STREAM MASTER2 , MANUAL 1250 GPM
473	94210668	1	NOZZLE, DS, AKRON 5160 AUTO
474	94210511	1	MONITOR, OS, AKRON 3483 STREAM MASTER2 , MANUAL 1250 GPM
475	94210675	1	NOZZLE, OS, AKRON 2499 & 3488 PIPE
476	94210997	1	INTERCOM SYSTEM, FRC ACT 2-STATION

Line	Item #	Qty	Item Description/Comments
477	94211155	1	PLATFORM AIR SYSTEM W/ 7000 PSI ASME AIR TANK
478	94212500	1	BREATHING AIR ALARM, FLOYD BELL TUHC-V88R-930-Q
479	94270510	1	BREATHING AIR TANK LOCATION, TURNTABLE, OFFICER'S SIDE
480	94210017	1	PARAPET LADDER, SPH100
481	94280150	1	STOKES ARMS, SPH100 PLATFORM
482	94280101	1	STOKES STORAGE BOX, PAINTED, MOUNTED ON BOOM (1)
483	94295001	1	SINGLE LIFTING EYE, 800 LB.
484	89910000	1	CORROSION REDUCTION PROGRAM (SPECS)
485	90010030	1	STAINLESS PAINT SCHEME - CORP AERIALS
486	90030004	1	PAINT, SINGLE TONE
487	90030159	1	PAINT FRAME RAILS, FUEL BEAM, BODY REAR DROP & LOWER AERIAL COMPONENTS - BLACK (TANDEM)
488	90030031	1	PAINT, TURNTABLE, SIDE PLATES & LIFT CYLINDER SILVER
489	90030033	1	PAINT, LADDER SHEAVE BEAMS, EXT CYLINDER & YOKE SILVER
490	90030015	1	A/C CONDENSER PAINTED ROOF COLOR
491	90510100	1	LETTERING, NOT PROVIDED
492	90610010	1	4" SCOTCHLITE STRIPE (TANDEM)
493	90681120	1	CHEVRON STRIPING, REAR BODY OUTBOARD, REFLEXITE (Aerial Platforms)
494	90681420	1	CHEVRON STRIPING, REAR PLATFORM OUTBOARD, REFLEXITE
495	90710075	1	BOOM SIGN, APPROX 88" X 26"
496	90720110	1	8" LETTERING FOR BOOM SIGN (SP95,100,110,SPH)
497	90688888	1	SPECIAL ITEM, DEKALB GRAPHICS PACKAGE
498	91010000	1	MISC EQUIP - (1) PINT TOUCH-UP PAINT, STAINLESS STEEL NUTS & BOLTS
499	91030700	1	ZIAMATIC SAC-44 FOLDING WHEEL CHOCKS (PAIR) MTD W/ SQCH-44H HOLDERS
500	89050100	1	PIKE POLE STORAGE TUBES, (3) EA SIDE
501	91030620	1	~MOUNTING FOR EQUIPMENT PACKAGE

Line	Item #	Qty	Item Description/Comments
502	99010000	1	MANUALS (1-PRINTED & 1-USB) WITH DVD
503	99031195	1	DEALER DELIVERY
504	99040200	1	~DEALER PREP/INSPECTION
505	99510330	1	WARRANTY, 3 YR. OR 40,000 MILES - AERIALS (DUBLIN)
506	99999100	1	NOTATIONS
507	PDB000219	1	DEALER SUPPLIED - OTHER - SETCOM INTERCOM SYSTEM
508	PDB000219	1	DEALER SUPPLIED - OTHER - Full Width Mud Flap across the rear
509		1	COOPERATIVE PURCHASING AGENCY FEES

Table of Contents

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the purchaser a complete apparatus equipped as hereinafter specified. With a view of obtaining the best results and the most acceptable apparatus for service in the fire department, these specifications cover only the general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. The apparatus shall conform to the requirements of the current (at the time of bid) National Fire Protection Association Pamphlet #1901 for Motor Fire Apparatus unless otherwise specified in these specifications.

Bids shall only be considered from companies which have an established reputation in the field of fire apparatus construction and have been in business for a minimum of ten (10) years.

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract must conform. Computer run-off sheets are not acceptable as descriptive literature.

The specifications shall indicate size, type, model and make of all component parts and equipment.

STATEMENT OF EXCEPTIONS TO NFPA 1901

If, at the time of delivery, the apparatus manufacturer is not in compliance, a statement of exceptions must be provided as follows:

- The specific standard affected.
- A statement describing why the manufacturer is not in compliance.
- A description of the remedy, and who the responsible party is.

The document must be signed by an officer of the company, and an authorized agent of the purchaser. NO EXCEPTIONS

QUALITY AND WORKMANSHIP

The design of the apparatus must embody the latest approved automotive engineering practices.

The workmanship must be the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility to various areas requiring periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions.

Construction must be rugged and ample safety factors must be provided to carry loads as specified and to meet both on and off road requirements and speed as set forth under "Performance Test and Requirements."

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be documented with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall be approximately 66% on the rear axle. The successful bidder shall furnish a weight certification showing weight on the front and rear axle, and the total weight of the completed apparatus at the time of delivery.

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

b. The service brakes shall be capable of stopping the fully loaded vehicle within 35 feet from a speed of 25 MPH on a level concrete highway.

c. The apparatus, fully loaded, shall be capable of obtaining a speed of 50 MPH on a level highway with the engine not exceeding 95% of its governed RPM (full load).

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

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

FAILURE TO MEET TESTS

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, a second trial may be made at the option of the bidder within thirty (30) days of the date of the first trials. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Permission to keep and/or store the apparatus in any building owned or occupied by the purchaser shall not constitute acceptance of same.

EXCEPTIONS TO SPECIFICATIONS

The following specifications shall be strictly adhered to. Exceptions shall be considered if they are deemed equal to or superior to the specifications, provided they are fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS." Exceptions shall be listed by page and paragraph.

Failure to denote exceptions in the above manner shall result in immediate rejection of the proposal. In addition a general statement taking "TOTAL EXCEPTION" to the specifications shall result in immediate rejection of bid.

GENERAL CONSTRUCTION

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

DELIVERY REQUIREMENTS

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

PURCHASER RIGHTS

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

U.S.A. MANUFACTURER

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

MANUFACTURER'S EXPERIENCE

Each manufacturer shall have been in business making similar apparatus for a minimum of seventy-five (75) years and must have had single ownership for more than fifty (50) years.

ELIMINATION OF DIVIDED RESPONSIBILITY

It is required that each bidder produce both the chassis and complete apparatus. To eliminate divided responsibility and service, the chassis and body must be manufactured by the same Company. Manufacturer shall state the number of years the Company has been producing their own chassis and body. Manufacturer shall state compliance with the paragraph. NO EXCEPTIONS.

FAMA COMPLIANCE

Manufacturer must be a current member of the Fire Apparatus Manufacturer's Association.

DETAILED WIRING SCHEMATICS

A CD containing detailed wiring diagrams of the apparatus shall be provided at the time of delivery.

INSPECTION TRIPS

An inspection trip shall be provided at the manufacturer's facility, prior to delivery of the completed apparatus. A provision shall be provided in the bid price for all travel, food and lodging. Bidder shall specify the number of personnel included.

SUTPHEN MONARCH CUSTOM CHASSIS

A Sutphen Monarch Severe Duty Cab and Chassis system shall be provided. The chassis shall be manufactured in the factory of the bidder. The chassis shall be designed and manufactured for heavy duty

service with adequate strength and capacity of all components for the intended load to be sustained and the type of service required. The cab and chassis system, shall be considered the bidders “Top of the Line”.

There shall be no divided responsibility in the production of the apparatus.

WHEELBASE

The approximate wheelbase shall be 247".

DOUBLE FRAME RAILS/TANDEM AXLES

The chassis frame shall be of a ladder type design utilizing industry accepted engineering best practices. The frame shall be specifically designed for fire apparatus use.
Each frame rail shall be constructed of two .375” thick-formed channels. The outer channel shall be 10.188" x 3.50” x .375” and the inner channel (liner) shall be 9.31” x 3.13” x .375”.
The section modulus shall be 31.8 in.^{3}. The resistance to bending moment (RBM) over the entire rail will be at-least 3,498,000 in./lbs.
The cross-members shall be constructed of minimum 3/8" formed channels and have formed gusseted ends at the frame rail attachment. Tandem suspensions will use a multi-piece bolt assembled “butterfly” cross-member configuration. This cross-member will span the entire rear of the vehicle.
Each rail is media blasted to remove scale, oil, and contaminants. This blasting also ensures paint adhesion.
Each rail will be primed with Cathacoat 302HB, a high performance, two component, reinforced inorganic zinc-rich primer with proven cathodic protection of steel structures, prior to assembly.
.625 inch, grade 8 flange, Huck bolt fasteners shall be used on all permanently attached brackets to the frame to eliminate the need for bolt re-tightening.
A lifetime warranty shall be provided, per manufacturer's written statement.

FRONT TOW EYES, TOP OF BUMPER

There shall be two front tow eyes with 3” diameter holes attached directly to the chassis frame, accessible above the front bumper.

TOW EYES, PAINTED FINISH

The front tow eyes shall be painted to match the color of the chassis frame.

REAR TOW EYES

There shall be two tow eyes attached directly to the chassis frame rail and shall be chromate acid etched for superior corrosion resistance and painted to match the chassis.

STEERING

The steering system shall be a TRW wheel to wheel steering system that is tested and certified by TRW, consisting of a heavy duty TRW/Ross Model TAS-85 power steering gear, TRW PS36 steering pump, miter box, drag links, and a thermostatic controlled fan cooled system (set point 185 deg. F to 170 deg. F). The steering gear shall be bolted to the frame at the cross-member for steering linkage rigidity. Four (4) turns from lock to lock with an 18" diameter slip resistant rubber covered steering wheel. Steering column shall have six-position tilt and 2" telescopic adjustment. The cramp angle shall be 45 degrees with 315mm tires or 43 degrees with 425mm tires providing very tight turning ability.

DRIVE LINE

The driveline shall consist of Spicer 1810 series dual grease fitting universal joints with "half-round" end yokes. The drive shaft shall be built with a heavy-duty steel tube 4.095" outside diameter x .180 wall thickness. The shafts shall be dynamically balanced prior to installation into the chassis. A splined slip joint shall be provided in each shaft assembly. Universal joints shall be extended life. There shall be two (2) Zerk fittings in each universal joint assembly so the joint can be greased without turning the shaft.

ENGINE

The apparatus shall be powered by a Cummins Diesel X 12 500 HP @ 1800 R.P.M., 1695 ft. lb. torque @ 1000 R.P.M.

Displacement:	11.8 liter displacement.
Cylinders:	6
Bore:	5.2” (132mm)
Stroke:	5.67” (144mm)

AIR COMPRESSOR

The air compressor shall be an 18.7 CFM engine driven Wabco.

STARTER

A 12-volt starter shall be provided, controlled by a switch on the left lower cab dash.

EXHAUST SYSTEM

The engine exhaust system shall include the following components:
Diesel Particulate Filter (DPF)
Diesel Oxidation Catalyst (DOC)
Diesel Exhaust Fluid (DEF)
Selective Catalytic Reduction Filter (SCR)

The SCR catalyst utilizes the DEF fluid, which consists of urea and purified water, to convert NOx into nitrogen and water. This shall meet or exceed 2017 EPA emissions requirements.

The engine exhaust system shall be horizontal design constructed from heavy-duty truck components. The exhaust tubing shall be stainless steel to the DPF through to the SCR, aluminized steel from the SCR to the exhaust tip. A heavy duty stainless steel bellows tube shall be used to isolate the exhaust system from the engine. The system shall be equipped with single canister consisting of a Diesel Oxidation Catalyst (DOC) and a Diesel Particulate Filter (DPF), and shall be mounted under the right side frame rail, meeting the specific engine manufacturer's specifications and current emission level requirements. The outlet shall be directed to the forward side of the rear wheels, exiting the right side with a heavy duty heat diffuser. The heat diffuser shall prevent the exhaust temperature from exceeding 851 deg. F during a regeneration cycle. A heat-absorbing sleeve shall be provided on the exhaust pipe in the engine compartment area to reduce the heat, protect the alternator, and also to protect personnel while servicing the engine compartment.

AFTER TREATMENT SYSTEM

To meet EPA requirements of Particulate output, a DPF (Diesel Particulate Filter) is used. To meet EPA requirements of Nitrous Oxide output an SCR (Selective Catalytic Reduction) system utilizing DEF (Diesel Exhaust Fluid) is used.

ON-BOARD DIAGNOSTIC (OBD) SYSTEM

The engine shall be equipped with an on-board diagnostic (OBD) system which shall monitor emissions-related engine systems and components and alert the operator of any malfunctions. The OBD system is designed to further enhance the engine and operating system by providing early detection of emission-related faults. The engine control unit (ECU) will manage smart sensors located throughout the engine and after-treatment system. The system shall monitor component verification and sensor operation. There shall be warning lights located in the dash instrument panel to alert the operator of a malfunction. A data port shall be provided under the driver’s side dash for the purpose of code reading and troubleshooting. All communication shall be provided through the J1939 data link.

ENGINE WARRANTY

The engine shall have a ten (10) year or 200,000 mile warranty and approval by Cummins Diesel for Registered Major Components Coverage (FCM), which covers major castings and forgings. There shall be no deductible for the first two years. A one hundred dollar deductible shall apply for service beginning the third year.

AIR CLEANER/INTAKE

The engine air intake and filter shall be designed in accordance with the engine manufacturer's recommendations. It shall be 99.9% effective in removing airborne contaminants when tested per the industry standard SAE J726 procedure and offer a dirt holding capacity of at least 3.0 gm/cfm of fine dust (tested per SAE J726) offering superior engine protection.

The air filter shall be located at the front of the apparatus and shall be at least 66" above the ground, to allow fording deep water in an emergency situation.

An ember separator shall be provided in the engine air intake meeting, the requirements of NFPA 1901.

An Air Restriction warning light shall be provided and located on the cab dash.

PRIMARY FUEL FILTER/WATER SEPARATOR

A Cummins approved Fleetguard Fuel Pro FH230 fuel filter/water separator shall be remote mounted to the chassis frame rail.

12VDC HEATER

A 12V DC heater shall be provided for the Fleetguard Fuel Pro FH230 fuel filter/water separator.

SECONDARY FUEL FILTER

A Cummins approved Fleetguard FF5776 fuel filter will be mounted on the driver's side of the engine.

TRANSMISSION

The chassis shall be equipped with a Generation 5 Allison EVS4000R six (6) speed automatic transmission. It shall be programmed five (5) speed, sixth gear locked out, for fire apparatus vocation, in concert with the specified engine.

The transmission is communicated on the J-1939 through the communication port. The fifth gear shall be an overdrive ratio, permitting the vehicle to reach its top speed at the engine's governed speed. The dipstick is dipped in a rubber coating for ease in checking oil level when hot.

The chassis to transmission wiring harness shall utilize Metri-Pack 280 connectors with triple lip silicone seals and clip-type positive seal connections to protect electrical connections from contamination without the use of coatings.

Ratings: Max Input (HP) 600
Max Input (Torque) 1850 (lb ft)
Max Turbine (Torque) 2600 (lb ft)

Mechanical Ratios: 1st - 3.51:1
2nd - 1.91:1
3rd - 1.43:1
4th - 1.00:1
5th - 0.74:1
Reverse - -5.00:1

TRANSMISSION RETARDER

The transmission shall be equipped with a retarder. Depressing the service brake foot valve when the enable switch is in the “On” position shall activate the retarder. A backlit "Retarder Enabled" rocker switch, a "Retarder Overheat" warning light shall be included and mounted on the instrument panel. Retarder activation is 1/3 at throttle idle position, 2/3 at 5 - 8 psi brake application pressure, and 100% at 10 - 12 psi brake application pressure. A secondary external oil cooler, of 5,000 BTU heat rejection, frame mounted, shall be provided.

TRANSMISSION FLUID

The transmission shall come filled with an Allison approved Synthetic Transmission Fluid that meets the Allison TES-295 specification.

JACOBS ENGINE BRAKE

The engine shall be equipped with a Jacobs compression engine brake. An “On/Off” switch and a control for “Low/High” shall be provided on the instrument panel within easy reach of the driver.

The engine brake shall interface with the Wabco ABS brake controller to prevent engine brake operations during adverse braking conditions.

A pump shift interlock circuit shall be provided to prevent the engine brake from activating during pumping operations.

The brake light shall activate when the engine brake is engaged.

The Jake shall engage at 2nd Gear in lieu of 3rd.

TRANSMISSION COOLER

The apparatus transmission shall be equipped with a Liquid-To-Liquid remote mounted cooler with aluminum internal components. The cooler shall be encased in an aluminum housing and mounted to the outside of the officer’s side frame rail for accessibility and ease of service.

TRANSMISSION SHIFTER

An Allison "Touch Pad" shift selector shall be mounted to the right of the driver on the engine cover accessible to the driver. The shift position indicator shall be indirectly lit for nighttime operation.

COOLING SYSTEM

The cooling system shall be designed to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the engine and transmission manufacturer’s requirements, and EPA regulations.

The complete cooling system shall be mounted in a manner to isolate the system from vibration and stress. The individual cores shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress to the adjoining core(s).

The cooling system shall be comprised of a charge air cooler to radiator serial flow package that provides the maximum cooling capacity for the specified engine as well as serviceability. The main components shall

include a surge tank, a charge air cooler, bolted to the top of the radiator to maximize cooling, recirculation shields, a shroud, a fan, and required tubing. All components shall consist of an individually sealed system.

RADIATOR

The radiator shall be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator shall be bolted to the bottom of the charge air cooler to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

The radiator shall be equipped with a drain cock to drain the coolant for serviceability. The drain cock shall be located at the lowest point of the aluminum cooling system to maximize draining of the system.

CHARGE AIR COOLER

The charge air cooler shall be of a cross-flow design and constructed completely of aluminum with extruded tanks. The charge air cooler shall be bolted to the top of the radiator to allow a single depth core.

COOLANT

The cooling system shall be filled with a 50/50 mix. The coolant makeup shall contain ethylene glycol and de-ionized water to prevent the coolant from freezing to a temperature of –34 degrees F.

HOSES & CLAMPS

Silicone hoses shall be provided for all engine coolant lines.

All radiator hose clamps shall be spring loaded stainless steel constant torque hose clamps for all main hose connections to prevent leaks. Recirculation shields shall be installed where required to prevent heated air from reentering the cooling package and affecting performance.

FAN

The engine cooling system shall incorporate a heavy-duty composite 11- blade Z-series fan. It shall provide the highest cooling efficiently while producing the lowest amount of noise. This robust yet light-weight fan results in less wear and stress on motors and bearings.

A shroud and recirculation shield system shall be used to ensure air that has passed through the radiator is not drawn through again.

The fan tip to radiator core clearance shall be kept at a minimal distance to increase the efficiency of the fan and reduce fan blast noise.

FAN CLUTCH

A fan clutch shall be provided that shall allow the cooling fan to operate only when needed. The fan shall remain continuously activated when the truck is placed in pump gear.

SURGE TANK

The cooling system shall be equipped with an aluminum surge tank mounted to the officer's side of the cooling system core. The surge tank shall house a low coolant probe and sight glass to monitor the coolant level. Low coolant shall be alarmed with the check engine light. The surge tank shall be equipped with a dual seal cap that meets the engine manufacturer's pressure requirements, and system design requirements.

The tank shall allow for expansion and to remove entrained air from the system. There shall also be an extended fill neck to prevent system overfill and encroachment of expansion air space. Baffling shall be installed in the tank to prevent agitated coolant from being drawn into the engine cooling system.

FUEL TANK

The chassis shall be equipped with a 65-gallon rear mounted, behind the rear axle, rectangular fuel tank that shall be constructed of steel. The fuel tank shall be certified to meet FMVSS 393.67 tests. It shall also maintain engine manufacturer's recommended expansion room of 5%.
There shall be two (2) tank baffles.
Dual pick-up and return ports shall be provided for diesel generators if required.
The fuel lines shall be nylon braid reinforced fuel hose with brass fittings. The lines shall be carefully routed along the inside of the frame rails. All fuel lines are covered in high temperature rated split plastic loom. Single suction and return fuel lines shall be provided.
The bottom of the fuel tank shall contain a 1/2" drain plug.

DUAL FUEL FILLS

The fuel tank shall be equipped with two (2) 2-1/4" filler neck assemblies with a 3/4" vent, one located on the driver's side and one on the officer's side of the truck. A fuel fill cap attached with a lanyard shall be provided for each fill.

FUEL COOLER

Installed on the apparatus fuel system shall be an Air-To-Liquid aluminum fuel cooler. The fuel cooler shall be located in the lowest module of the cooling system.

DIESEL EXHAUST FLUID TANK

The exhaust system shall include a molded cross linked polyethylene tank. The tank shall have a capacity of 5 usable gallons and shall be mounted on the left side of the chassis frame.
The DEF tank fill neck shall accept only a 19mm dispensing nozzle versus the standard 22mm diesel fuel dispensing nozzle to prevent cross contamination. The DEF tank cap shall be blue in color to further prevent cross contamination.

A placard shall accompany fill location noting DEF specifications.

120V MANUAL SHORELINE INLET

The apparatus shall be equipped with a Hubbell #HBL61CM64 120V 15 amp manual shoreline inlet with gray cover to provide power to the battery charger from an external source.

A 15 amp connector shall be provided and shipped loose for connecting the external shoreline cord to the inlet.

ALTERNATOR

A 320 ampere Prestolite/Leece Neville alternator with serpentine belt shall be provided The alternator shall generate 260 amperes at idle.

120-VOLT OUTLET WIRED TO SHORELINE INLET

Three (3) 120-volt outlets shall be provided and wired to the shoreline inlet. The location of the outlet shall be determined during the pre-construction conference.

LOW VOLTAGE ALARM

A Floyd Bell TXB-V88-515-QF low voltage alarm, audible and visual, shall be provided.

BATTERIES (OPTIMA)

The battery system shall be a single system consisting of four (4) negative ground, 12 volt Optima Model D31T "Yellow Top", 900CCA batteries. The batteries shall include a one-year warranty which shall be accepted nationwide.
The batteries shall be installed in a vented 304 stainless steel battery box with a removable aluminum cover to protect the batteries from road dirt and moisture. The battery cover shall be secured with four “T” handle rubber hold downs to provide easy access for maintenance and inspection. Stainless steel hardware will be used for installation. The batteries are to be placed on dri-deck and secured with a fiberglass hold down.
The batteries shall be wired directly to starter motor and alternator.
The battery cables shall be 3/0 gauge. Battery cable terminals shall be soldering dipped, color-coded and labeled on heat shrink tubing with a color-coded rubber boot protecting the terminals from corrosion.
There shall be a 350-ampere fuse protecting the pump primer and a 250-ampere fuse protecting the electric cab tilt pump and other options as required.

MASTER BATTERY DISCONNECT SWITCH

A master battery disconnect switch shall be installed under the driver’s seat. The switch shall be installed on the vertical face of the seat riser so it is visible when the cab door is opened.

BATTERY JUMPER TERMINAL

There shall be one set (two studs) of battery jumper terminals located by the battery box under the cab. The terminals shall have plastic color-coded covers. Each terminal shall be tagged to indicate positive/negative.

BATTERY CHARGER

A Kussmaul Auto Charge LPC 40 model #091-200-12-IND low profile 40 amp battery charger shall be provided and installed in the cab. The unit shall include an auxiliary 15 amp output circuit with power source selector for operating accessory loads. The charger shall be wired to the 120V shoreline inlet.
The charger shall include a Model #091-200-IND remote bar graph display.

BATTERY CHARGE INDICATOR

There will be a Kussmaul, Model 091-94-12, battery charge indicator installed DS behind cab door. The indicator shall be wired directly to the batteries and hot all the time to consistently show the status of the batteries.

FRONT AXLE

A Hendrickson STEERTEK NXT non-driving, front steer axle with a capacity of 23,000 pound shall be provided. The axle shall have a 3.74" drop and will have a fabricated boxed shaped cross section, a one piece knuckle, and serviceable king pin. Adjustable Ackerman settings shall be available, and determine based on wheelbase. The axle shall have 10 bolt hub piloted, and furnished with oil seals.

SUSPENSION (FRONT)

The front suspension shall be a parabolic taper-leaf spring design, 56" long and 4" wide. Long life, maintenance free, threaded pin bushings in spring shackles shall be utilized. All spring and suspension mounting shall be attached directly to frame with high strength Huck bolts and self-locking round collars. Progressive rate bump stop and custom tuned passive hydraulic damper shall be supplied. NO EXCEPTIONS.

FRONT SUSPENSION LOCKING CYLINDERS

Two (2) hydraulic suspension-locking cylinders shall be provided. The cylinders shall be mounted to the chassis frame rails directly above the front axle. The cylinders shall be manually operated from the outrigger control station.

FRONT SUSPENSION LOCKOUT PLATE

The front suspension shall be provded with a lockout plate that limits the travel of the front suspension when the front suspension jack has been engaged.

STEER ASSIST

The steer assist provides driver assistance when turning the vehilce left or right while traveling.

FRONT TIRES

Front tires shall be Goodyear 425/65R22.5, load range L, G296 highway tread, single tubeless type with a GAWR up to 24,000 pounds. The rating shall be achieved with the Fire Service Intermittent Service Rating. Wheels shall be disc type, hub piloted, 22.5 x 12.25 10 stud 11.25 bolt circle.

REAR AXLE

The rear axle shall be a Meritor™ RT-50-180 Tandem drive axle with a capacity of 52,000 lbs. The axles shall be hub piloted, 10 studs, furnished with oil seals.

INTER-AXLE DIFFERENTIAL LOCK

A locking inter-axle differential shall be provided between the two rear axles. An activation switch shall be provided on the driver's dash.

SUSPENSION (REAR)

52,000 TANDEM AIR RIDE
The rear suspension shall be a Raydan Manufacturing, Air Link™ model 952-52-199 air ride suspension. This suspension shall incorporate a quad air spring system. The air suspension bags shall have internal rubber stops giving the ability to operate without air if the need arises. Heavy-duty shock absorbers shall be provided, inboard mounted, to dampen load forces, reduce tire hops, and improve stopping. Torque rods shall be incorporated to restrict lateral movement of the differentials and to reduce bushing and tire wear. Dual height control valves shall be provided to maintain even, balanced loads. Suspension shall have a ground rating of 52,000 pounds.

REAR TIRES

Rear tires shall be Goodyear 12R22.5, load range H, Endurance RSA highway tread, dual tubeless type with a GAWR up to 52,000 pounds. Wheels shall be disc type, hub piloted, 22.5 x 8.25 10 stud with 11.25" bolt circle.

TIRE PRESSURE MONITOR

A Quick Pressure mechanical tire pressure sensor/indicator shall be provided for each wheel. The pressure sensor shall indicate if the tire is properly inflated. Each indicator shall have a green & red display visible inside a sight glass on the sensor. Full green indicates that the pressure is correct. Partial green/red indicates that the tire is under inflated by as little as 10%. Full red indicates that the tire is under inflated by 25% or more. The indicators shall replace the standard valve stem caps. A total of ten (10) indicators shall be provided.

WHEELS

The front and rear wheels shall be ALCOA® brand aluminum. DURA-BRIGHT® finish shall be provided on front and outside-rear wheels.

The same finish shall be provided on the inside-rear wheels.

HUB COVERS

Polished stainless steel hub covers shall be provided for the front and rear axle.

LUG NUT CAPS, STAINLESS STEEL

Stainless Steel in lieu of plastic lug nut caps shall be provided for the front and rear wheels.

FRONT MUD FLAPS

Hard rubber mud flaps shall be provided for front tires.

REAR MUD FLAPS

Hard rubber mud flaps shall be provided for rear tires.

SPARE TIRE

A spare Goodyear 12R22.5, G159 highway tread, dual tubeless type tire shall be provided.

SPARE TIRE

A spare Goodyear 425/65R22.5, G-286 highway tread, dual tubeless type tire shall be provided.

SPARE WHEEL

A spare Alcoa brand aluminum wheel, 10 bolt, hub piloted 22.5 x 8.25, shall be provided.

SPARE WHEEL

A spare Alcoa brand aluminum wheel, 10 bolt, hub piloted 22.5 x 12.25, shall be provided.

The spare tire shall be mounted to the spare wheel.

AIR DISC BRAKES

The apparatus shall be equipped with Arvin Meritor DiscPlus EX225 Air Disc Brakes. Each disc brake assembly shall include one (1) 17” vented rotor, one (1) lightweight hub, one (1) twin-piston caliper, and two (2) quick-change pads.

PARKING BRAKE GUARD

A guard shall be provided over the parking brake knob.

PARKING BRAKE

A four-wheel parking brake system shall be provided.

AIR BRAKE SYSTEM

The vehicle shall be equipped with air-operated brakes. The system shall meet or exceed the design and performance requirements of current FMVSS-121 and test requirements of current NFPA 1901 standards.

Each wheel shall have a separate brake chamber. A dual treadle valve shall split the braking power between the front and rear systems.

All main brake lines shall be color-coded nylon type protected in high temperature rated split plastic loom. The brake hoses from frame to axle shall have spring guards on both ends to prevent wear and crimping as they move with the suspension. All fittings for brake system plumbing shall be brass.

A Meritor Wabco System Saver 1200 air dryer shall be provided.

The air system shall be provided with a rapid build-up feature, designed to meet current NFPA 1901 requirements. The system shall be designed so the vehicle can be moved within 60 seconds of startup. The quick build up system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the 60-second buildup time. The vehicle shall not be required to have a separate on-board electrical air compressor or shoreline hookup to meet this requirement.

Six (6) supply tanks shall be provided. One air reservoir shall serve as a wet tank and a minimum of one tank shall be supplied for each the front and rear axles. A Schrader fill valve shall be mounted in the front of the driver's step well.

A spring actuated air release emergency/parking brake shall be provided on the rear axle. One (1) parking brake control shall be provided and located on the engine hood next to the transmission shifter within easy reach of the driver. The parking brake shall automatically apply at 35 ±10 PSI reservoir pressure. A Meritor WABCO IR-2 Inversion Relay Valve, supplied by both the Primary and Secondary air systems, shall be used to activate the parking brake and to provide parking brake modulation in the event of a primary air system failure.

Accessories plumbed from the air system shall go through a pressure protection valve and to a manifold so that if accessories fail they shall not interfere with the air brake system.

CENTRAL LOCATION FOR AIR TANK DRAINS

The air brake system shall have all the air tank drain valves located in a customer specified location on the apparatus.

AIR OUTLET

One (1) air chuck shall be provided at a customer specified location. The system shall tie into the wet tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

Note: Purchaser to specify type of hose fitting.

AIR INLET

An air system inlet/fill connection shall be provided. The inlet shall be connected to the air brake to allow constant air feed. The location of the inlet shall be on the left hand side of the driver's step well.

AIR BRAKING ABS SYSTEM

A Wabco ABS system shall be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system shall be fitted to axles and all electrical connections shall be environmentally sealed from water and weather and be vibration resistant.

The system shall constantly monitor wheel behavior during braking. Sensors on each wheel transmit wheel speed data to an electronic processor, which shall sense approaching wheel lock and instantly modulate brake pressure up to 5 times per second to prevent wheel lock-up. Each wheel shall be individually controlled. To improve field performance, the system shall be equipped with a dual circuit design. The system circuits shall be configured in a diagonal pattern. Should a malfunction occur, that circuit shall revert to normal braking action. A warning light at the driver's instrument panel shall indicate malfunction to the operator.

The system shall consist of a sensor clip, sensor, electronic control unit and solenoid control valve. The sensor clip shall hold the sensor in close proximity to the tooth wheel. An inductive sensor consisting of a permanent magnet with a round pole pin and coil shall produce an alternating current with a frequency proportional to wheel speed. The unit shall be sealed, corrosion-resistant and protected from electro-magnetic interference. The electronic control unit shall monitor the speed of each wheel sensor and a microcomputer shall evaluate in wheel slip in milliseconds.

AUTOMATIC SLIP RESPONSE

The Rockwell/Wabco 4 Channel Anti-lock braking system shall be provided with six (6) sensors. The system shall be supplied with (ASR) Automatic slip response. The ASR controls slip under acceleration.

AUTOMATIC TIRE CHAIN SYSTEM, SEVERE DUTY

The apparatus shall be equipped with an On-Spot brand Automatic Tire Chain System.

There will be one driver's side and one passenger's side chain unit.

A continuous duty solenoid shall be provided and activated by the dashboard switch, which opens and allows compressed air to flow to the chain units. Compressed air will be delivered to the solenoid from the vehicle's air tank. The solenoid shall be mounted on the frame rail or crossmember in close proximity of the chain units. This air/electric solenoid shall be 12-volts and draw no more than 1 ampere of current. Electrical wire shall be in accordance with NFPA 1901.

A 12-volt dashboard switch shall be provided so that the operator may engage the chains from the driver's seat. The switch shall be lighted to indicate when the chains are engaged. The switch shall come complete with a switch guard to avoid accidental engagement of the automatic chains. The switch guard shall be properly labeled. A dashboard sticker with operating instructions shall be provided.

COMPRESSION FITTINGS ON AIR SYSTEM

All air line fittings installed on the chassis shall be compression style fittings.
The following locations shall utilize push-on fittings:

- Pressure protection valve (accessory block)
- Double check valve (braking system, park brake)
- One way check valve (brake valve tank)
- Elbow Male Modified 1/4" tube x 1/4" MP (low air switch)
- Elbow Male 1/4" tube x 3/8"MP (brake pedal solenoid)
- Connector 1/4" x 3/8"MPT (brake pedal solenoid)
- Switch stoplight (Wabco sealed switch/brake light and service brake switch)
- Low pressure switch (PTC) (Wabco sealed switch/low air switch)

MISCELLANEOUS CHASSIS EQUIPMENT

Fluid capacity plate affixed below driver's seat.
Chassis filter part number plate affixed below driver's seat.
Maximum rated tire speed plaque near driver.
Tire pressure label near each wheel location.
Cab occupancy capacity label affixed next to transmission shifter.
Do not wear helmet while riding plaque for each seating position.
NFPA compliant seat belt and standing warning plates provided.

FUEL CAP, PROTECT-O-SEAL

A Protectoseal® fuel cap shall be provided. Cap includes a perforated metal flash arrester that protects fuel from fire and explosion while filling and when apparatus is in operation. The flash arrester acts as a strainer to prevent impurities from entering the tank.
A total of two (2) shall be provided.

ALUMINUM CAB

The cab shall be a full tilt 8-person 10" rear raised roof cab designed specifically for the fire service and manufactured by the chassis builder. Rear of the cab shall be slanted forward at the top rear for mid-ship aerial use. The outside of the rear cab wall shall be aluminum diamond plate.

Apparatus cabs that are not manufactured by the apparatus manufacturer shall not be acceptable.

CAB DESIGN

The apparatus chassis shall be of an engine forward, fully enclosed tilt cab design. There shall be four (4) side entry doors.

The cab shall be of a fully open design with no divider wall or window separating the front and rear cab sections. The cab shall be designed in a manner that allows for the optimum forward facing vision for crew. Cab designs that utilize roof mounted air conditioning units, are not desired.

The cab shall be constructed of high strength 5052H32 aluminum plate welded to 6061-T6 extruded aluminum framing.

The cab roof shall utilize 5” x 5” honeycomb re-enforced 6061 T6 aluminum extrusion, with fully radiused outer corner rails with integral drip channel and 6061 T6 ¾” x 2” x 3/16” aluminum box tubing type cross brace supports. Structures that do not include an integral drip channel will not be accepted. The box tubing

type cross brace supports shall be installed in a curved fashion beginning from the midline of the apparatus cab and curving toward the exterior corner rails. This curvature will allow for increased strength in the event of a roll over while not allowing for rainwater buildup on the apparatus cab roof.

The cab sides shall be constructed from 1 ½" x 3" x 3/16" 6061 T6 extruded door pillars and posts that provide a finished door opening, extruded and formed wheel well openings supports, formed aluminum wheel well liners and box tubing type support braces.

The cab floor and rear cab wall shall utilize 1 ¾" x 4" x 3/16" 6061 T6 extruded box tubing type framing and support bracing.

The framework shall be of a welded construction that fully unitizes the structural frame of the cab.

The structural extrusion framework shall be overlaid with interlocked aluminum alloy sheet metal panels to form the exterior skin of the cab. The cab sides shall be constructed of 3/16" thick 5052H32 aluminum plate that slides into an integral channel of the extrusion framework. The plate is then skip welded into that channel to allow for tolerable flex while the apparatus travels down the roadway. Cab designs that utilize 1/8" thick aluminum for the cab sides shall not be acceptable.

The structural extrusion framework shall support and distribute the forces and stresses imposed by the chassis and cab loads and shall not rely on the sheet metal skin for any structural integrity.

The cab face extrusion framework shall be overlaid with 1/8" thick 5052H32 aluminum plate to allow for an aesthetically pleasing radiused cab face.

CAB SUB-FRAME

The cab shall be mounted to a 4" x 4" x 3/8" steel box tube sub-frame, and shall be isolated from the chassis, through the use of no less than six (6) elastomeric bushings. This substructure shall be completely independent of the apparatus cab. The sub frame shall be painted to match the primary chassis color.

The sub-frame shall be mounted to the chassis through the use of lubricated Kaiser Bushings for the front pivot point, and two (2) hydraulically activated cab latches, to secure the rear.

Cab mounting that does not include a sub-frame shall not be considered. NO EXCEPTIONS.

CAB DIMENSIONS

The cab shall be designed to satisfy the following minimum width and length dimensions:

Cab Width (excluding mirrors) 98"
Cab Length (from C/L of front axle)
To front of cab (excluding bumper) 70"
To rear of cab 73"
Total Cab Length (excluding bumper) 143"

ROOF DESIGN

The cab shall be of a one-half 10" raised roof design with side drip rails and shall satisfy the following minimum height dimensions:

Cab Dimensions Interior
Front 59"
Rear 65"

Cab Dimensions Exterior
Front 65"
Rear 75"

FENDER CROWNS

Polished stainless steel front axle fenderettes with full depth radiused wheel well liners shall be provided.

CAB INSULATION

The exterior walls, doors, and ceiling of the cab shall be insulated from the heat and cold, and to further reduce noise levels inside the cab. The cab interior sound levels shall not exceed 90 decibels at 45 mph in all cab seat positions. NO EXCEPTIONS

EXTERIOR GLASS

The cab windshield shall be of a two piece curved design utilizing tinted, laminated, automotive approved safety glass. The window shall be held in place by an extruded rubber molding. The cab shall be finished painted prior to the window installation.

SUN VISORS

The sun visors shall be made of dark smoke colored transparent polycarbonate. There shall be a visor located at both the driver and officer positions, recessed in a molded form for a flush finish.

CAB STRUCTURAL INTEGRITY

The cab of the apparatus shall be designed and so attached to the vehicle as to eliminate, to the greatest possible extent, the risk of injury to the occupants in the event of an accident.

The apparatus cab shall be tested to specific load and impact tests with regard to the protection of occupants of a commercial vehicle.

A test shall be conducted to evaluate the frontal impact strength of the apparatus cab to conform to the test J2420 and the "United Nations Regulation 29, Annex 3, paragraph 4, (Test A). A second test shall be conducted to evaluate the roof strength of the apparatus cab to conform to the Society Of Automotive Engineers (SAE) SAE J2422/SAE J2420 and "United Nations Regulation 29, Annex 3, paragraph 5, (Test B) and SAE J2420. The evaluation shall consist of the requirements imposed by ECE Regulation 29, Paragraph 5.

The test shall be conducted by a certified independent third party testing institution.

A letter stating successful completion of the above test on the brand of cab being supplied shall be included in the bid. There shall be "no exception" to this requirement.

SEAT BELT TESTING

The seat belt anchorage system shall be tested to meet FMVSS 207 Section 4.2a and FMVSS 210 section 4.2. Testing shall be conducted by an independent third party product evaluation company.

A copy of the certification letter shall be supplied with the bid documents.

CAB LOCKDOWN LATCHES

Cab lockdown latches shall be provided to prevent the cab from being tilted in the down position. Once the cab tilt switch is engaged the cab latches will release to allow the cab to be tilted.

CAB TILT SYSTEM

An electrically powered hydraulic cab tilt system shall be provided, and shall lift the cab to an angle of 45 degrees, exposing the engine and accessories for fluid checks and service work. The system shall be interlocked to only operate when the parking brake is set.

The lift system shall be comprised of two (2) hydraulic lift cylinders, an electrically driven hydraulic pump, and a control switch. The hydraulic pump shall be located on the exterior of the frame rail on the driver's side of the chassis that can be easily accessible when the cab is tilted. A mechanical locking system consisting of an air operated actuator and a heavy radiused wall 3" x 3" aluminum extrusion will be provided to ensure the cab remains in the raised position in the event of a hydraulic failure. Additionally, each of the hydraulic lift cylinders shall incorporate a check valve, and velocity fuses that will activate should a sudden drop in pressure by detected. The cab tilt controls shall be interlocked to the parking brake to ensure the cab will not move, unless the parking brake is set. The cab tilt controls will consist of a momentary raise/lower switch and a two position cab safety lock switch.

The hydraulic lift cylinders will be connected to a steel cab sub-frame, and not directly to the cab. NO EXCEPTIONS

MANUAL CAB LIFT

There shall be a manually operated hydraulic pump for tilting the cab in case the main pump should fail. Access to the pump shall be determined at the pre-construction conference.

BARRIER STYLE CAB DOORS

Barrier style cab doors shall be provided. The lower part of the door shall be removed to expose the cab entry step well.
The cab doorframes shall be constructed from 6061 T6 aluminum extrusions fitted with a 5052 H32 aluminum sheet metal skin and shall be equipped with dual weather seals. The outside cab door window opening shall be framed by a black anodized aluminum trim, to provide a clean appearance. The cab doors shall be equipped with heavy-duty door latching hardware, which complies with FMVSS 206. The door latch mechanism shall utilize control cable linkage for positive operation. A rubber coated nylon web doorstop shall be provided.
The doors shall be lap type with a 10 gauge full-length stainless steel flange and 3/8" diameter hinge pin and shall be fully adjustable.
All openings in the cab shall be grommeted or equipped with rubber boots to seal the cab from extraneous noise and moisture.
The cab doors shall be designed to satisfy the following minimum opening and step area dimensions:
Door Opening:

Front	36.5" x 73"
Rear	36.5" x 73"

STEP WELLS

The lower cab step wells shall be sprayed with a black Raptor urethane blend. The back and side walls of the step well shall also be lined with 1/8” aluminum treadplate.

CAB STEPS

The lower cab steps shall be no more than 22" from the ground. Grip strut material shall be installed on the stepping surface.

An intermediate step shall be provided, mid way between the lower cab step, and the cab floor. The intermediate step shall be slightly inset to provide for safer ingress and egress. Diamondplate material shall be installed on the stepping surface.

All steps shall be covered with material that meets or exceeds the NFPA requirements for stepping surfaces.

AUXILIARY CAB STEPS

There shall be one additional step under each cab door to assist with entrance and exit of the cab. The steps shall be constructed of aluminum with a grip strut stepping surface.

STEP LIGHTS

A white Amdor Lumabar H20 LED strip light shall illuminate each interior cab step. These lights shall illuminate whenever the battery switch is on and the cab door is opened.

POWER WINDOWS

All four cab entry doors shall have power windows. Each door shall be individually operated and the driver’s position shall have master control over all windows. All four windows shall roll down completely.

SIDE WINDOW

A fixed position side window shall be provided on the officer's side of the cab between the forward cab area and the crew cab area. The widow shall be approximately 20.5" high x 16.50" wide to provide maximum visibility. The side window shall be held in place by an extruded rubber molding with a chrome plated decorative locking bead.

WINDOW TINTING

The crew cab windows and doors, with the exception of the driver's and officer's doors, and the windshield, shall be tinted with deep "limo" tint. The tint shall be incorporated into the window glass with eight percent (8%) light transmittance. Film tinting shall not be acceptable.

WINDSHIELD WIPERS

Two (2) black anodized finish two speed synchronized electric windshield wiper system. Dual motors with positive parking. System includes large dual arm wipers with built in washer system. One (1) master control works the wiper, washer and intermittent wipe features. Washer bottle is a remote fill with a 4 quart capacity. Washer fill is located just inside of officer cab door.

MIRRORS

Two (2) Velvac West Cost Aero style main and convex mirrors shall be installed on each side of the vehicle.

MIRROR, BLIND SPOT, HEATED

One (1) Velvac 8" heated diameter exterior blind spot mirror assembly shall be provided and mounted on the brow of the cab, officer's side.

GRILLE

The front of the cab shall be equipped with a polished stainless steel grille with sufficient area to allow proper airflow into the cooling system and engine compartment. Plastic chrome plated grilles shall not be acceptable.

UPPER GRILLE LOGO

The upper grille shall have a laser cut flaming "S" logo in the upper portion of the grille. The cut out shall contain reflective material behind.

LOWER GRILLE

The front of the cab shall be equipped with a polished stainless steel lower grille The design shall allow proper airflow into the cooling system and engine compartment. Plastic chrome plated lower grille shall not be acceptable.

SEVERE DUTY INSULATION PACKAGE

In addition to the standard insulation package, there shall be another layer of thermal protection. There shall be thin aluminum panels overlaid on top of the insulation to secure the insulation from falling over time and to provide addtional thermal protection from the engine. The panels shall be costed with the same DTA coating as used through the rest of the under side of the cab.

RELOCATE MANUAL CAB TILT

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PAINTED STEEL BUMPER

There shall be a 12" high painted formed steel wrap-around (45 degree) bumper provided at the front of the apparatus. The bumper shall be mounted to a reinforcement plate constructed of 1/4" x 12" x 70" carbon steel. The frame rail extension shall be a reinforced four-sided boxed frame rail for superior safety protection. A gravel shield shall be provided, constructed of .188” aluminum diamond plate. The bumper extension shall be approximately 12".

BUMPER SIDES

The sides of the bumper shall also be painted steel in lieu of diamond plate. Each side shall feature a recessed painted steel pocket for the marker light and any auxiliarly lighting option selected. The pocket shall be a welded integral part of the bumper skin.

RECEIVER (Front)

A 2" receiver shall be provided and mounted directly to the apparatus chassis. The receiver shall be 2" x 2" heavy wall tube and solidly re-enforced. The receiver shall be rated with a maximum capacity of 5,000 lbs. The receiver shall be designed for a 2-1 straight pull capacity (10,000lbs).

The front bumper shall be notched for the receiver so that the receiver DOES NOT impede the angle of approach of the vehcile. More details to be discussed at the pre-construction conference.

WIRING

Sufficient power shall be provided at the FRONT receiver for the intent of powering a Warn winch.

AIR HORNS

Two (2) Grover 1510 round, chrome plated, air horns shall provided.

AIR HORN BUMPER CUT-OUTS

The air horns shall be installed thru the front bumper.

AIR HORNS WIRED TO STEERING WHEEL

The air horns shall be wired through the steering wheel button. A selector switch shall be provided on the instrument panel to switch between functions.

LANYARD CONTROL FOR AIR HORNS

The air horns shall be activated by a single paracord cable located in the center of the cab ceiling.

ELECTRONIC SIREN

One (1) Whelen 295HFSA7 electronic siren shall be installed at the cab instrument panel complete with noise canceling removable microphone. The remote control head shall be flush mounted in a location specified by the fire department.

SIREN SPEAKERS

Two (2) Whelen SA314B 100 watt weatherproof aluminum siren speakers with black epoxy-coated finish shall be provided and wired to the electronic siren.

SPEAKER MOUNTING

The electronic siren speaker(s) shall be installed behind the main cab grille.

FEDERAL Q2B SIREN

There shall be a Federal Q2B-NN siren installed in the center of the cab grille. The siren shall be securely mounted and activated by means of a solenoid and shall include a brake.

FOOT SWITCH, DRIVER'S SIDE

A foot switch for the mechanical siren shall be provided on the driver's side.

FOOT SWITCH, OFFICER'S SIDE

A foot switch for the mechanical siren shall be provided on the officer's side.

CAB EXTERIOR LIGHTING

Exterior lighting and reflectors shall meet or exceed Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements.

HEADLIGHTS

The front low and high beam headlights shall be FIRETECH model FT-4X6 LED, rectangular shaped, quad style installed in custom rectangular shaped stainless steel housings on the front of the cab. Each housing shall accommodate a forward-facing turn signal in the outboard location and a side-facing warning light.

An additional pair of rectangular shaped stainless steel housings shall be installed on the front of the cab above the headlight housings. Each housing shall accommodate two (2) forward-facing warning lights and a side-facing turn signal.

ALTERNATING HEAD LAMP

The headlights shall have an alternating flash feature for emergency response use.

FRONT TURN SIGNALS

There shall be two Whelen 400 Series LED rectangular amber turn signal lights mounted one each side in the front of the headlight housing and one mounted on each side of the warning light housing.

CORNERING LIGHTS, RECESSED

Two (2) Whelen Model M6 LED cornering lights shall be mounted on the sides of the headlight housing, in a recessed pocket that angles the light forward, one each side. The lights shall come on steady with their coordinating turn signal.

EXTERIOR CAB HANDRAILS

There shall be two (2) 24" long, handrails provided and installed, at each front cab entrance. The handrails shall be constructed of type 304 stainless steel 1.25 inch diameter tubing with bright finish and knurled gripping surface. Mounting flanges shall be constructed from 7 gauge, .180 thick, stainless sheet. Each grab rail shall have 90 degree returns to flanges. The ends of grab rail shall pass through the flanges and be welded to form one structural unit. The handrails shall be mounted using 1.25" SS Hex bolts, with a barrier rubber gasket at each flange.

Sufficient space shall allow for a gloved hand to firmly grip the rail.

COAT HOOKS FOR GRAB HANDLES

There shall be a coat hook installed on the two front exterior cab handrails, for hanging of coats, turnout gear, etc.

HANDRAILS, FRONT OF CAB

There shall be a pair of knurled stainless steel handrails on the front face of the cab, below the windshields.

INTERIOR CAB HANDRAILS

There shall be two (2) rubber coated grab handles provided and mounted on the interior of the cab, one each side, on the windshield post for ingress assistance. The handrail on the driver's side shall be approximately 11" long and the handrail on the officer's side shall be approximately 18" long.

INTERIOR CAB HANDRAILS

There shall be two (2) rubber coated grab handles provided and mounted one each side on the interior of the rear crew cab area for ingress assistance. The handrails shall be approximately 11" long.

CAB DOOR HANDRAILS

There shall be two (2) rubber coated grab handles provided and mounted, one on the inside of each rear crew door, just below the windowsill. The handrails shall be approximately 11" long.

There shall also be two (2) 1.25" diameter knurled stainless steel handrails shall be provided and mounted, one on the inside of each rear crew door, just above the windowsill. The handrails shall be approximately 22" long.

CAB REAR WALL COVERING

The rear outside wall of the cab shall be covered with 1/8" aluminum diamond plate.

DRIVER'S SIDE CAB COMPARTMENT

There shall be a cabinet constructed of .125 aluminum plate recessed in the cab behind driver's side rear crew door. The compartment shall be approximately 66" high x 15" wide x 22.25" deep.

The compartment shall have a hinged door that is hinged at the front. The doors shall have an Austin Hardware slam catch single-point "D"-ring door closure and held open with gas struts.

The compartment shall be operated by an individual switch and illuminated with (1) LED light.

OFFICER'S SIDE CAB COMPARTMENT

There shall be a cabinet constructed of .125 aluminum plate recessed in the cab behind officer's side rear crew door. The compartment shall be approximately 66" high x 15" wide x 20.25" deep (12.75" deep if front suction)

The compartment shall have a hinged door that is hinged at the front. The doors shall have an Austin Hardware slam catch single-point "D"-ring door closure and held open with gas struts.

The compartment shall be operated by an individual switch and illuminated with (1) LED light.

DIAMOND PLATE, CAB ROOF

The rear exterior section roof of the cab shall have a diamond plate overlay. The overlay shall be constructed of .125” aluminum embossed diamond plate and measure 56” x 91”.

The interior back wall of the cab and the side walls near the forward-facing crew seats shall be covered with 3/16” smooth aluminum.

CAB INTERIOR

The metal surfaces of the cab interior shall be coated and sealed with MultiSpec black speckle, urethane modified, mar resistant paint. The textured coating shall provide paramount durability and wear resistance against foreign objects and normal wear and tear.

The front and rear headliners, as well as the rear cab wall, shall be finished in black Embossed FRP board.

INTERIOR DOOR PANELS

The interior of the cab entry doors shall have a 304 brushed stainless steel scuff plate, contoured to the door, from the door window sill down.

REFLECTIVE MATERIAL, 4" STRIPE, INTERIOR CAB DOORS

The apparatus shall have a 4" reflective 3M Scotchlite stripe affixed to the inside of each cab door. The striping shall be plainly visible to oncoming traffic when the doors are in the open position.

CAB FLOOR COVERING

The cab interior floor shall be covered with a 5/16” thick, black rubberized material to provide a rugged but cosmetically pleasing stepping surface throughout the cab. The floor covering shall provide superior durability and resistance against foreign objects as well as normal wear and tear.

DIAMOND PLATE, CAB FLOOR

The cab floor shall be covered with 1/8" embossed diamondplate.

ENGINE ENCLOSURE

An integral, formed aluminum and composite engine enclosure shall be provided. The engine enclosure shall be contoured and blended in an aesthetically pleasing manner with the interior dash and flooring of the cab. The enclosure shall be kept as low as possible, to maximize space and increase crew comfort.

The enclosure shall be constructed from 5052 H2 aluminum plate and GRP composite materials, providing high strength, low weight, and superior heat and sound deadening qualities.

Additionally, the underside of the engine enclosure shall be coated in with a ceramic spray on insulation and sound control. This coating is an environmentally-friendly coating that is applied seamlessly and rapidly while providing superior thermal insulation and protection against vibration and noise, and will prevent future corrosion from forming by sealing the substrate. NO EXCEPTIONS

ENGINE ENCLOSURE COVERING

The top of the engine enclosure shall be covered with Scorpion heavy duty, black polyurethane blended coating. The textured coating shall provide paramount durability and wear resistance against foreign objects and normal wear and tear as well as sound deadening and insulation. The rubberized cab floor covering shall extend up the lower exterior sides of the engine enclosure to aid in sound deadening and heat resistance.

CENTER CONSOLE

There shall be a storage console installed on the engine enclosure between the driver and officer. The console shall be constructed from smooth aluminum and shall be coated with the same finish as the engine enclosure. The console shall measure approximately 23” long X 11.375” wide X 8.125” high. The console shall have a 13” long storage area in the center that shall be divided into five (5) separate areas with four (4) fixed vertical dividers. The dividers shall be spaced 2.125” apart for map book storage. A Velcro strap shall be installed front to rear to secure the map books. Each outboard area of the console shall have one (1) stainless steel cup holder and one (1) approximately 5.5” long X 4.75” wide X 3.5” high open storage area.

ENGINE HOOD LIGHTS

An LED work light shall be installed in the engine enclosure with an individual switch located on the base of the light.

COMPUTER TRAY

There shall be a slide-out tray in front of the officer’s seat for a laptop computer or other use.

GLOVE BOX HOLDERS

A pair of glove box holders shall be provided in the upper cab crew door area, constructed of 3/16” smooth aluminum. Each glove box holder shall be capable of holding (2) glove boxes.

CHASSIS WIRING, MULTIPLEX

All chassis wiring shall have XL high temperature crosslink insulation. All wiring shall be color-coded, and the function and number stamped at 3" intervals on each wire. All wiring shall be covered with high

temperature rated split loom for easy access to wires when trouble shooting. All electrical connectors and main connectors throughout the chassis shall be treated to prevent corrosion.

All internal wire end terminals, including locking connectors, shall be mechanically affixed to the wire ends by matching terminal crimping presses to assure the highest quality terminations.

All internal splices shall be ultrasonically welded connections and all internal wiring shall be high temperature GXL type wire that is protected by wiring duct wherever possible.

MASTER ELECTRICAL PANEL

The chassis main electrical panel shall be wired through the master disconnect solenoid and controlled with a three-position ignition rocker switch. Multiplex nodes shall be located at officer's right side lower interior firewall with removable cover and schematic provided with notebook holder on outside cover.

MULTIPLEX ELECTRICAL SYSTEM

The apparatus shall be equipped with the V-MUX® Multiplex System, no substitutes accepted. The Manufacturer of the Multiplex system shall provide at a minimum three cities of reference; each city should have at least ten of the bid multiplex systems operation in ten vehicles for more than two years period.

The Multiplex system hardware that is being put into the apparatus of this bid should be field proven for a minimum of four years.

There are several key benefits to multiplexing, one is to reduce the number of connectors and splices in a vehicle's electrical system. To achieve this it is important to integrate many of the stand alone components and modules listed below into the node or nodes. Wherever it is stated that an "add-on" module will not be acceptable, there shall be no exceptions.

The Vehicle Manufacturer shall design from the ground up, the wiring harnesses needed to interface with the modules. Cut up or modification of existing hardwired harnesses is not expectable.

The grounds from each device should return to the main ground trunk in each sub harness by the use of ultrasonic splices. Terminal strips should be reduced as much as possible or eliminated, as each crimp is a weak point in the harness that may fail over time.

The multiplex network must be Peer to Peer. That is, no one module should hold the programming for other modules.

The definition of Peer to Peer for the purpose of this specification is that each module that controls a device shall holds it's own configuration program and be able to turn that device on, even if disconnected from the

network, if the interlocks are local. Inputs such as Emergency Master and Front Lightbar in the same node as the outputs for the lightbar will turn on the light bar even if disconnected from the network – Stand Alone.

Outputs:
The Node outputs shall perform all the following items without the use of add on modules.

1. Load Shedding: The System shall have the capability to Load Shed any output specified.
2. Load Sequencing: The System shall be able to sequence from 0 – 8 levels any output. Sequencing is used to prevent excusive voltage dips and spikes when the warning lights are turned on.
3. Output Device: The System shall have solid-state output devices. Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor - Field Effect Transistors); MOS-FET's are solid-state devices with no moving parts to wear out. A typical relay when loaded to spec has a life of 100,000 cycles. The life of a FET is more than 100 times that of a relay.
4. Flashing Outputs: The System shall be able to flash any output in any phases at several different flash rates.
5. PWM: The modules shall have the ability to PWM (Pulse Width Modulate) outputs. PWM can be used to for a DTRL option, without the use of an add on module.
6. Diagnostics: Outputs shall be able to detect either a short or open circuit. The System should be able report in "real time" a text based message that points the maintenance person to a specific output.

Inputs:

1. The inputs shall have the ability to switch by a ground or vbatt signal.
2. The inputs shall be filtered for noise suppression via hardware and software so that RF or dirty power will not trick an input into changing its status.

Automatic High Idle:
The Multiplex system shall be able to perform automatic high idle via a network gateway or by using an existing output on a module to provide the proper signals to an OEM Engine ECU. This task should be handled with existing inputs and outputs. The Multiplex system will monitor the voltage and turn the high idle on until the voltage set point is reached. The engine should remain at high idle for a period of time after the set point is reached.

Display Section:
Displays shall be able to provide real time information regarding Load Shedding and System Status, such as network traffic/errors or shorts and open circuits. The display used must meet all the requirements listed below. Test data must be made available upon request to prove the display will "operate" in the environmental parameters listed.

Flash card or other "Consumer" devices should be considered un-appropriate. They are not suitable for automotive applications, as they will not survive EDS, Transient voltages and extreme temperature conditions.

VISTA COLOR DISPLAY

One (1) Vista 3 color displays shall be installed. Located on the driver's side center dash.

An ergonomically designed center dash console shall be provided to house each Vista screen and other switches. The screens shall be mounted at a 45 deg. angle, to facilitate a better viewing angle.

The center dash shall be constructed from 1/8" aluminum plate and shall be painted with a zolatone paint finish to match the interior of the cab.

Dash consoles made from ABS plastic, or other less rugged materials are not desired and will not be accepted. NO EXCEPTION.

Size
The color display shall be at least 7 inches in diagonal measurement. And shall be mounted in the center dash area easily accessible for both the driver and the officer.

Aspect Ratio
The Display's aspect ratios shall be 16:9 (Wide Screen), the standard square 4:3 aspect ratio is not acceptable.

Virtual Switches
The Display shall be able turn on and off multiple devices around the vehicle; including all warning lights, scene lights and interior lights. Engage the pump, engine brake and more. The status of each device should be shown on the display in the form of a button. The text for the device will be inside each button on the screen. The display shall have the capability of having at least 80 virtual switches. The color of each virtual button shall change to reflect its status, eliminating the need for the words on/off or enable/disable.

Door and other Devices Ajar Indicator
The display shall have a graphical image to represent the apparatus; the image should resemble the apparatus. This image shall display the doors that are open and their locations. Ladder racks, telescopic lights and booms should also be represented.

Real Time Clock
The display shall have a real time clock and display the time.

Timer
The display shall have timer capabilities so that an EMT can use it for taking pulses or a Fire Truck Caption can retrieve pump hours or other times requested to be stored in the final order of the truck.

Virtual Gauges
The display will have the ability to display engine and vehicle information in a gauge format.

Temperature

Cold

The display shall startup and function normally within 2 minutes after being cold soaked at -40° Celsius for 30 minutes. This must be accomplished without the aide of power draining add-on heaters.

Hot

The display shall be able to function in +85° Celsius. If the displays contrast gets dark beyond the ability to be easily read in any day or night lighting, then the display should be considered unacceptable.

Electrical Environment

Reverse Polarity

The display shall not be damaged when its polarity is reversed with 24volts for one minute.

Transients

The display shall be able to withstand positive and negative going transients from 100 to 300 volts and all other tests outlined in SAE 1999 J1113/11

Electrostatic Discharge

The display shall not be damaged in any way when subjected to electrostatic discharge as outlined in SAE J1455 1999 4.11.2.2.5.1

Mechanical Performance

The display shall not be damaged and shall function normally after any of the environmental factors listed below are encountered

1. Temperature Cycle Test (SAE J1455 1999 4.1.3.1)
2. Thermal Shock (SAE J1455 1999 4.1.3.2)
3. Humidity (SAE J1455 1999 4.2.3 Figure 4a)
4. Mechanical Vibration (SAE J1399)

System Network:

The Multiplex system shall contain a Peer-to-Peer network. A Master Slave Type network is not suitable for the Fire/Rescue industry. A Peer-to-Peer network means that all the modules are equal on the network; a Master is not needed to tell other nodes when to talk.

System Reliability:

The Multiplex system shall be able to perform in extreme temperature conditions, from –40° to +85° C (-40° to +185° F.) The system shall be sealed against the environment, moisture, humidity, salt or fluids such as diesel fuel, motor oil or brake fluid. The enclosures shall be rugged to withstand being mounted in various locations or compartments around the vehicle. The modules shall be protected from over voltage and reverse polarity.

INSTRUMENT PANEL

The main dash shroud, which covers the area directly in front of the driver from the doorpost to the engine hood, shall be constructed of vacuum formed ABS material with scorpion texture. The dash shall be a one-piece hinged panel that tilts outward for easy access to service the internal components. The gauge panel shall be constructed with a .125" aluminum panel, covered with a scratch resistant reverse printed and laminated poly carbonite.

The gauges shall be AMETEK Vehicular Instrumentation Systems (VIS), Next Generation Instrumentation System (NGI) with built-in self-diagnostics and red warning lights to alert the driver of any problems. All gauges and controls shall be backlit for night vision and identified for function. All main gauges and warning lights shall be visible to the driver through the steering wheel.

MASTER BATTERY & IGNITION SWITCH

The vehicle shall be equipped with a keyless ignition, with a three (3)-position Master Battery rocker switch, "Off/ACC/On" and a two (2)-position Engine Start rocker switch, "Off/Start".

DIESEL PARTICULATE FILTER CONTROLS

There shall be two (2) controls for the diesel particulate filter. One control shall be for regeneration and one control shall be to inhibit engine regeneration. These shall be located below the steering wheel in the kick panel.

INSTRUMENTATION & CONTROLS

Instrumentation on dash panel:

Tachometer/hourmeter with built in high exhaust system regeneration temperature, and instrument malfunction indicators

Speedometer/odometer with built in turn signal, high beam and re-settable trip odometer

Voltmeter

Diesel fuel gauge

DEF (Diesel Exhaust Fluid) gauge

Engine oil pressure

Transmission temperature

Engine temperature

Primary air pressure

Secondary air pressure

Indicators and warning lights in front of the driver:

- Parking brake engaged
- Low air with buzzer
- Antilock brake warning
- Check transmission
- Transmission temperature
- Upper power indicator
- Seat belt
- Engine temperature
- Low oil indicator
- Low voltage indicator
- Air filter restriction light
- Low coolant indicator
- High idle indicator
- Power on indicator
- Check engine
- Stop engine
- Check engine MIL lamp
- DPF indicator
- High exhaust temperature
- Wait to start

Other indicator and warning lights (if applicable):

- Differential locked
- PTO (s) engaged
- Auto-slip response
- Retarder engaged
- Retarder temperature
- ESC indicator
- Jacks Out
- Jacks Down

Controls located on main dash panel:

- Master power disconnect with ignition switch
- Engine start switch
- Headlight switch
- Windshield wiper/washer switch
- Differential lock switch (if applicable)
- Dimmer switch for backlighting

Controls included in steering column:
Horn button
Turn signal switch
Hi-beam low-beam switch
4-way flasher switch
Tilt-telescopic steering wheel controls

CENTER CONTROL CONSOLE

There shall be an ergonomically designed center control console. The console shall be constructed of 1/8" smooth aluminum and shall be mounted on the engine hood between the driver and officer. The console shall have a durable coating to match the color of the engine hood covering and shall feature surfaces on each side that are contoured to face the driver and the officer for easy viewing and accessibility. The switches and other customer specified electrical items shall be mounted in removable 1/8" smooth aluminum panels with a black wrinkle finish. The console shall have an aluminum lift-up lid with quick release latch. The lid shall be held in the open position with a gas strut to allow for easy access and serviceability.

Controls located in the console conveniently accessible to the driver:
Transmission shifter
Remote mirror control
Illuminated rocker switches to control high idle, Jacob's brake, siren/horn, siren brake, master emergency, and other customer specified components
12V power point (if applicable)

Controls located in the console conveniently accessible to the driver and the officer (center):
Pump shift control with OK TO PUMP and PUMP ENGAGED lights
Parking brake control with a guard to prevent accidental engagement

Controls located in the console conveniently accessible to the officer:
Illuminated rocker switches to control customer specified components that are easily reachable to the officer and do not allow for compromise of the driver's view, and eliminate the need for foot switches
Surface to recess siren head, radio head, or other desired items as space permits
12V power point (if applicable)

Driving compartment warning labels shall include:
HEIGHT OF VEHICLE
OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION
DO NOT USE AUXILIARY BRAKING SYSTEMS ON WET OR SLIPPERY ROADS
EXIT WARNINGS

Additional labels included:
COMPUTER CODE SWITCH
ABS CODE SWITCH
FLUID DATA TAG
CHASSIS DATA TAG

OVERHEAD CONTROL CONSOLE

An ergonomically designed overhead console shall be provided above the driver and officer, running the full width of the cab. The overhead console shall be constructed from 1/8" aluminum plate and shall be painted with a durable finish to match the inside of the cab. There shall be seven (7) removable 1/8" smooth aluminum plates with a black wrinkle finish to house switches and other electrical items.

Directly above the driver there shall be two (2) panels with no cutouts, unless otherwise specified by the customer.

There shall be a panel located to the right of the driver that shall be designated for defroster, heat, and air conditioning controls (if specified).

The center overhead panel shall be designated for up to seven (7) door ajar indicators. Upon releasing the apparatus parking brake, one or more of these lights shall automatically illuminate (flash) when any of the following conditions occur that may cause damage if the apparatus is moved: cab or compartment door is open; ladder or equipment rack is not stowed; stabilizer system deployed; any other device has not been properly stowed.

There shall be a panel to the left of the officer as well as two (2) directly above the officer. These panels shall have no cutouts, unless otherwise specified by the customer.

ENGINE WARNING SYSTEM

An engine warning system shall be provided to monitor engine conditions such as low oil pressure, high engine temperature and low coolant level. Warning indication shall include a STOP ENGINE (red) light with audible buzzer activation and a CHECK ENGINE (amber) light. Note: (Some engine configurations may also include a fluid warning light.)
There shall be a master information light bar with 24 lights located across the center of the dash panel that covers up to 24 functions. These are defined under Indicators and Warning Lights above.

PUMP SHIFT MODULE

A pump shift module with indicating lights shall be located within easy reach of the driver. A gear lockup shall be provided to hold the transmission in direct drive for pump operation.

DOOR AJAR LIGHT

A Whelen M2 LED light shall be installed in the cab near the driver. The light shall illuminate when the parking brake is released and any cab or body door is open or any other item on the apparatus is not properly stowed that may cause damage. Color of LED shall be determined at the pre-construction conference

DOOR AJAR ALARM

A door ajar alarm with silence button shall be provided. The location of the button shall be determined at the preconstruction conference.

HIGH IDLE

The engine shall have a "high idle" switch on the dash that shall maintain an engine RPM of 1,000. The switch shall be installed at the cab instrument panel for activation/deactivation. The "high idle" mode shall become operational only when the parking brake is on and the truck transmission is in neutral.

AUXILIARY POWER POINTS

Two (2) 12-volt 20-ampere auxiliary lighter socket type plug-ins, shall be provided in the cab, one near the driver and one near the officer.

USB POWER POINTS

Two (2) 12-volt dual port USB power points shall be provided in the cab.

CAB ACCESSORY FUSE PANEL

A fuse panel shall be located underneath the rear facing seat on the officer’s side. The fuse panel shall consist of six (6) battery hot and six (6) ignition switch circuits. Each circuit shall be capable of 10-ampere 12-volt power and total output of 50-amps. The fuse panel shall be capable of powering accessories such as

hand held spotlights, radio chargers, hand lantern chargers and other miscellaneous 12-volt electrical components.

POWER & GROUND STUDS, OVERHEAD COMMAND CONSOLE

There shall be a set three (3) threaded power studs provided in the cab's overhead Command Console for future installation of two-way radios.
The studs shall be wired as follows:

- One (1) 12-volt 60-amp, direct to the battery
- One (1) 12-volt 30-amp controlled by the ignition switch
- One (1) 12-volt 125-amp ground

POWER & GROUND STUDS, LOWER COMMAND CONSOLE

There shall be a set three of (3) threaded power studs provided in the cab's lower Command Console for future installation of two-way radios.

The studs shall be wired as follows:

- One (1) 12-volt 60-amp, direct to the battery
- One (1) 12-volt 30-amp controlled by the ignition switch
- One (1) 12-volt 125-amp ground

POWER & GROUND STUDS, UNDER OFFICER'S SEAT

There shall be a minimum of four (4) threaded power studs provided under the officer's seat to accommodate the future installation of two-way radios.
The studs shall be wired as follows:

- One (1) 12-volt 40-amp controlled by the battery switch
- One (1) 12-volt 60-amp controlled by the ignition switch
- One (1) 12-volt 60-amp, direct to the battery
- One (1) 12-volt 100-amp ground

VEHICLE DATA RECORDER

An Akron / Weldon vehicle data recorder as required by the 2009 edition of NFPA 1901 shall be installed. Vehicle data shall be sampled at the rate of 1 second per 48 hours, and 1 minute per 100 engine hours.

Free software is available to allow the fire department to collect the data as needed.

LIGHTING CAB INTERIOR

Interior lighting shall be provided inside the front of the cab for passenger safety. Two (2) ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens. One light shall be located over each the officer and driver's position. The lights shall also activate from the open door switch located in each cab doorjamb.

LIGHTING CREW CAB INTERIOR

Interior lighting shall be provided inside the crew cab for passenger safety. Two (2) ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens shall be provided. The lights shall also activate from the open door switch located in each cab doorjamb.

DOOR LIGHTS

One (1) Whelen Ion T series model TLI* LED light shall be installed in a black bezel inside each of the lower cab doors. The lights shall be wired to flash when the ignition is on and the cab door is open.

HEAVY DUTY HEATER/DEFROSTER/AIR CONDITIONER

There shall be a minimum 80,000 cool BTU and 65,000 heat BTU single unit, heater/air conditioner mounted over the engine cover. The unit shall be mounted in center of the cab on the engine hood/enclosure. Unit shall have a shutoff valve at the right side of the frame, next to the engine. Airflow of the heater/air conditioner shall be a minimum 1200 CFM. To achieve maximum cooling, a TM-31 Compressor (19.1 cu. in.) will be used.

The defroster/heater shall be a minimum of 35,000 BTU and shall be a separate unit mounted over the windshield. There shall be eight (8) louvers/diffusers to direct to windshield and door glass. Airflow of the defroster/heater shall be a minimum 350 CFM. The unit shall be painted Zolatone greystone to match the cab ceiling.

The condenser shall be roof mounted and have 80,000 BTU rating. The unit shall include two fan motors. Airflow of the condenser shall be a minimum 2250 CFM. (This roof-mounted condenser shall work at full rated capacity at an idle with no engine heat problems.)

HEATER/DEFROSTER/AIR CONDITIONING CONTROLS

The heater/defroster/air conditioning shall be located in the overhead console in the center of the apparatus cab within reach of the driver and officer. The controls shall be illuminated for easy locating in dark conditions. The controls shall be located in such a way that the driver will not be forced to turn away from the road to make climate control adjustments. Control of all heater/defroster/air conditioning functions for the entire apparatus cab shall be achieved through these controls.

FLOORBOARD HEATING DUCT

There shall be ductwork to the floor of the cab, facing forward to provide heat for the front of cab floor area.

DEFROSTER DIFFUSER

A molded diffuser made of durable ABS plastic ductwork system shall be provided. It shall be form fitted and shall attach to the cab's overhead defroster unit to provide temperature controlled air to the windshields. Air flow of up to 280 cfm is balanced and directed across the entire windshield for optimum defrosting capability in all types of weather.

TOOL MOUNTING PLATE

There shall be a 3/16" smooth aluminum plate installed on top of the heat/ air conditioning unit for use in mounting of equipment. The plate shall measure approximately 25" wide x 19.5" long and shall be spaced up 1". The mounting plate shall feature beveled edges on the front and rear for a finished appearance. The plate shall be coated with the same finish as the heat/air conditioning unit and shall be secured with screws for easy replacement.

STORAGE COMPARTMENT

A storage unit constructed of .125" aluminum material shall be installed on the back of the heat/air conditioning, and shall have 3 areas to horizontally place EMS glove boxes into.

AUXILIARY DEFROSTER FAN

There shall be a Red Dot model RD-5-5786-OP 12-volt fan mounted under the upper command console, outboard of console position 1, directed at the driver's side windshield. The fan shall be activated by a 3-position toggle switch located at the base of the fan. The switch positions shall be High, Low and Off.

AUXILIARY DEFROSTER FAN

There shall be a Red Dot model RD-5-5786-OP 12-volt fan mounted under the upper command console, outboard of console position 7, directed at the officer's side windshield. The fan shall be activated by a 3-position toggle switch located at the base of the fan. The switch positions shall be High, Low and Off.

DRIVER'S SEAT

A H.O. Bostrom Sierra electric high back ABTS seat shall be provided for the driver. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall have 8-way adjustment including fore/aft, height, front/rear seat cushion tilt, and reclining back. The seat shall be upholstered with heavy duty Vinyl material.

HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

OFFICER'S SEAT

The officer's seat shall be an H.O. Bostrom ABTS 8-way power electric seat. The seat shall have the following features:

- Integrated 3-point seat belts
- Power 8" fore /aft adjustment
- Power 2" height adjustment
- Power front seat tilt
- Power rear seat tilt
- Power Back recline
- Built in lumbar support
- 100% Vinyl material

UNDER SEAT STORAGE COMPARTMENT

There shall be an open storage area under the officer's seat, accessible from the front. The storage area shall be approximately 19.5" wide x 14.375" high x 21.75" deep. The lower rear portion of the compartment shall be tapered to accommodate the wheel well and wiring chase. The opening shall be approximately 15.5" wide x 10.5" high.

HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188 aluminum plate and have two 1.5" x 1.5" x .188" aluminum angles welded to the underside of the shelf for support.

The shelf shall seperate the cabinet from the open portion to the portion with the hinge door.

CREW SEAT – OFFICER'S SIDE, REAR FACING

One (1) H.O. Bostrom Sierra ABTS high back fixed base seat shall be installed behind the officer. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Vinyl material.

HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

CREW SEAT – DRIVER'S SIDE, FORWARD FACING, INBOARD

One (1) H.O. Bostrom Sierra ABTS high back flip-up base seat shall be installed in the driver's side forward-facing inboard position. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Vinyl material.

HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

CREW SEAT – OFFICER'S SIDE, FORWARD FACING, INBOARD

One (1) H.O. Bostrom Sierra ABTS high back flip-up base seat shall be installed in the officer's side forward-facing inboard position. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Vinyl material.

HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

SEAT UPHOLSTERY COLOR

The cab seat upholstery shall be black in color.

SEAT BELT WARNING SYSTEM

An Akron / Weldon seat belt warning system shall be provided, and shall monitor each seating position. Each seat shall be supplied with a sensor that, in conjunction with the display module located on the dash, shall determine when the seat belt was fastened and if the seat is occupied. An icon shall represent that the seat

is properly occupied. An audible and visual alarm shall be activated if the seat is occupied and/or the belt is not fastened in the proper sequence.

CREW SEAT COMPARTMENT

A compartment shall be provided under the forward facing crew seats on the back wall of the cab. One (1) drop down door shall be provided on the front face of the compartment, secured with D-Ring style latches. Compartment dimensions are 91.5"L x 14"H x 19"W.

Provisions shall be made for the installation of customer furnished radio.

ANTENNA MOUNTING

Two (2) customer supplied radio antennas shall be installed in the cab roof with the coax cable run to the radio mounting area. The radio location shall be determined at the pre-construction meeting.

ELECTRICAL PROVISION

Wiring shall be provided in the cab for the future installation of electrical chargers. The location shall be determined during the pre-construction conference.

SPEEDOMETER

A Class 1 brand digital speedometer shall be provided on the officer's side in cab.

FIRE PUMP HALE QMAX-150

Fire pump shall be midship mounted. The fire pump shall be of the double suction single stage centrifugal type, carefully designed in accordance with good modern practice.

The pump shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI.

The pump body shall be horizontally split, on a single plane, casing type with removable lower casing for easy removal of the entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in the chassis.

All moving parts in contact with water shall be of high quality bronze or stainless steel. Easily replaceable bronze labyrinth wear rings shall be provided. Discharge passage shall be designed to accomplish uniform pressure readings as the actual pump pressure. The rated capacity of the fire pump shall be 1500 gallons per minute in accordance with NFPA# 1901.

The pump shaft shall be rigidly supported by three bearings for a minimum deflection. One high lead bronze sleeve bearing to be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing shall be lubricated by a force fed, automatic lubrication system, pressure balanced to exclude foreign material. The remaining bearings shall be heavy duty type, deep groove ball bearings and shall be splash lubricated.

PUMP TRANSFER CASE – G SERIES

The drive unit shall be designed of ample capacity for lubricating reserve and to maintain the proper operating temperature. Pump drive unit shall be of sufficient size to withstand up to 16,000 lbs. ft. torque of the engine in both road and pump operating conditions.
The gearbox drive shafts shall be heat treated chrome nickel steel input and output shafts shall be at least 2-3/4" in diameter, on both the input and output shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.
The engagement of the pump transmission shall be of such design so as to permit transfer of power from road to pump operation only after vehicle is completely stopped. The pump shift shall be air actuated from the cab and have both a green "Pump Engaged" light, and a green "O.K.-To-Pump" light. A third green light shall be provided on the pump operator's panel for "Throttle Ready".
The pump drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory.

MECHANICAL PUMP SEAL

The pump seal shall be a maintenance free mechanical pump type seal.

PUMP ANODE

A Hale pump anode kit assembly # 529-0050-00-0 shall be provided and installed in the pump body. A minimum of two (2) anodes shall be installed one (1) in the suction side and one (1) in the discharge side of the pump.

PUMP TEST & CERTIFICATION

The pump shall be tested and certified by Mistras Group, Inc., a third party independent testing agency, in accordance with NFPA 1901. A 3 hour pumping test from draft shall be conducted consisting of 2 hours of continuous pumping at 100% of rated capacity at 150PSI net pump pressure, followed by ½ hour of continuous pumping at 70% of rated capacity at 200PSI net pump pressure, and ½ hour of continuous pumping at 50% of rated capacity at 250PSI net pump pressure). The testing shall also include a pressure control system test, priming system test, vacuum test, a gauge/flowmeter test, and a pumping engine overload test. If the apparatus is equipped with a water tank, the water tank-to-pump test shall also be included.

AUXILIARY COOLER

An auxiliary cooler shall be furnished to provide additional cooling to the engine under extreme pumping conditions. Water from the pump is to be piped to the coils of the heat exchanger allowing the engine fluid to be cooled as required.

The fittings shall be brass Compression Style fittings.

PUMP CONNECTIONS

All suction and discharge lines (except pump manifolds) 1" and larger shall be heavy-duty stainless steel pipe. Where vibration or chassis flexing may damage or loosen piping or where a coupling is necessary for servicing, a flexible connection shall be furnished. All lines shall be drained by a master drain valve or a separate drain provided at the connection. All individual drain lines for discharges shall be extended with a 90 degree fitting in order to drain below the chassis frame. All water carrying gauge lines shall utilize nylon tubing.

TPM - Total Pressure Master

The apparatus pump shall be equipped with a variable relief valve system designed to automatically relieve excessive pump pressure when operating from draft or positive incoming flows. The system shall self-restore to the non-relieving position when excessive pressure is no longer present.

The relief valve system shall be totally mechanical and consist of an internal relief valve to bypass water to the suction side of the pump, an external relief (dump) valve to discharge water to atmosphere, and a single panel mounted control valve to provide complete control of pump pressure to the pump operator.

A single panel mounted control shall permit the pump operator to "set" a desired relief pressure for both internal and external relief valves. The panel control shall have an easy to read and easy to set adjustment with indication of pressure setting.

The total relief valve system shall function by monitoring and controlling pump pressure and relieve excessive pressure by first utilizing the internal relief valve (returning flow to the pump suction). If excessive pressure remains, a secondary external relief valve responds by discharging excessive pressure to atmosphere. The staging of the internal and external relief valves to operate in series ensure maximum protection against over pressure and eliminates the indiscriminate discharging of water to the ground.

The external relief (dump) valve shall be mounted on the discharge side of the pump where discharged water flowing through the valve provides a self-cleaning process and virtually eliminates the possibility of the valve remaining in an open position due to contamination.

One amber light shall illuminate when the internal relief valve is open. The same light shall flash intermittently when both the internal and external valves are open.

Both relief valves shall be designed to open into discharge flow which provides the advantage that in a normally closed position both relief valves are maintained in a closed position by virtue of pump discharge pressure.

All functional components of the relief valve system that are in contact with water shall be bronze material.

The total relief valve system must meet all existing NFPA Standards for Pressure Control Devices and Intake Pressure Relief Systems incorporated into one interconnected system.

ENGINE STATUS CENTER

A Class 1 ENFO IV Engine Status Center shall be provided. The Engine Status Center provides the pump operator with information on the engine RPM, oil pressure, engine temperature and electrical system voltage. The ENFO IV utilizes the SAE-J1939 data bus for engine information on engines that support the J-1939 protocol.
Features:

• Engine RPM display
• System voltage display and alarm
• Engine oil pressure display and alarm
• Engine temperature display and alarm
• Meets NFPA 1901 requirements

INTAKE RELIEF

There shall be a Task Force Tips A1831 intake relief valve installed on the intake side of the pump. The surplus water shall be discharged away from the pump operator and terminate with Male NPT pipe thread. System is field adjustable.

HAND THROTTLE, TWISTER

A Class 1 Twister hand throttle shall be provided on the pump operator's panel. The control knob shall be 2" in diameter with a serrated grip, no mechanical stops, and have a red idle push button in the center.

The remote throttle shall set the engine RPM to idle when the pump engaged interlock signal is recognized regardless of the control knob position.

Features:

- CAN engine control (J1939 CAN)
- CW or CCW knob operation
- Ergonomic knurled knob with superior tactile feedback
- Large and easily accessible IDLE button
- Bright visual indicators: "Throttle Ready" for interlock, and "ACTIVE" for active engine control

6" PUMP INLET

A 6" diameter suction port with 6" NST male threads shall be provided, on the left side of vehicle. The inlet shall extend through the side pump panels and come complete with removable strainer and long handle chrome-plated cap.

INTAKE VALVE

A Hale Master Intake valve shall be installed on the above specified intake. It shall be electrically actuated from the pump panel and include a manual override hand wheel on the pump panel. The valve shall include a pressure relief valve to guard against incoming pressure surges.

INLET ADAPTER

One (1) Task Force Tips #AH3ST-NX 6” NST female x 5” Storz 30-degree adapter with #A01ST 5” Storz cap and chain shall be provided for the above inlet.

2.5" LEFT SIDE INLET

A 2.5" gated inlet valve shall be provided on the left side pump panel. The valve shall be supplied with chrome plate female swivel, plug, chain, and removable strainer. The valve shall attach directly to the suction side of the pump with the valve body behind the pump panel.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series 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 stainless steel 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 six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by a swing type handle located at the operator’s panel. The handle shall have a full 90 degree movement.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

6" PUMP INLET

A 6" diameter suction port with 6" NST male threads shall be provided, on the right side of vehicle. The inlet shall extend through the side pump panels and come complete with removable strainer and long handle chrome-plated cap.

INTAKE VALVE

A Hale Master Intake valve shall be installed on the above specified intake. It shall be electrically actuated from the pump panel and include a manual override hand wheel on the pump panel. The valve shall include a pressure relief valve to guard against incoming pressure surges.

INLET ADAPTER

One (1) Task Force Tips #AH3ST-NX 6” NST female x 5” Storz 30-degree adapter with #A01ST 5” Storz cap and chain shall be provided for the above inlet.

2.5" RIGHT SIDE INLET

A 2.5" gated inlet valve shall be provided on the right side pump panel. The valve shall be supplied with chrome plate female swivel, plug, chain, and removable strainer. The valve shall attach directly to the suction side of the pump with the valve body behind the pump panel.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series 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 stainless steel 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 six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by a swing type handle located at the operator's panel. The handle shall have a full 90 degree movement.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

DISCHARGE #3 - RIGHT

The discharge in position #3 on the right side of the apparatus shall include the following features.

A 4" discharge shall be provided on the right side of the apparatus.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series 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 stainless steel 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 six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Trident 4" handwheel control with position indicator located at the operator's panel.

2.5" PRESSURE GAUGE

An Innovative Controls liquid filled individual line pressure gauge shall be provided. The gauge shall be 2.5" in diameter with white faces and black lettering. The gauge shall have a pressure range of 0-400 psi.

DISCHARGE TERMINATION

The discharge valve shall be equipped with a 30° elbow termination that is capped and chained.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

MASTER PUMP DRAIN

A multiport master drain valve shall be provided and plumbed to multiple locations on the main pump body. The valve assembly shall be clearly marked as the Master Drain.

DRAIN VALVES LIFT UP STYLE

Vertical lift up style, quarter turn style drain valves shall be provided for each suction inlet, or discharge outlet as specified. Each drain shall be clearly marked and color coded to match the corresponding suction of discharge.

WATERWAY DRAIN VALVE

An Akron 1.5” waterway drain valve shall be provided and controlled with a push/pull handle.

PUMP AND GAUGE PANELS

Pump panels on both sides shall be easily removable. The gauge and control panels shall be two separate panels for ease of maintenance. There shall be one (1) removable access door as large as possible on the right side pump panel. This door shall have 1/4 turn latching mechanisms for easy removal.

The pump controls and gauges shall be located at the left side of the apparatus and properly marked. The control panel shall be laid out in a user-friendly manner.

All valve controls shall have the corresponding discharge gauge located immediately adjacent to control handle to allow operator to view the discharge pressure without searching the panel.

PANEL FINISH

The panels shall be constructed of black vinyl covered aluminum for maximum protection against abrasion caused during normal use.

ESCUTCHEON PLATES

The pump panel shall be equipped with color-coded removable escutcheon plates around the suction and discharge valves.

COLOR CODING

Each discharge valve control, outlet, and corresponding line gauge shall be color-coded. The color-coding shall be (as applicable):
#1 Discharge - Yellow
#2 Discharge – White
#3 Discharge – Navy Blue
#4 Discharge - Black
#5 Discharge - Green
#1 Pre-Connect - Orange
#2 Pre-Connect - Red
#3 Pre-Connect - Brown
#4 Pre-Connect - Magenta
Front Bumper Line - Turquoise

Large Diameter Discharge – Yellow with White Border
Left Hose Bed Pre-Connect - Tan
Right Hose Bed Pre-Connect - Lavender
Left Rear Discharge - Olive
Right Rear Discharge – Light Blue
Deck Gun – Silver
Inlets – Burgundy
Tank Fill - Lime Green
Tank to Pump – Burgundy

PUMP MODULE FRAMEWORK

The pump module framework shall not be painted.

PUMP FINISH

The fire pump shall not be painted. The pump shall remain in its natural finish.

PLUMBING FINISH

The plumbing shall not be painted. All fittings, pipe, and valves shall remain in their natural finish.

PUMP PANEL LIGHTING, LED

The driver's side pump panel controls and gauges shall be illuminated by a full width white TecNiq E41 LED light strip, controlled at the pump panel.

PUMP PANEL LIGHTING, LED

The officer's side pump panel shall be illuminated by a full width white TecNiq E41 LED light strip, controlled at the pump panel.

PUMP PANEL GAUGES AND CONTROLS

The following gauges and controls shall be provided at the pump panel:

- Two (2) certified laboratory test gauge outlets.
- Pump primer control.

- Master drain control and additional drains as needed.
- Pump capacity rating plate.
- All discharge controls.
- Two (2) master pump gauges.
- Gauges on all 1-1/2" and larger discharge lines.

PRIMING SYSTEM

The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multi-stage, venturi based AirPrime System. All wetted metallic parts of the priming system are to be of brass and stainless steel construction. A single panel mounted control will activate the priming pump and open the priming valve to the pump. The priming system shall have a five year warranty.

(1) PRIMER BUTTON - MAIN SUCTION

A single panel mounted control will activate the priming pump and open the priming valve to the pump.

COMPRESSION FITTINGS ON AIR SYSTEM

Compression style fittings shall be provided on air lines within the pump module.

THERMAL RELIEF VALVE

There shall be a Hale TRV-L Thermal Relief Valve supplied. The valve shall automatically dump a controlled amount of water to atmosphere when the pump water exceeds 120 degrees Fahrenheit. The valve shall re-set automatically. A light shall be provided at the pump panel, which will illuminate when the pump reaches 120 degrees Fahrenheit to warn the operator that the pump is automatically dumping.

AIR HORN BUTTON

A push button switch shall be provided on pump operators panel to activate the air horns.

MASTER GAUGES

Innovative Controls liquid filled pump pressure and vacuum gauges shall be provided. The gauges shall be 6" in diameter with white faces and black lettering. The gauges shall have a pressure range of 30"-0-400 psi.

APPARATUS BODY

All side metal, compartments and compartment floors shall be of bolted stainless steel. The body shall be assembled with heavy-duty stainless steel channel sills with bracing for extreme rigidity and mounted on a steel subframe.

The compartment body, pump housing and the engine compartment shall be separate modules (segmented body design) that are not to be fastened together in any manner in order to provide "flex joints" to alleviate stress and cracking of body compartments and running boards.

Compartments shall extend from the front jacks to the tailgate of the apparatus and shall be recessed to the frame of the apparatus where possible.

Compartments shall have sweep-out flooring (no obstruction at the floor bottom).

Each compartment shall be properly vented with louvers.

REAR COMPARTMENT BELOW HOSE BED

There shall be a compartment below the hose, between the frame rails, approximately 26" wide x 9-7/8" high x 88" deep.

COMPARTMENTATION LEFT SIDE

There shall be a compartment below the turntable as follows:

L1- Approximately 20-1/4" wide x 38-5/8" high x 20-1/4" deep.

There shall be two compartments above the rear wheels:

L2- Approximately 41-5/8" wide x 27-1/2" high x 12" deep. This compartment shall have two (2) pan type barn doors equipped with “D” ring latch and gas door stay.

L3- Approximately 58" wide x 27-1/2" high x 12" deep. This compartment shall have two (2) pan type barn doors equipped with “D” ring latch and gas door stay.

There shall be three compartments behind the rear wheels:

L4- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep. This compartment shall have a coffin top access with a hinged door and D-Handle latch. This shall gain access to the saw and tools located in the top of the L4 compartment

L5- Approximately 56-3/4" wide x 40" high x 26-1/2" deep.

COMPARTMENTATION RIGHT SIDE

There shall be a compartment below the turntable as follows:
R1- Approximately 40-1/4" wide x 38-5/8" high x 27-1/2". The lower portion shall be 10" deep. There shall be a 14" high x 17-1/2" deep x 40-1/4" wide notch in the lower rear portion of the compartment to accommodate the apparatus exhaust system.

There shall be two compartments above the rear wheels:
R2- Approximately 41-5/8" wide x 27-1/2" high x 26-1/2" deep. This compartment shall have two (2) pan type barn doors equipped with “D” ring latch and gas door stay.
R3- Approximately 58" wide x 27-1/2" high x 26-1/2" deep. This compartment shall have two (2) pan type barn doors equipped with “D” ring latch and gas door stay.

There shall be three compartments behind the rear wheels:
R4- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep.
R5- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep.
R6- Approximately 34-3/4" wide x 40-1/8" high x 26-1/2" deep.

AERIAL BODY SUB-FRAME

The chassis shall be fitted with a sub-frame system consisting of a series of stainless steel plate gusseted legs, extending down and out from the chassis frame rails on each side. This system will provide additional structural support to the running boards and side compartments. A heavy-duty rear platform shall be constructed of mild steel to support the rear compartments. The entire assembly will be attached to the chassis frame by a series of heavy-duty U-bolts. Self-supporting bodies will not be acceptable. NO EXCEPTIONS.

COMPARTMENT INTERIOR - L1

The L1 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - L2

The L2 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - L3

The L3 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - L4

The L4 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - L5

The L5 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - L6

The L6 compartment on the left side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R1

The R1 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R2

The R2 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R3

The R3 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R4

The R4 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R5

The R5 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - R6

The R6 compartment on the right side of the apparatus shall include the following features:

COMPARTMENT INTERIOR - A1

The A1 compartment on the rear of the apparatus shall include the following features:

UNISTRUT

Each compartment shall come equipped with 1.625" x .875" x .125" aluminum Unistrut channel. The Unistrut shall be securely fastened to the interior walls of the compartment.

ROLL-UP COMPARTMENT DOORS

Compartment doors shall be equipped with AMDOR™ brand roll-up doors, complete with the following features:

- 1” aluminum double wall slats with continuous ball & socket hinge joint designed to prevent water ingression and weather tight recessed dual durometer seals
- double wall reinforced bottom panel with stainless steel lift bar latching system
- bottom panel flange with cut-outs for ease of access with gloved hands
- reusable slat shoes with positive snap-lock securement
- smooth interior door curtain to prevent equipment hang-ups
- one-piece aluminum door track / side frame
- top gutter with non-marring seal
- non-marring recessed side seals with UV stabilizers to prevent warpage

PAINTED ROLL-UP DOORS

The doors shall be wet painted before assembly by the door manufacturer. The paint shall be the same as the apparatus to achieve an exact match of paint color and have the look and durability same as on the rest of the truck.

COMPARTMENT LIGHTING

Each compartment shall be equipped with two (2) white AMDOR LED light strips which shall provide a consistent pattern to illuminate to entire compartment.

L4 - COFFIN COMPARTMEN TOP FOR SAWS

The L4 compartment shall be accessible from the compartment top with a coffin like compartment door with D-Handle latch. This shall gain access to the saws and equipment located at the top of the L4 compartment. More details to be discussed at the pre-construction conference.

DELETE HOSE BED

There shall be no storage on the vehicle for fire hose. The traditional "hose bed" area shall be converted into a compartment for the storage of additional ground ladders. See ground ladder section for more information.

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BODY HANDRAILS

Handrails shall be constructed of type 304 stainless steel 1.25 inch diameter tubing with bright finish and knurled gripping surface. Mounting flanges shall be constructed from 7 gauge, .180 thick, stainless sheet. Each grab rail shall have 90 degree returns to flanges. The ends of grab rail shall pass through the flanges and be welded to form one structural unit. The handrails, shall be mounted using 1.25" SS Hex bolts, with a barrier rubber gasket at each flange. Sufficient space shall allow for a gloved hand to firmly grip the rail.

The rails shall be located in the following areas:
(Note: These are in addition to those previously mentioned in the cab section):

There shall be one (1) handrail at the side of the pedestal.

There shall be one (1) handrail located at the entrance to the aerial platform

There shall be two (2) handrails at the rear access ladder to the platform.

GRAB HANDLE

Five (5) chrome grab handle shall be provided in specified locations. To be determined at the mid or final inspection

STEPS

There shall be up to three (3) Innovative Control fold-down steps with integrated step lights mounted on each side of the front face of body to provide access to the top of the pump module and compartments.

The quantity and location of steps and handrails shall meet the Current NFPA 1901 pamphlet in effect at the time the apparatus is ordered.

RUB RAILS

The body shall be equipped with anodized aluminum channel style rub rails at the sides. Rub rails shall be spaced away from the body by 1/2" polymer spacers. The rub rails shall be polished to a bright finish.

ALUMINUM TREADPLATE

All load bearing aluminum treadplate running boards shall be .155 thick bright annealed with a serrated embossed finish. Running boards and rear step edges shall be flanged down for added strength. Running boards shall also be flanged up to form kick plates. All non-load bearing aluminum shall be .125" thick bright annealed finish. In areas where aluminum treadplate shall function as a load-bearing surface, there shall be a heavy steel sub-structure. This structure shall consist of 3" channel and 1-1/2" angle welded support. This shall assure that there shall be no flexing or cracking of running boards. The aluminum shall be insulated from the steel by closed cell foam body barrier material.

Treadplate locations:
1. Skirting around front bumper.
2. The step at the cab entrance.
3. The jump seat steps.
4. The running boards.
6. The top of the compartments.
7. The top of the turntable.
8. The floor of the platform.

WHEEL LINERS

Fiberglass fully radiused wheel well liners with adequate support to maintain their rigidity through adverse weather conditions shall be provided.

SCBA CYLINDER COMPARTMENTS

There shall be six (6) spare breathing air cylinder compartments recessed in the rear fender wells, three (3) left and three (3) right. The compartments shall have brushed stainless doors with equipped with a D-Ring style latch. The interior of the door shall incorporate a rubber seal to keep the compartment free of road debris and moisture. The interior compartment shall be constructed of a high-density polyethylene plastic.

DUO-SAFETY LADDERS

Apparatus shall be capable of carrying minimum of 190 ft. ground ladders:
One (1) 10 ft. folding ladder, Series 585A (mounted in fly section)
One (1) 16 ft. roof ladders, Double Hooked Series 875A mounted internal
One (1) 16 ft. roof ladders, Double Hooked Series 875A mounted on side of boom
One (1) 20 ft. roof ladders, Double Hooked Series 875A - mounted on side of boom
One (1) 20 ft. roof ladders, Double Hooked Series 875A - mounted internal
Two (2) 28 ft. 2-section extension ladder, Series 1200A
Two (2) 35 ft. 2-section extension ladder, Series 1200A
One (1) 45 ft. 3-section extension ladder - mounted internal

LADDER

One (1) 17-foot Little Giant ladder shall be provided and mounted above the R2 compartment with PAC Mounts.

One of the roof ladders shall be mounted on the side of the base section of the aerial.

LADDER ENCLOSURE

The ground ladders shall be stored within a weather resistant enclosed area on the officer’s side of the hosebed area. The ladders shall be mounted on non-metallic slides so each ladder can be removed individually. All ladders shall be stored on beam if possible. A vertically hinged treadplate door shall enclose the ladders on the rear.

Poly roller bearing shall be installed in the floor of the ladder chute to allow the ladders to stow and deploy easily. Each ladder slot shall have a metal gate and latch to prevent ladders from rolling back against door of the compartment.

There shall be "Stay Open" devices located on the back of the body to catch the ladder chute doors and prevent them from swinging shut during ladder deployment.

The rear ladder doors shall be smooth aluminum to allow for Chevron Striping for increased visibility of the unit.

RECEIVER (Rear)

A 2" receiver shall be provided and mounted directly to the apparatus chassis, under the body sub frame. Receivers that mount to the body subframe shall not be acceptable. The receiver shall be 2" x 2" heavy wall tube and solidly re-enforced. The receiver shall be rated with a maximum capacity of 5,000 lbs. The receiver shall be designed for a 2-1 straight pull capacity (10,000 lbs).

WIRING

Sufficient power shall be provided at the rear receiver for the intent of powering a Warn winch.

LICENSE PLATE BRACKET

A Cast Products LP0013 cast aluminum license plate bracket with LED light shall be provided at the rear of the apparatus.

BODY ELECTRIC SYSTEM, MULTIPLEX

All body electrical wiring in the chassis will be XLP cross link-insulated type. Wiring is to be color-coded and include function codes every three (3) inches. Wiring harnesses will be routed in protective, heat resistant loom, securely and neatly installed. All harnesses and power distribution modules will be electrically tested prior to installation to ensure the highest system reliability.

The cab/chassis and the chassis/body connection points will be mounted in accessible locations. Complete chassis wiring schematics will be supplied with the apparatus.

The wiring harness contained on the chassis shall be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for which the circuit is protected without exceeding 10% voltage drop across the circuit. The wiring shall be uniquely identified by color code or circuit function code, labeled at a minimum of every three (3) inches. The identification of the wiring shall be

referenced on a wiring diagram. All wires conform to SAEJ1127 (Battery Cable), SAEJ1128 (Low Tension Primary Cable), SAEJ1560 (Low Tension Thin Wall Primary Cable).

All harnesses shall be covered with moisture resistant loom with a minimum rating of 300 Degrees Fahrenheit and a flammability rating of VW-1 as defined in UL62. The covering of jacketed cable has a minimum rating of 289 degree Fahrenheit.

All harnesses are securely installed in areas protected against heat, liquid contaminants and damage. The harness connections and terminations use a method that provides a positive mechanical and electrical connection and are in accordance to the device manufacturers instructions. No connections within the harness utilize wire nut, insulation displacement, or insulation piercing.

All circuits conform to SAE1292. All circuits are provided with low voltage over current protective devices. These devices are readily accessible and protected against heat in excess of component rating, mechanical damage, and water spray. Star washers are not used for ground connections.

BACK-UP ALARM

An Ecco model SA917 automatic self-adjusting electronic back-up alarm producing 87-112 db shall be installed at the rear between the frame rails. It shall operate whenever the transmission's reverse gear is selected.

STOP/TAIL/TURN/REVERSE LIGHTS

The rear stop/tail/turn/reverse lights shall be Whelen M6 series lights installed in chrome plated M6FCV4 quad housings one (1) each side on the rear of the apparatus body. The stop/tail lights shall be LED model M6BTT located in the top position of the housing. The amber arrow turn signals shall be LED model M6T located below the stop/tail lights. The reverse lights shall be LED model M6BUW located below the turn signals. The bottom position of the housing shall accommodate a Whelen M6 series warning light.

LED ICC/MARKER LIGHTS

LED type ICC/marker lights shall be provided to meet D.O.T. requirements.

FLEXIBLE MARKER LIGHTS

A Britax L427.200.L12V LED flexible marker light shall be mounted on the rear lower corners of the body, one each side.

STEP LIGHTS

The pump module running board area shall be illuminated by Whelen 2G 4” diameter LED lights mounted one each side on the front of the body in chrome flanges.

LED strip lighting or individually mounted lights shall be provided at the rear of the body and at the turntable step to illuminate all stepping surfaces.

GROUND LIGHTING

The apparatus shall be equipped with lighting capable of illumination to meet NFPA requirements. Lighting shall be provided at areas under the driver and crew riding area exits and shall be automatically activated when the exit doors are opened. The ground lights shall be Truck-lite® LED model #44042C. Lighting required in other areas such as work areas, steps and walkways shall be activated when the parking brake is applied, provided the ICC lights are on.

REAR WORK LIGHTS, LED

The rear work lights shall be Wheleb LED SPOT lights wired to a seperate switch in the cab labeled REAR SPOTS.

WHELEN CENCOM CORE SYSTEM

The apparatus shall feature the Whelen CENCOM CORE SYSTEM:

• Access every connector and fuse from the top of the box
• Supports remote firmware updates through USB-C with Whelen Command or over-the-air with The Whelen Cloud Platform™
• Supports up to 99 WeCanX devices -the most ever in a Whelen control system
• Support multiple Whelen peripherals of the same type on the same vehicle
• Meets all applicable SAE and California Title XIII requirements with various Whelen speakers
• Five year warranty

Inputs
12 logic inputs

1 ignition power-up input
4 analog inputs
17 total inputs

Outputs
2 15A outputs
4 10A outputs
16 2A outputs
1 dry contact relay
23 total outputs
Max output current: 100
Flashing outputs
Every output across the system can be synchronized

Connections
1 ethernet connection
1 WeCanX™ connection
2 CANport™
1 USB-A host
1 USB-C
1 Micro SD card
99 remote modules

Sensors
Battery voltage sensor
Temperature sensor
3 axis accelerometer sensor

Dynamic Variable Intensity (DVI) Patterns and Tones (Patent-Pending)
Gradually increase or decrease the output intensity within a flash pattern or tone.

Tone Synchronization
Sync amplifiers together
Sync tones with lights (Patent-Pending)

Diagnostics
Supports diagnostics

More details and functions of the system shall be determined at the pre-construction conference. All required control heads, modules, input and output systems shall be included for every warning light and system on the unit.

OPTICAL WARNING SYSTEM

The optical warning system shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right-of-way and the other mode shall signal that the apparatus is stopped and is blocking the right-of-way.

A momentary rocker switch shall be provided near the driver and labeled Master Emergency to energize all of the optical warning devices provided. A secondary momentary rocker switch shall be provided near the officer. All lights shall operate at not less than the minimum flash rate per minute as specified by NFPA.

UPPER LEVEL WARNING DEVICES

The upper level shall be divided into zones A (front), B (officer's side), C (rear) and D (driver's side).

Zone B (officer's side) shall be covered by the module from the light bar and the rear beacon.

Zone C (rear) shall have two (2) Whelen Model MCFLED2* Micro Freedom LED beacons installed one (1) each side on the upper rear of the apparatus. Each beacon shall feature two (2) rear-facing corner LED modules.

Zone C (rear) shall have one (1) Whelen M6 Series model M6* Super LED warning light installed on the rear face of the aerial platform.

Zone D (driver's side) shall be covered by the module from the light bar and the rear beacon.

LOWER LEVEL WARNING DEVICES

The lower level shall be divided into zones A (front), B (officer's side), C (rear) and D (driver's side).

Zone A (front) shall have four (4) Whelen M6 series model M6* Super LED warning lights.

The lights shall be installed two (2) each side on the front of the cab in the warning light housings.

Zone B (officer's side) shall have four (4) Whelen M6 series model M6* Super LED warning lights.

The lights shall be installed one (1) near the front corner of the apparatus, one (1) under the turntable area, one (1) near the rear axle, and one (1) near the rear corner of the apparatus.

Zone C (rear) shall have two (2) Whelen M6 Series model M6* Super LED warning lights installed one (1) each side on the lower rear of the apparatus.

Zone D (driver's side) shall have four (4) Whelen M6 series model M6* Super LED warning lights.

The lights shall be installed one (1) near the front corner of the apparatus, one (1) under the turntable area, one (1) near the rear axle, and one (1) near the rear corner of the apparatus.

MARS LIGHT, LED

A Mars TB8-F "888" oscillating light shall be flush mounted in the front of the cab.

ADDITIONAL WARNING LIGHTS

There shall be (2) additional Whelen M6 Series model M6* Super LED warning lights installed on the apparatus.

BROW MOUNTED LED SCENE LIGHT

A Whelen Pioneer PFH2 brow mounted LED scene light shall be provided. The lamp head shall operate at 12 volts DC, draw 12.5 amps, and generate 16,000 lumens of light. The light shall be mounted at the front brow of the cab and shall be controlled from a switch in the cab.

The brow light shall also blink when in RESPONSE MODE as part of the warning light package. This will be controlled via the Whelen CORE System

SURFACE MOUNTED LED SCENE LIGHT

Two (2) Whelen PCPSM1* surface mounted LED scene lights shall be provided. The lamp head shall operate at 12 volts DC, draw 6 amps, and generate 7,800 lumens of light. The light shall be mounted on the rear of the apparatus, (1) ea side and wired to a switch in the cab labeled REAR SCENE.

RECESSED MOUNTED LED SCENE LIGHT

Two (2) Whelen PCH2 recessed mounted LED scene lights shall be provided. The lamp head shall operate at 12 volts DC, draw 6 amps, and generate 20,261 lumens of light. The light shall be mounted on the side of the raised roof cab of the apparatus, (1) ea side and wired to a switch in the cab labeled LEFT SCENE and RIGHT SCENE.

WHELEN LED SCENE LIGHT, TOP OF BODY

Two (2) Whelen Summit Series bar lights Model #44MRB shall be provided. The light shall be mounted on the side of the apparatus, above the body compartments, (1) ea side and wired to a switch in the cab labeled LEFT SCENE and RIGHT SCENE.

The Summit Series bar shall also have RED LED modules incorporated for additional warning lights duing response mode.

WHELEN PELCC SCENE LIGHTS

Four (4) Whelen PELCC Lights shall be provided and installed in the following locations:

(1) ea side of the body on the outrigger panel wired to a switch labeled OUTRIGGER SPOTS
(1) ea side of the body, centered at the rear tandems, wired to the corresponding turn signal and ground light circuit. This is to light the area of the tandems during turns

ADDITIONAL WARNING LIGHTS, WHELEN M2

There shall be (3) additional Whelen M2 Series model M2* Super LED warning lights installed on the apparatus. The lights shall be wired to the Upper Power circuit

(1) ea side of the platform
(1) on the front skin of the platform

GENERATOR

The apparatus shall be equipped with a complete electrical power generation system.

A Harrison hydraulic 10.0 KW generator model MAS – 16R/5A shall be provided and installed. The generator and wiring shall conform to present National Electric Codes as outlined in the National Fire Protection Association Standards.

The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output. The generator shall be powered by a transmission power take off unit, through a hydraulic pump and motor. The generator shall be operable anytime that the apparatus engine is running and meeting the minimum range of 900 RPM’s.

Height 14"

Width 24"
Depth 18"
Weight 273
Max kW 10.0
AMPS@120V 80
AMPS@240V 40
HP Required 20
Torque Required 82.9
Maximum Pressure 2800 psi

BREAKER BOX

A circuit breaker box shall be provided with eight (8) spaces for breakers which shall be provided as needed. All wiring shall be installed in liquid tight conduit.

BREAKER PANEL

The breaker panel shall be located in a customer desired location. The location of the breaker panel must meet all requirements set forth by the National Electrical Code and NFPA guidelines.

CORD REEL

There shall be two (2) Hannay Model ECR1616-14-16 electric rewind cable reels furnished and mounted in a compartment. The reel shall come complete with at least a 150 feet of 12/3 Seoprene Water-resistant (SOW) yellow jacketed cable. A Hannay Type "C" roller assembly and HS-3 cable stop ball shall be provided.

The reels shall be located (1) located each side of the pump area.

FOUR WAY RECEPTACLE

An Akron (GFE) four-way receptacle box with light shall be provided and hard wired to the end of the cable. The box shall be securely mounted in the immediate area of the cord reel. The mounting shall be a fabricated aluminum bracket equipped with a Velcro strap to secure the box.

The box shall contain (2) NEMA 5-20 Household Duplex receptacles and (2) NEMA L5-20 Twislock receptacles.

SURFACE MOUNTED LED SCENE LIGHT

A Whelen PCPSM1A* surface mounted LED scene light shall be provided. The lamp head shall operate at 120 volts AC, draw 0.6 amps, and generate 6,700 lumens of light. The light shall be mounted on the front face of the aerial platform and shall be controlled from a switch inside the platform.

SURFACE MOUNTED LED SCENE LIGHT

A Whelen PCPSM2A* surface mounted LED scene light shall be provided. The lamp head shall operate at 120 volts AC, draw 1.2 amp, and generate 18,000 lumens of light. The light shall be mounted on the front face of the aerial platform and shall be controlled from a switch inside the platform.

TELESCOPIC LED SCENE LIGHT

Two (2) Whelen PCP2AC telescopic LED scene lights shall be provided. The lights shall be installed outside the rear corners of the aerial platform and shall be controlled from a switch located on the lamp head.

MID-MOUNT AERIAL

AERIAL LOWER MAIN FRAME ASSEMBLY

The mainframe assembly shall be mounted mid-ship on the chassis, forward of the pump and over the transmission. This shall leave the rear hose bed open for use of large diameter and regular fire hose.

An open tube or angle substructure for the mainframe assembly shall not be acceptable.

The main frame assembly base plate, located at the top of the assembly which supports and holds the turntable rotation bearing, will be a minimum 1" steel measuring 54" x 43". There shall be a minimum of two steel tension and compression bars mounted underneath, fore and aft, of the main frame assembly which shall tie the aerial and chassis together. The bars shall function to withstand vertical torsional loads. The forward tension and compression bar shall be attached from the rear area of the front spring suspension hanger to the underside area of the mainframe assembly. The rear tension and compression bar shall be attached from the forward area of the rear spring suspension hanger to the under side area of the mainframe assembly.

TURNTABLE BEARING

The turntable bearing shall be constructed of steel. There shall be a minimum of 36 drilled and tapped holes in the turntable bearing.

The diameter of the turntable bearing shall be a minimum of 47". The turntable bearing shall be able to rotate 360 degrees in either direction on a one inch thick steel plate. The turntable bearing shall be bolted to the top of the main frame assembly using a minimum of 36 Grade 8 bolts.

UPPER TURNTABLE

The turntable shall be a minimum of one-inch thick plate and ninety-six (96) inches in diameter. The side plates to which the main base section of the aerial ladder is connected shall have a minimum height of four feet and shall include I-beam gussets of approximately fifty inches in length that tolerate the side thrust and tremendous forces to which the unit would be subjected.

The turntable shall be bolted to the turntable bearing using a minimum of 36 Grade 8 bolts.

The turntable shall be equipped with two removable aluminum sections for access into the pump.

The turntable side plates shall be positioned at a 45-degree angle (opposite the angle of the raise/lower cylinders) to act as a partial counter balance weight on the opposite side of the truck from the ladder extension.

The turntable shall be equipped with a rotating mechanism consisting of two hydraulically powered, planetary gear boxes that shall handle torque loads imposed by water hammer and hose breakage. The rotating mechanism shall give the turntable and boom built in coast as an added safety precaution to avoid lateral boom side-to-side deflection (reactionary whipping effect) caused by the boom being stopped suddenly.

A parking brake system shall be provided that is capable of holding the turntable in a stationary position regardless of the angle or extension of the aerial, while carrying the manufacturer’s rated load capacity with the waterway in operation and discharging water at the tip of the aerial fly section. An override shall be provided to release the parking brake when operating with the emergency auxiliary power unit.

The power operated turntable shall provide continuous rotating of the aerial structure clockwise or counter clockwise, thus enabling the structure to be positioned in any segment through 360 degrees. The rotating mechanism shall also provide sufficient power to rotate the aerial sections in any direction at any angle, fully extended, while carrying the manufacturer's rated load capacity with the waterway in operation and discharging water at the tip of the aerial fly section.

Provisions shall be made for emergency operation of the rotation system should loss of engine power occur. This shall be done through an auxiliary power unit that is capable of providing hydraulic power to safely rotate the aerial.

There shall be one heavy-duty steel pivot shaft that shall attach the base section of the boom (at the top and very back) to the top portion of the turntable side plates. The minimum steel shaft measurement shall be 34" long, 4" diameter with 1" wall thickness. Turntables using two separate attachments to hold and position the ladder in place shall not be acceptable.

The complete rotation system shall have built in relief to prevent damage from rotating the boom into buildings or from overloaded water streams. Suitable indicators, clearly visible at all times, shall be provided to facilitate correct alignment of the turntable with the bed of the boom. An automatic light shall be used to show correct alignment for bedding of the ladder from the turntable control station and the platform station.

LEFT LOWER TURNTABLE ACCESS LADDER

There shall be fixed steps located on the left side of the apparatus to access the turntable pedestal. The ladder shall be constructed of 1.25" heavy-wall aluminum tubing, and .25" diamond plate with a non-skid footing surface. Each step shall be 7" deep x 19.5" wide.

LOWER FIXED STEP

There shall be an additional fixed step located under the fixed steps on the left side of the apparatus to access the turntable pedestal. The step shall be 7" deep x 19.5" wide made of .25" thick diamond plate with a non-skid footing surface.

LEFT UPPER TURNTABLE ACCESS LADDER

A ladder shall be provided on the upper left side turntable to allow easy access to the climbing ladder. The ladder shall be constructed from heavy wall, knurled aluminum tubing 1.25" in diameter. A large treadplate step with a Gripstrut insert shall be located at the top to act as a landing. The entire assembly shall be securely bolted to the upper turntable side plate.

RIGHT UPPER TURNTABLE ACCESS FOLDING STEPS

There shall be up to two (2) Innovative Control fold-down steps with integrated step lights mounted on the right side of the turntable to allow easy access to the climbing ladder. The steps shall be constructed of Chrome-plated Zinc. Each step shall be securely bolted to the upper turntable side plate.

INTERLOCK

An interlock shall be provided that prevents operation of the aerial device until the chassis spring brakes have been set and the transmission has been placed in neutral or the transmission is in the drive position with the driveline to the rear axle disengaged.

An interlock shall be provided that allows operation of the engine speed control only after the chassis spring brakes have been set and the transmission is in neutral.

An interlock system shall be provided to prevent the lifting of the aerial device from the travel position until all the stabilizers are in a configuration to meet the stability requirements. The interlock system shall also prevent the moving of the stabilizers unless the aerial device is in the travel position.

ROTATION LIMITING SYSTEM

An aerial rotation limiting system shall be provided to notify and prevent the operator from rotating the aerial into a restricted position due to a "short-set" outrigger configuration. The system shall enable the operator to place the aerial in a 180-degree rotation to the opposite side of the apparatus than that of the "short-set" outriggers only.

The aerial shall automatically slow down when it approaches the limit of rotation travel.

The system shall be capable of rotating the aerial two degrees past the centerline of the apparatus on the "short-set" side to enable bedding of the aerial within the travel support structure without system cutout.

SMART BOOM WARNING SYSTEM

When in an area of impending contact, the system shall shift the aerial controls into a reduced speed "creep mode" but shall not limit travel of the aerial.

Both rotation interlock and the smart boom warning system shall display information on a visual LED information center mounted at the turntable control pedestal and in the platform.

ROTATION LIMITING ALARM

A Floyd Bell US-09-515-S audible warning alarm and LED indicators shall be provided to warn the operator they have reached the rotation limit and can also be used to assist with set-up and troubleshooting of the system.

HYDRAULIC SYSTEM

A flange mounted 30 GPM hydraulic pump shall be driven by a power take off unit that is connected to the chassis transmission to provide the power required for operating the aerial. The hydraulic system shall have a minimum hydraulic reservoir for 65 gallons of special hydraulic fluid. The hydraulic reservoir shall be located at the left side of the lower mainframe assembly. The hydraulic fluid must be discharged through a fine mesh stainless steel strainer. Within the system, pilot operated check valves shall be incorporated so that all valves hold in their respective function(s). A ten (10) micron return filter of 40 gpm capacity, with replaceable cartridge, shall be provided.

The hydraulic system shall also incorporate automatic by-passes to compensate in the event the boom is forced into a building or the operator accidentally moving the control valve in the opposite direction while at full speed.

The hydraulic system shall provide coast in the lift cylinders to prevent the outrigger jack system from coming off the ground. This shall be accomplished through programmable platform controls that limit the acceleration and deceleration of the boom.

Intercooling of the hydraulic oil shall be accomplished through a built in heat exchanger to cool oil at all times.

All hydraulic lines shall be of the double braided type, with synthetic cover, rated at 12,000-psi burst pressure or above. A PTO hour meter shall be provided to record the time when the aerial hydraulic system is engaged.

AUXILIARY HYDRAULIC POWER

A 12-volt auxiliary pump shall be provided to supply emergency power to the hydraulic system. This system shall be operated off the truck batteries and provide limited but adequate power to operate the boom and outrigger jacks under emergency conditions.

CONTROL PEDESTAL

There shall be an aerial control pedestal located on the left side of the turntable. The control station shall encompass three electric over hydraulic proportional lever type controllers for raising/lowering, extending/retracting, and rotating the aerial device. The control valves shall be a proportional type to allow feathering characteristics during any operation.

The turntable pedestal controls shall have manual overrides within the console useable through an access door. The lower pedestal controls shall cancel the platform controls under all conditions.

The pedestal shall have removable panels for access to the hydraulic lines, valves and electrical wiring. There shall also be a hinged cover at the top of the control station for additional access. A safety guardrail shall be provided at the turntable pedestal control station to prevent the operator from falling. The lower pedestal controls shall completely override the platform controls under all conditions and shall be grouped in a convenient manner and properly illuminated for nighttime operation. Each pedestal hydraulic control shall be equipped with electro-magnetic solenoids, which shall operate the hydraulic valves corresponding to the electrical controls mounted in the platform for aerial boom operation. The lower pedestal control station shall be situated so the operator can easily observe the platform while operating the controls.

The following additional items shall be mounted at the top of the turntable pedestal control station:

a] Automatic panel light to illuminate controls for nighttime operation

b] On/Off control switch for boom lights (one light mounted on each side of the boom)

c] Three-way switching with the Platform for optional ladder lighting

d] Three-way switching with the Platform or on/off control switch for other optional lighting

e] Three-way switching with the Platform for the rear bucket scene light

f] On/Off control foot switch for high speed control of the hydraulic system

g] Three-way switching with the Platform for “creep mode” for aerial control functions and indicator LED

h] Illuminated emergency push button to deactivate the platform controls with the turntable electric controls remaining operable.

i] Low breathing air system pressure warning LED indicator

j] Pedestal control power LED indicator

k] Platform control power Led indicator

l] Intercom communication system

m] Tag displaying functions for each pedestal boom operation

n] Tag displaying rated load capacity for the platform

o] LED indicators for cab and body damage (crush zones), jacks status, rungs aligned, tower aligned, rotation interlock, light tower (if truck is equipped with a light tower)

p] Audible alarm for cab or body damage (crush zones), rotation interlock stop (when short-jacked) and low breathing air

q] Interlock override button

INCLINOMETER

An illuminated inclinometer shall be provided and mounted in plain view of the pedestal operator location.

BOOM ASSEMBLY

An elevated platform of the telescopic design consisting of a minimum of five sections shall be provided.

The five sections produce a compact retracted length, allowing the platform to be positioned in tight or confined spaces at lower degrees of elevation. All sections shall be of the lightweight open lattice, non-crossing enclosed box design of truss type construction to obtain optimal stability at full horizontal reach. The telescoping sections shall be constructed from heat-treated 6061-T6 aluminum alloy material fastened by Aircraft type Huck bolts. There shall be no welding on the boom so as not to lower the yield strength of the material and cause torsional fracture, grain distortions and unequal conductivity. There shall be a minimum of 500 Aircraft type Huck bolts per section of boom. The base section of the boom shall have a section modulus of 468 $in.^3$ and a resisting bending moment of 16,000,000 in. lb. The base section shall also consist of two heavy-duty steel side plates; one mounted each side of the boom. The steel side plates shall be Huck bolted into place and shall function to tie the boom, turntable, and lift cylinders together. There shall be trailing beams attached to the side plates that shall function to position and anchor lift cylinders into place and to distribute shock loads imposed by water hammer or hose breakage.

The boom shall be left in a natural aluminum finish. Painting the boom shall not be acceptable.

The boom shall have the capability to shed ice build up during freezing conditions.

AERIAL PLATFORM DEVICE

An aerial platform device with a minimum 100-foot vertical reach shall be provided. The height dimension shall be calculated with the boom at 80 degrees. The horizontal reach of the device shall not be less than 89 feet. The overall height of the apparatus with the aerial device in the bedded positions shall be no more than 11 feet, 6 inches and the overall length of vehicle shall be not more than 45 feet, 9-3/4 inches.

CLIMBING LADDER

A NFPA compliant climbing ladder with high handrails shall be provided for a continuous escape way and accessibility to and from the platform. Each section of the ladder shall be attached to a specific boom section allowing the ladder to extend automatically at the same rate as the boom.
The climbing area shall be free of cables, waterway and extension cylinders. The ladder climbing area shall be a continuous escape way free of all obstacles.

LOAD CAPACITIES

The following load capacities shall be established with the stabilizers at full horizontal extension and placed in the down position. Capacities shall be based upon full extension and 360 degree rotation.

35 MPH WIND CONDITION (DRY)

The aerial platform shall have a rated capacity of 1000 pounds at any elevation or extension. This condition shall be with “NO WATER” flowing or in the waterway.

35 MPH WIND CONDITION (WET)

The aerial platform shall have a rated capacity of 500 pounds at any elevation or extension. This condition shall be “WITH WATER” flowing or in the waterway.

LADDER LIGHTING SYSTEM

The climbing ladder shall be illuminated by FireTech FT-WL-2000-S-B 12V LED lights. The lights shall be spaced along the length of the boom to provide even lighting. The lights shall be activated by one (1) switch at the turntable pedestal and one (1) switch inside the platform.

LIFTING CYLINDERS

The raising and lowering mechanism shall consist of two hydraulic cylinders approximately 7" in diameter. The cylinders shall be attached to the boom assembly in a manner that requires only 50% of the lifting force. The cylinders shall be capable of lifting the full rated load of 1000 lb. with the boom at full horizontal extension with less than 1500 psi. hydraulic pressure.

The power operated raising and lowering cylinders shall provide movement of the ladder and platforms rapidly and smoothly without undue sway or vibration. A positive locking device shall be provided so the desired angle of elevation can be maintained indefinitely without dependence upon engine power.

As a safeguard feature, the lifting system shall be structurally and hydraulically designed and mounted to prevent rapid descent (lowering) of the aerial unit in the event of detachment, failure or hydraulic hose break. In the event of failure of any raising mechanism during operation, the gravity descent of the ladder shall be kept at a speed, which shall prevent damage to the equipment or danger to personnel. Provisions shall be made to prevent damage at full raise and lowering. There shall be a pilot controlled check valve on each cylinder.

EXTENSION AND RETRACTION

The boom and platform shall be extended by dual hydraulic rams mounted midway between the upper and lower main rails of the base section. The cylinders shall be mounted at the ends of the base section and supported through the middle to accommodate the load stress(s) of the boom.

The hydraulic cylinders shall extend the second section so that both cylinders hydraulically equalize and provide the additional safety feature of a double extension system. The extension/retraction cylinder shaft size shall be a minimum of 3" in diameter. Each cylinder rod shall have a tubular design to save weight.

The third, fourth, and fifth sections shall be connected to the second section of the boom by dual aircraft cables. This design feature shall eliminate the extra weight of hydraulic cylinders on the outer sections when extended to the side of the apparatus.

The design shall be such that the operating hydraulic pressures of the main system shall be 2,000 psi or less. Once again, as a safeguard feature, the system shall be structurally and hydraulically designed and mounted to prevent rapid descent (retraction) of the aerial unit should a detachment, failure or hydraulic hose break.

All sections of the boom shall extend and retract (slide) on special polymer slide blocks. Each slide block shall be bolted into place and shall be removable for inspection and maintenance. There shall be minimum of 44 slide blocks throughout the five sections of the boom for proper alignment and stability.

WATER SYSTEM TO THE PLATFORM

Water shall be supplied through a machine honed and fitted telescopic waterway constructed of high tensile aluminum. The waterway sections shall be provided with special pack gland type seals for minimum maintenance and the seals shall be located on the inside of the telescoping waterway. Waterway seals located on the outside of the waterway shall not be acceptable due to the decreased life expectancy caused by foreign particles and bad weather conditions damaging seals.

The waterway shall be completely enclosed by the boom sections with supports for the end of each waterway section. This shall leave the bottom side of each boom section completely free of extension/retraction cylinders, waterway supply line and waterway supports, hydraulic lines and nozzle(s) from possible damage due to the boom accidentally hitting against roof cornice or other types of constructions. The water supply line shall come directly off the main pump discharge manifold and shall be piped through smooth high pressure piping without the use of 90 degree chicksan joints, to reduce friction loss. A full flow ball valve to eliminate any possibility of water hammer on the waterway shall control the water flow. The water shall be passed through a special 4" passage-rotating swivel designed to also provide hydraulic passages and electrical circuits to the turntable.

Waterway piping immediately above the hydraulic swivel shall have one 90 degree elbow connected to a straight pipe attached to a reinforced smooth bore hose. There shall be no chicksan swivels or multiple bends or twists of the waterway pipe immediately above the hydraulic swivel, which would increase friction loss. The waterway diameter at the base section of the boom shall have a minimum inside diameter of 3-1/4" and shall finish in the fifth section of the boom with a minimum inside diameter of 5-1/4". This shall be done in order to decrease the friction loss as much as possible while increasing the water flow.

The waterway and platform nozzles shall have the capability of flowing a maximum of 2,000 gallons per minute.

Two (2) automatic relief valves, at the top and the bottom of the waterway, shall be provided in to eliminate any damage to the waterway by pressure shock or retracting the boom with the drain valve closed.

OUTRIGGER GROUND JACKS

The outrigger control station shall be located in the L1 compartment. An indicator panel to aid setup of the ground jacks is located next to the L1 compartment. The single outrigger control station shall control all outrigger operations allowing for a one-person operation and quick set-up.

Individual manual control valves shall be supplied for each mode of outrigger operation. There shall be a plaque located next to each control displaying the function.

A two position hydraulic transfer valve (diverter valve) shall be installed to direct hydraulic power to either the outrigger operations or the boom operations to prevent operation of both circuits at the same time.

Fluid capacity plate for all lubricants and filter part numbers shall be provided.

There shall be four other controls located at the outrigger control station:

a] aerial interlock override push button control to allow the boom to be raised from the nested position if an outrigger is “short-set”

b] auxiliary hydraulic motor push button control

c] high speed push button control for the hydraulic system

d] upper power/hydraulic transfer switch that turns control power on/off to the pedestal and platform. The switch also permits hydraulic fluid flow to the pedestal control valves.

The mid-ship mounted outrigger jack rams shall have a minimum bore and stroke of 5"x 23". Outriggers that employ exposed hydraulic lines shall not be acceptable.

The extendable outrigger stabilizers, when fully extended, shall have a spread of 20 feet. The stabilizer sections shall have a minimum overlap of 43" for safety and stability. The stabilizers shall be operated independently or simultaneously and may be positioned to accommodate obstructions such as curbs, pavement depressions, parked vehicles, or any other hindrance. The extendable portion of the outrigger stabilizers and the support in the mainframe shall be constructed of reinforced structural tubing, Type A500 Grade B or equivalent. Poly wear pads shall be installed between inner and outer tubes. The extendable portion of the outrigger shall ride on UHMW (ultra high molecular weight) slideblocks.

There shall be two rear jacks located directly behind the rear tandem axle area, one each side of the vehicle, designed to extend straight down to take the weight off the rear suspension system. This shall enable the vehicle to be set up in tight or confining spaces with cars, additional fire apparatus, or other obstructions nearby.

Any beam or contributing structural member, through which the jacks supports the weight of the boom (aerial sections), or any position of the apparatus plus the live loads peculiar to fire fighting operations, shall be of ample strength to carry these loads without evidence of stress, bending, twisting or other failure(s). Pilot operated check valves shall be incorporated on each jack cylinder and manual pin locks shall be provided for each main outrigger jack, for additional safety.

There shall be an audible alarm and warning light that are automatically activated when the outriggers are being deployed.

AERIAL JACKS ALARM

An Ecco DT500 alarm shall be audible when the aerial jacks have been deployed either in the short jack mode or in fully deployed operations.

OUTRIGGER DISPLAY PANEL COVER

The outrigger position display panel cover shall be made of clear plexiglass to allow visible access to the outrigger position indicators and be hinged at the bottom to allow access to outrigger for service. The panel shall be sealed to not allow water in the locked position. It shall be secured in place with two (2) latches in the upper corners.

OFFICER'S SIDE OUTRIGGER COMPARTMENT

A compartment shall be located between the officer's side outrigger and pump panel. There shall be a painted hinged door with D-Ring slam latch, gas strut and LED strip light inside. The compartment shall measure 13.25"W x 16.5" H x 24"D.

OUTRIGGER PADS

Two (2) jack pads made of black high-density polyethylene material shall be provided.

OPERATIONAL TEST

After starting the engine, setting the jacks and transmitting power to the platform, a complete cycle of the platform operation shall be carried out as follows: With one person operating the machine from the platform control station, raise the platform from horizontal, rotate through a 90 degree turn and extend to full specified height. This shall be completed in less than 150 seconds, smoothly and without vibration. The platform shall then be retracted and lowered to its starting position after which a thorough inspection shall be made of all moving parts with special attention given to the platform leveling system.

This test shall be repeated employing the controls at the lower pedestal control station. The effectiveness of the lower control override shall be demonstrated.

AERIAL DEVICE TEST & CERTIFICATION

The aerial device shall be tested and certified by Mistras Group, Inc., a third party independent testing agency. The aerial device shall be inspected and tested in accordance with the requirements of NFPA 1911, including all non-destructive testing (NDT) prior to being subjected to the tests defined in NFPA 1901. These tests shall include a stability test, horizontal load test, and an aerial device water system test.

PLATFORM AND EQUIPMENT

The platform shall be constructed of heat reflecting reinforced aluminum to protect occupants against flash fires and freezing weather. The platform shall have a minimum floor area of 19.5 sq. ft. and shall be provided with closed sides, 42" high all around. The platform shall be completely enclosed along the floorboard to

protect occupants. There shall be four doors in the platform, two in the front and two in the rear, each of which shall be provided with a suitable safety latch. All doors shall latch and open inward to avoid accidentally falling from the platform.

A total of four (4) anchor points shall be provided within the platform for the attachment of safety harnesses.

A slip-resistant front access step shall be provided, full width of the platform, approximately 8-1/2" wide. The front corners shall be chamfered for accessibility to parapets and roofs.

Drain openings shall be provided to prevent water accumulation in the platform.

The platform-supporting member shall be a welded steel fabrication in the form of a yoke. The yoke supporting tube shall be bolted to the fly section of the boom. The platform shall be attached to the yoke supporting tube through two swivel points, one each side, above center. The position of the supporting yoke tube shall enable the platform to reach over roof cornices and other obstructions and position the platform directly on top of the roof without damaging the platform undercarriage, waterway supply line, hydraulic lines or boom sections.

A platform leveling system shall be provided and so designed that the platform together with its rated load shall be supported and maintained level in relation to the turntable regardless of the position of the boom or sections. This shall include dual hydraulic cylinders on each side of the platform (four cylinders total) and a self-contained hydraulic leveling system (fully enclosed) in the end of the boom so that no hydraulic lines, reel or base controls have to travel through the telescoping sections, helping to eliminate service problems or failure of the leveling system due to ruptured lines or leaking reels. The platform pivots shall be mounted above center (characteristic of a ferris-wheel suspension) to prevent dumping the platform should a malfunction of the leveling system occur. As a safety feature, should a malfunction occur, there shall be an emergency manual override control to level the platform.

PLATFORM BOOM OR SECTION BED LOCK

An interlock system shall be provided which shall prevent action and movement of the retracted elevating platform boom or sections in their bed until the ground jacks are placed in position to stabilize the vehicle.

LOAD LIMITATIONS

Load instruction plates shall be located at the turntable pedestal control station and the platform control station indicating the safe load of the platform. The platform shall carry the rated load capacity indicated in the following manner: raise, extend, rotate, retract and lower without exceeding the hydraulic pressures prescribed by the manufacturer. Extensions, retraction, and elevation functions can be operated simultaneously.

THE PLATFORM SHALL BE CAPABLE OF CARRYING ITS RATED LOAD SAFELY IN ANY POSITION OF OPERATION ACCORDING TO NFPA #1901.

DOOR SKINS

Each exterior door skin shall be covered with diamondplate material unless chevron material is selected for the rear platform doors. In that case smooth aluminum panel shall take their place. Each door skin shall be attached with rivets.

PLATFORM ACCESS LADDER

There shall be an aluminum treadplate access ladder furnished near the rear of the body, on the left side, to access the platform. The ladder shall be furnished with a drop down aluminum step to allow easy access when the vehicle is set-up on the outriggers. Each step will be illuminated for night operation.

PLATFORM CONTROLS FOR BOOM OPERATION

The platform control station shall be on the forward wall of the platform, centered for ease in operator viewing while operating the platform. The three controls shall control the functions of raising and lowering, extension and retraction and rotation of the aerial. The placement of the controls shall conform to NFPA. The controls shall be of the electronic type. This system shall provide diagnostic functions to aid in trouble shooting as well as programmable features to control speed, acceleration and deceleration. The controls shall be lighted for nighttime operation. All electrical connections to the control panel shall be made through waterproof connections and be easily removed or replaced for service.

The following additional items shall be located at the platform control station:

a] On/off control switch for light to illuminate controls for nighttime operation.
b] Foot operated switch for high-speed control of the hydraulic system.
c] A button to activate “creep mode” of the aerial operation.
d] Slave intercom station allowing "hands free" operation of the intercom.
e] A "rungs aligned for climbing" for all high-handrail aerial ladder platforms.
f] On/Off control for Platform Control Power
g] Three-way switching with the Pedestal for optional ladder lighting
h] Three-way switching with the Pedestal or on/off control switch for other optional lighting
i] Three-way switching with the Pedestal for the rear bucket scene light
j] On/Off control foot switch for high speed control of the hydraulic system
k] Three-way switching with the Platform for “creep mode” for aerial control functions and indicator LED

l] Low breathing air system pressure warning LED indicator
m] LED indicators for cab and body damage (crush zones), jacks status, rungs aligned, tower aligned, rotation interlock, light tower (if truck is equipped with a light tower)
n] Audible alarm for cab or body damage (crush zones), rotation interlock stop (when short-jacked) and low breathing air

INCLINOMETER

An illuminated inclinometer shall be provided and mounted in plain view of the aerial platform operator.

PLATFORM CONTROL COVER

A vinyl cover shall be provided over the control panel in the aerial platform. The cover shall be secured at the top and snaps shall be used at the bottom.

PLATFORM SPOT LIGHT

One (1) Unity P46FLC LED spot light shall be provided and mounted on the top rail of the platform for the use of the operator. The light shall be actived by a switch on the light head.

LIGHT GUIDE RODS

An amber light guide rod shall be provided, one each side of yoke.

120 VOLT CIRCUIT TO PLATFORM

One (1) 15 amp electrical circuit utilizing 12 gauge 3 conductor electric cable shall be provided to the tip of the ladder. The circuit shall be wired from an enclosed terminal strip below the turntable through the collector ring assembly.
One (1) (NEMA-L5-20) female, three-prong, twist lock receptacle, with environmental cover, shall be located below the aerial platform controls.

WATER CURTAIN

A water spray system shall be provided beneath the platform and controlled by a hand operated valve inside the platform. The spray system shall provide 75 GPM of water in a 25 ft. diameter water curtain below the

platform. As a safety factor, one or both turret nozzles may be directed straight down for large volumes of water directly below.

AUXILIARY YOKE OUTLETS

Directly behind each turret a 2-1/2" NST outlet, reduced to an 1-1/2" with cap and chain, shall be provided as auxiliary outlets with gate valves near the platform. A hose carrier for 50 ft. 1-1/2" hose shall be provided in the platform.

DRIVER'S SIDE PLATFORM MONITOR

The driver's side platform monitor shall be an Akron Stream Master2 style 3483 manual hand wheel controlled. The monitor shall be constructed of lightweight Pyrolite® and have a flow capacity of 1250 GPM. The monitor shall be attached directly to the platform supporting yoke with a 4" manually controlled butterfly valve to control the flow of water.

DRIVER'S SIDE MONITOR NOZZLE

The driver's side monitor shall be equipped with an Akron 5160 80 psi automatic nozzle with a flow range of 250-1250 gpm.

OFFICER'S SIDE PLATFORM MONITOR

The officer's side platform monitor shall be an Akron Stream Master2 style 3483 manual hand wheel controlled. The monitor shall be constructed of lightweight Pyrolite® and have a flow capacity of 1250 GPM. The monitor shall be attached directly to the platform supporting yoke with a 4" manually controlled butterfly valve to control the flow of water.

OFFICER'S SIDE MONITOR NOZZLE

The officer's side monitor shall be equipped with a set of Akron style 2499 quad stacked deluge tips and an Akron #3488 stream shaper discharge pipe.

INTERCOM

A Fire Research ACT Intercom model ICA900-112 two-way system shall be installed between the aerial operator's position and the aerial platform. The intercom kit shall include two control modules, one that is hands free and one that has a push-to-talk button, two speakers, and cables. The interconnection between control modules shall require two wires. The control modules shall have an LED volume display and push-button volume control. The hands free module shall constantly transmit to the other module unless the push-to-talk button is pressed.

The intercom shall be designed for exterior use. The control module shall be no more than 2 7/8" high by 5 1/8" wide by 1 7/8". The speaker shall be no more than 5 1/8" high by 5 1/8" wide by 1 1/2" deep. The power requirements for each control module with a speaker shall not exceed 1/2 amp at 12 VDC.

BREATHING AIR SYSTEM

A breathing air system to the platform shall be provided.

One 7000-psi ASME cylinder, with pressure regulator, relief valve, and low air warning alarm, shall be provided. The system shall terminate in the platform with a three place manifold, ready to accept the customer supplied air fittings.

The air cylinder shall be certified by the American Society of Mechanical Engineers (ASME), and shall never need hydro-testing.

BREATHING MASK STORAGE

Storage shall be provided for breathing masks in the platform.

AIR BOTTLE REFILL

There shall be a screw-type shutoff valve and a CGA air fitting supplied on the air system plumbing to which a refill hose can be connected. The fitting shall be installed with a stainless steel tee. There shall be a protective dust cap installed on the air line fittings. The air storage bottle shall be refillable without disconnecting the air line plumbing.

BREATHING AIR ALARM

A Floyd Bell TLHC-V88R-930-Q low air alarm, audible and visual, shall be provided.

BREATHING AIR TANK LOCATION

The platform air supply cylinder shall be mounted on the officer's side of the aerial turntable.

PARAPET LADDER

There shall be a two-section ladder assembly pivoting off of the front step of the platform that permits access over parapet walls and onto roof surfaces. The ladder shall be self-storing and easily deployed and retracted using a gas spring assisted lever.

STOKES ARMS

There shall be two arms mounted under the front step of the platform that swing out and lock in the deployed position to provide support for a full size stokes basket and victim. The arms and platform shall have six anchor points to securely tie down a basket and victim.

STOKES STORAGE BOX

A storage box shall be attached to the side of the base section of the aerial for the storage of a Stokes style rescue stretcher. The box shall be constructed from smooth aluminum plate and shall be provided with a polished aluminum treadplate lid. The storage box shall be painted.

LIFTING EYE

A single lifting eye shall be attached to the fly section of the boom for the purpose of hoisting a stokes basket. When a stokes basket is suspended from the eye, the basket shall be able to be reached by an attendant in the platform. Capacity of the eye shall be 800 lb. and any weight suspended from it shall be subtracted from the rated capacity of the platform.

CORROSION REDUCTION POLICY

The manufacturer shall have in place a formal corrosion reduction program and assembly procedures designed for reducing and eliminating the possibility of corrosion. It is understood that fire apparatus will

operate in harsh environments. At the time of the bid the apparatus manufacturer shall show proof of a corrosion policy. Failure to submit this information could be grounds for rejection. If a formal policy is not in place explain in your bid how your firm will take the necessary steps for corrosion reduction. There will be no exception to this requirement.

In addition to a formal program the manufacture shall show proof of testing corrosion reduction processes to ASTMB117. A copy of recent test shall be included in the bid.

Frame Rails

The chassis frame rails shall be coated with a high performance, two component, reinforced inorganic zinc rich primer with a proven cathodic protection makeup preferably Cathacoat 302HB. The surface shall be clean and free of all salts, chalk and oils prior to application. Were the primer has been broken during the frame assembly process the area shall be touch up to reestablish the seal. Prior to finish paint a second primer Devran 201 shall be applied. Once the assembly of the frame is complete and the second primer is applied the entire assembly shall be covered with high quality top coat paint preferably Imron 5000 or equal. The manufacturer shall submit with the bid a copy of the product brochure and or description of the primer to be used.

Electro Plating

Steel and Iron brackets such as the pump module bracket shall be Zinc plated to protect against corrosion. Plating shall be in accordance with ASTM B663. The apparatus manufacturer shall list all components with plating.

Fasteners

In any area that a stainless steel screw or bolt head is to come in contact with aluminum or steel, painted or non-painted, the fastener shall have the underside if the head pre-coated with nylon. The nylon coating shall act as a barrier between the fastener head and the metal or painted surface.

Screw or bolt taped into the metal shall be pre-coated with a Threadlocker type material pre-applied on the threads.

When bolting together stainless steel the manufacturer shall use a pan-head bolt with nylon coating under the head, a stainless washer with a rubber backing, and a Stover flange nut to secure the bolt.

When mounting aluminum components such as a step to the apparatus body. The manufacturer shall use stainless washers with rubber backing. All mounted components shall a barrier material between the two surfaces.

All rivet type fasteners shall be of the same material being secured.

Whenever possible, pre-drill and tap all holes for mounting components such as lights, steps and hand rails prior to the paint process to reduce the corrosion opportunity. If a hole must be drilled into a previously painted surface, re-establish the paint barrier around the hole and use a flange-type nutsert with a gasket under the flange.

Where possible, minimize the number of stainless trim screws in aluminum. Structural tape and or adhesive shall be used were possible for mounting trim to the body or cab.

If a pre-treated screw or bolt is not available, hand apply Dynatex Boltlocker or Theadlocker on the threads of the screw, bolt or nutsert. This will help seal threads from moisture and help prevent the fasteners from loosening.

If lubricant is used when tapping the hole, clean out the lubricant and the shavings before applying blue Threadlocker into the hole.

Barrier Tape

Barrier tape shall be used on the backsides of all lights, trim pieces, or other components when bolting them to the apparatus; also when attaching stainless steel over an aluminum surface or when attaching aluminum treadplate to the stainless steel. All instances of dis-similar metals contacting each other require the addition of barrier tape between the metals where contact is made.

Before applying the tape, be sure the metal surface is clean from oil or dirt by cleaning the surface with a 50/50 mix of alcohol and water pr similar solvent.

Gaskets

Gaskets shall be used under all snaps, loops and fasteners for such items as for hose bed covers. Reestablish paint seal around the mounting hole edges after drilling.

Mounting with Threadlocker coating shall be used.

Flat washers with rubber backing shall be used behind all lights that have stainless screws.

Rollup Doors

1 3/4" X 1/16” barrier tape shall be used on the frame opening to act as barrier between the aluminum door rail and the painted door opening surface.

Use a paint stick around the holes after drilling and tapping. In mounting the rails, use screws with the nylon under the head and Threadlocker on the threads for mounting the doorframes.

Install barrier tape to the painted surface where the trim is located on top of the door opening.

Hinged Doors

Barrier tape shall be applied to the painted surface of the body and on the painted hinge side of the door.

On the hinge side, mount tape out toward the edge to space over the barrel of the hinge, being sure to not touch the door.

Make sure the hinge fits into the extrusion frame with no corner weld beads interfering with the door fit. Do not put the hinge in a bind or cause the stainless steel hinge to touch the aluminum. Install the doors using a truss head bolt with the nylon coating under the head and Threadlocker on the threads.

Painting Steel

The manufacturer shall wipe any oil residue dry, remove any rust and remove weld slag or smoke. Clean the surface with solvent before painting. Prime with one even coat of black Color primer, and then spray a topcoat over the primer for the finish coat. After bolts are tightened to the proper torque, touch up the bolt area and ends of the bolts with primer or cold galvanizing coating.

Mounting Emergency Lights and Options

All emergency lights, accessory mountings, Kussmaul covers, and 110 outlet boxes mounted to the body should be mounted with pre-coated Threadlocker and nylon under the head screws or bolts to minimize corrosion between dissimilar metals.

Electrical Grounding

Grounding straps shall be installed consisting of a minimum 2-gauge strap bolted to the chassis frame.

A ground cable from the cab to the right side frame rail

From the alternator to the right side frame rail

From the pump module frame to the right side truck frame.

Aerials: from the hydraulic and pump module framework.

From the pump mount to the truck frame rail.

From the body module to the right side truck frame.

Proper grounding will help eliminate ground loop problems throughout the truck, reducing the possibility for electrolysis and corrosion to occur. Provide clean connection points on all ground connections, (remove paint where applicable), and spray or brush on electrical sealer as necessary.
When installing foam system pump wiring the power must come from a dedicated breaker to a power solenoid, and then to the power terminal provided by FoamLogix or FoamPro. Pay particular attention to the grounding detail for wire size and good grounding practice, including removing the paint at the point of ground attachment to the chassis. Keep the length of ground wire as short as practically possible.
SALT SPRAY TESTING
Salt spray test shall be used to confirm the relative resistance to corrosion of coated and uncoated metallic specimens, when exposed to a salt spray climate at an elevated temperature. Test specimens shall be placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0 ml/80cm²/hour, in a chamber temperature of +35C. This climate shall be maintained under constant steady state conditions.

Method
Salt fog testing shall be performed by placing samples in a test cabinet that has been designed in accordance with Paragraph 4 (Apparatus) of ASTM B117 and operated in accordance with Paragraph 10 (Conditions) of ASTM B117.
A 5% salt solution, prepared by dissolving sodium chloride into water that meets the requirements of ASTM D1193 Specification for Reagent Water, Type IV is supplied to the chamber. At the time the samples are placed into test, the cabinet should be pre-conditioned to the operating temperature of 35ºC and fogging a 5% salt solution at the specified rate. The fog collection rate is determined by placing a minimum of two 80 sq. cm. funnels inserted into measuring cylinders graduated in ml. inside the chamber. One collection device shall be located nearest the nozzle and one in the farthest corner.

Orientation
Unless otherwise agreed upon, the samples are placed at a 15-30 degree angle from vertical or tested in the “installed” position. This orientation allows the condensation to run down the specimens and minimizes condensation pooling. Overcrowding of samples within the cabinet should be avoided. An important aspect of the test is the utilization of a free-falling mist, which uniformly settles on the test samples. Samples should be placed in the chamber so that condensation does not drip from one to another.

Test durations
Test durations shall be 500 hours except for sample rotation and daily monitoring of collection rates, the cabinet should remain closed for the duration of the test.

PAINTING

The apparatus shall undergo extensive pre-paint preparation. All cab and body trim parts are to be removed prior to painting. All appliance-mounting holes are to be drilled and de-burred prior to painting. This allows mounting holes to be primed and painted. Before prime and finish coats are applied, the complete apparatus shall be properly prepared and treated to permit the best possible adhesion of the primer and finish coats.

All materials used in the paint process shall be of the of the highest quality available. Modern methods shall be employed to assure the finest finish surface possible. All priming, surfacing and painting shall be done in a modern down draft or cross flow paint facility. Experienced personnel trained by the paint manufacturer shall perform all paint application in order to provide the highest quality and most enduring paint finish available. Both aluminum and steel surfaces to be painted shall be primed with a two (2)-component primer which is compatible with the finish coat. The apparatus shall be finish painted with a polyurethane base/clear system. “No Exception”

Utilizing the stainless steel body fabrication, the interior of all compartments, inside hose bed and surrounding areas adjacent to compartments doors shall remain a #4 brushed stainless steel finish. This practice shall eliminate the possibility of paint chipping, and electrolysis of aluminum, which can cause corrosive action between dissimilar metals. The chassis, compartment doors, front and rear jack doors, and rear fender panels shall be painted the color indicated.

A barrier gasket/washer of "High Density Closed Cell Urethane Foam" shall be used behind all lights, handrails, door hardware and any miscellaneous items such as stainless steel snaps, hooks, washers and acorn nuts. The gaskets/washers shall be coated with pressure sensitive acrylic adhesive. All screws used to penetrate painted surfaces shall be pre-treated/coated under the head with nylon and the threads shall have pre-coat #80. This procedure shall be strictly adhered to for corrosion prevention and damage to the finish painted surfaces.

The following paint process shall be utilized:

Surface Preparation:
1. Wash surface thoroughly with mild detergent.
2. Clean and de-grease with Prep-Sol 3812S.
3. Sand and feather edge using 400 grit or finer on a dual action sander.
4. Remove sanding dust with a cleaner compatible with polyurethane base coat/clear coat final finish.

Substrate treatment:
1. Use a Metal Conditioner followed with a Conversion Coating product.

Priming:
1. Use a priming 615S pretreatment.
2. Use a self etching primer applied to achieve a 1.5 mil dft minimum.
3. Use Prime N Seal sealer compatible with polyurethane base coat.

Color Coat:
1. Apply polyurethane base coat 1-2 mil dft minimum.

Clear coat:

1. Apply polyurethane clear coat 2 mil dft minimum.

SINGLE TONE PAINT

A single paint color shall be provided for the apparatus.

PAINTED FRAME AND LOWER AERIAL COMPONENTS

The frame rails, rear drop, fuel beam, outriggers, sway bars, and lower aerial components shall be painted glossy black.

TURNTABLE PAINT

The turntable, side plates and lift cylinders shall be painted silver.

PAINT PACKAGE

The ladder sheaves, extension cylinder and yoke shall be painted silver.

AIR CONDITIONING CONDENSER

The air conditioning condenser shall be painted to match the cab roof.

STRIPING

A 4" Scotchlite stripe shall be provided across the front of the cab and along each side of the apparatus.

CHEVRON STRIPING, REAR BODY OUTBOARD, ORAFOL REFLEXITE

The apparatus shall have 6” red and yellow reflective Orafol Reflexite Chevron style striping affixed to the outboard rear body panels. The striping will be set in a manner to have the effect of an inverted “V” shape. The stripe will travel low to high from the outside to the inside.

CHEVRON STRIPING, REAR PLATFORM OUTBOARD, ORAFOL REFLEXITE

In addition to the outboard rear body panels, the rear platform outboard panels shall also be covered with 6” red and yellow reflective Orafol Reflexite Chevron style striping.

BOOM SIGN

A boom sign, approximately 88" x 26", shall be provided on each side of the boom. The background of the boom sign shall be painted primary truck color.

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DEKALB COUNTY GRAPHICS

The graphics on the apparatus shall follow the scheme of the DeKalb County Fire & Rescue Fleet.

MISCELLANEOUS EQUIPMENT FURNISHED

1 pt. touch-up paint

A bag of stainless steel nuts and bolts, as used in the construction of the apparatus.

WHEEL CHOCKS

Two (2) Ziamatic #SAC-44 folding wheel chocks with SQCH-44H holders shall be provided. The wheel chocks shall be located in an area close to the rear axles easily accessible from the side of the apparatus.

PIKE POLE STORAGE

Three (3) storage tubes shall be recessed each side of the rear compartment for pike pole storage. A spring-loaded clip shall be installed near each tube to secure the head of a standard pike pole.

Equipment Mounting

Prior to delivery of the apparatus, the loose equipment shall be mounted on the vehicle. Detailed layout and mounting hardware to be used shall be discussed and agreed upon at the pre-construction meeting. Any additions made following that meeting shall be subject to an additional charge to the customer.

OPERATION AND SERVICE MANUALS

Complete "Operation and Service" manuals shall be supplied with the completed apparatus, one (1) printed copy and one (1) CD. Service manual instructions shall include service, maintenance and troubleshooting for major and minor components of the truck. The apparatus manufacturer shall supply part numbers for major components (i.e. Engine, Axles, Transmission, Pump, etc.). A table of contents, hydraulic, air brake and overall apparatus wiring schematics shall be included.

A video demonstration DVD on the operation of the truck shall be supplied with the manuals.

DEALER PREP/INSPECTION

The apparatus dealer responsible for the sale of the Sutphen apparatus shall perform a pre-delivery inspection of the apparatus prior to the customer taking possession of the vehicle. This inspection allows for the dealer to record all applicable part and serial numbers for the apparatus so that service and parts can be easily facilitated during the service life of the vehicle. This inspection also allows for a second quality control check, prior to the apparatus being placed in service.

WARRANTIES

The following warranties shall be supplied:

1. The apparatus shall be warranted to be free from mechanical defects in workmanship for a period of three (3) years or 40,000 miles, whichever comes first. The apparatus shall be covered for parts and labor costs associated with repairs for a period three (3) years or 40,000 miles, whichever comes first.
2. Life-time warranty on the frame
3. Ten (10) year warranty on paint
4. Ten (10) body structural warranty

5. Ten (10) year cab structural warranty
6. Two (2) year aerial mechanical warranty
7. Thirty (30) year aerial structural warranty
8. Manufacturers Warranties for all major components

Detailed warranty documents shall be included for complete coverage on each of these warranties.

MANUFACTURING & LOCATIONS

The apparatus will be manufactured in facilities wholly owned and operated by the company. A complete stock of service parts, and service shall be provided on a 24 hours around the clock basis. The company shall maintain parts and service for a minimum period of twenty (20) years on each apparatus model manufactured.