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CITY COUNCIL AGENDA

Tuesday, June 2, 2015
7:00 p.m.

1. CALL TO ORDER

- A. Roll Call
- B. Invocation
- C. Pledge of Allegiance

2. MAYOR AND COUNCIL REPORTS

3. STAFF REPORTS

- A. City Attorney Report
- B. City Administrator Report
 - 1. New Fire Truck

4. PUBLIC COMMENT

- A. None

5. CONSENT AGENDA

- A. 5/19/2015 City Council Meeting Minutes
- B. Appropriations 6A

6. ORDINANCES

- B. None

7. RESOLUTIONS

- A. None

8. FORMAL ACTIONS

- A. None

9. CLOSED SESSION

- A. None

10. ADJOURNMENT

WORK SESSION AGENDA

1. CORRESPONDENCE AND STAFF REPORTS

- A. City Attorney Report
- B. City Administrator Report

2. DISCUSSION ITEMS

- A. Lease Agreement – North Campus Education Building
- B. Comprehensive Plan

3. ADJOURNMENT

NOTE: Background information is available for review in the office of the City Clerk prior to the meeting.

The Public Comment section is to allow members of the public to address the Council on matters pertaining to any business within the scope of Council authority and not appearing on the Agenda. Kansas Statutes prohibit the Council from taking action on any item not appearing on the Agenda, except where an emergency is determined to exist.

BELOIT CITY COUNCIL MEETING MINUTES
May 19, 2015

The Beloit City Council met in regular session on May 19, 2015 in the Council Chambers. Mayor Tom Naasz called the meeting to order at 7:00 p.m. Council Members in attendance were Tony Gengler, Kent Miller, Robert Petterson, Bob Richard, Rick Brown, and Lloyd Littrell. Also present were City Administrator Glenn Rodden, City Attorney Katie Schroeder, and City Clerk Amanda Lomax. Absent from the meeting was Councilor Matt Otte.

Department heads in attendance were Lynn Miller, Ronnie Sporleder, Dave Elam, and Heather Hartman.

Mayor Tom Naasz gave the invocation and the Pledge of Allegiance was recited.

Councilor Miller acknowledged the city crews for their work in getting everything ready for Memorial Weekend. Councilor Gengler said he is looking forward to the weekend. Councilor Petterson said he attended his 65th class reunion.

City Attorney Katie Schroeder reported on the following items: 1. Front yard parking is in effect and law enforcement is taking over until Code Enforcement Officer Chris Jones is able to enforce the new ordinance. 2. Katie received a complaint from a citizen about people dumping grass clipping into water in the circle drive area. Katie plans to send letters out to citizens in the area.

City Administrator Glenn Rodden reported on the following: 1. Chamber of Commerce Chairman Vanette Davis went over activities planned for Memorial Weekend. 2. The Planning Commission did approve the Comprehensive Plan as written and it will be on the work session next meeting. 3. The pool is scheduled to be open this weekend. 4. The goal setting retreat with John Devine is scheduled for June 29th and 30th. 5. Rolling Hills Electric filed a building permit with the city. 6. The Legislature is still in session and projected to go through June. They are still looking at changing local election to November on the odd years. 7. The auditors will be here tomorrow to start their field work.

The Consent Agenda consisted of May 5, 2015 Council Meeting Minutes, and appropriations 5B. A motion was made by Councilor Petterson and seconded by Councilor Littrell to approve the Consent Agenda in its entirety. Roll call vote yeas: Gengler, Richard, Brown, Littrell, Miller, and Petterson. Nays: None.

Ordinance 2163 Designating handicapped parking spaces at 7th Street and Mill Street was presented to Council for approval. A motion was made by Councilor Richard and seconded by Councilor Brown to approve Ordinance 2163 Designating handicapped parking spaces at 7th Street and Mill Street Roll call vote yeas: Gengler, Richard, Brown, Littrell, Miller, and Petterson. Nays: None.

Staff is recommending that Council approve the Nex-Tech Service Agreement for the amount of \$1,078.00 per month for 36 months. The service agreement is for hardware and software support for the Police Department. A motion was made by Councilor Brown and seconded by Councilor Miller to approve the Nex-Tech Service Agreement for the amount of \$1,078.00 per month for 36 months. Motion carried 6-0. Nays: None.

Staff is recommending that Council approve the construction bid for the Airport Runway Extension and Widening with Smokey Hill, LLC in the amount of \$1,910,854.21. The contract with Smokey Hill, LLC is contingent on FAA funding and approves Glenn Rodden to sign and accept the contract. A motion was made by Councilor Miller and seconded by Councilor Richard to approve the bid from Smokey Hill, LLC in the amount of \$1,910,854.21. With the contract being contingent on FAA funding and approve Glenn Rodden to sign and accept the contract. Motion carried 6-0. Nays: None.

Staff is recommending that Council approve the Cereal Malt Beverage License for Jeff and Leia Heiman dba Bubba Q's located at 121 West Main Street. A motion was made by Councilor Brown and seconded by Councilor Petterson to approve the Cereal Malt Beverage License for Jeff and Leia Heiman dba Bubba Q's located at 121 West Main Street. Motion carried 6-0. Nays: None.

Staff is recommending that Council approve the application for Geometric Improvement Grant from the Kansas Department of Transportation for K-14. The grant will be for improvements on K-14 Highway North of 8th Street with the estimated cost of \$990,871.50. KDOT's estimated match would be \$941,327.93 and the city's match would be \$49,543.58 coming out of 2018 capital improvement budget. A motion was made by Councilor Richard and seconded by Councilor Gengler to approve the application for Geometric Improvement Grant from the Kansas Department of Transportation. Motion carried 6-0. Nays: None.

Staff is recommending that Council approve a Special Event License for Jerry and Julie Harrison for the white building at the Chautauqua Park May 22, 2015. A motion was made by Councilor Brown and seconded by Councilor Miller to approve the Special Event License for Jerry and Julie Harrison for the white building at the Chautauqua Park May 22, 2015. Motion carried 6-0. Nays: None.

A motion was made by Councilor Brown and seconded by Councilor Miller to adjourn the meeting. Motion carried 6-0. The meeting ended at 7:29 p.m.

Work Session started 7:30 p.m Council Members in attendance were Tony Gengler, Kent Miller, Robert Petterson, Bob Richard, Rick Brown, and Lloyd Littrell. Also present were City Administrator Glenn Rodden, City Attorney Katie Schroeder, and City Clerk Amanda Lomax. Absent from the meeting was Councilor Matt Otte.

Department heads in attendance were Lynn Miller, Ronnie Sporleder, Dave Elam, and Heather Hartman.

City Administrator Rodden requested an increase for on-call pay for all departments. On-call pay has not been adjusted in 20 years. Council came to the consensus not to increase on-call pay.

Adjourned 7:45 p.m.

TOM NAASZ, Mayor

ATTEST:

AMANDA LOMAX, City Clerk

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	<u>Account#</u>			<u>Work Order</u>		<u>Description</u>			<u>Debit</u>	<u>Credit</u>
6	ABRAM READY-MIX, INC									
62294	6/4/2015	6/4/2015	6,574.67					CLARK261		Posted
	30-00-6150					19607-9 CU. YDS PAVEMENT			879.66 ✓	0.00
	30-00-6150					19658-19 CU. YDS PAVEMENT			1,857.06 ✓	0.00
	30-00-6150					19665-13 CU. YDS PAVEMENT			1,270.62 ✓	0.00
	30-00-6150					19673-20 CU. YDS PAVEMENT			1,954.80 ✓	0.00
	25-00-6150					19600-.85 TON EGG ROCK			52.70 ✓	0.00
	25-00-6150					19663-7.5 TONS CRUSHED CONCRETE			120.00 ✓	0.00
	25-00-6150					19665-1.5 CU. YDS PAVEMENT			146.61 ✓	0.00
	25-00-6150					19670-3 CU. YDS. PAVEMENT			293.22 ✓	0.00
									6,574.67 ✓	0.00
1060	ACCURATE LABS									
62229	6/4/2015	6/4/2015	215.51	SU22121				20665		Posted
	51-41-6170					LAB CHEMICALS			215.51 ✓	0.00
11	ADVANCE INSURANCE COMPANY									
62230	6/4/2015	6/4/2015	705.52					20706		Posted
	21-00-2100					JUNE 2015 LIFE INS. PREMIUMS			705.52 ✓	0.00
767	AIRGAS MID SOUTH INC									
62231	6/4/2015	6/4/2015	46.33	9926789059				22221		Posted
	53-41-6230					ACETYLENE/ARGON/NITROGEN/OXYGE			30.60 ✓	0.00
	53-41-6230					HAZMAT			15.73 ✓	0.00
									46.33 ✓	0.00
1461	AMERICAN PUBLIC WORKS ASSOCIATION									
62295	6/4/2015	6/4/2015	300.00	644098.00				CLARK262		Posted
	10-15-5410					MEMBERSHIP DUES			300.00 ✓	0.00
813	AMERIPRIDE SERVICES INC.									
62232	6/4/2015	6/4/2015	118.78	2300527648				20923		Posted
	10-13-3000					FLOOR MATS			118.78 ✓	0.00
2272	APPLIED CONCEPTS, INC.									
62233	6/4/2015	6/4/2015	119.00	270114				20918		Posted
	10-13-7440					STALKER 2X REMOTE CONTROL			119.00 ✓	0.00
2032	AT&T									
62234	6/4/2015	6/4/2015	95.00	08900759485827				21154		Posted
	10-13-5310					PD-INTERNET-JUNE			95.00 ✓	0.00
63	BELL MEMORIALS LLC									
62235	6/4/2015	6/4/2015	746.58					20917		Posted
	10-13-7420					9302-VEHICLE LETTERING			734.88 ✓	0.00
	10-13-7420					9372-VINYL LETTERING ON MUSTANG			11.70 ✓	0.00
									746.58 ✓	0.00
62236	6/4/2015	6/4/2015	1,347.20	9301				20916		Posted
	10-13-7420					VEHICLE LETTERING-EXPLORER			1,347.20 ✓	0.00
2809	BELOIT CAR WASH LLC									
62237	6/4/2015	6/4/2015	206.33					20924		Posted
	10-13-4310					DOWNTOWN CAR WASHES-APRIL			98.33 ✓	0.00
	10-13-4310					US HWY 24 CAR WASHES			108.00 ✓	0.00
									206.33 ✓	0.00
71	BELOIT GREENHOUSE									
62277	6/4/2015	6/4/2015	74.00	17763				20761		Posted
	10-21-6000					FLOWERS FOR POOL			74.00 ✓	0.00
74	BELOIT MEDICAL CENTER, PA									
62238	6/4/2015	6/4/2015	85.00	6240				21149		Posted
	52-43-3000					PRE-EMPLOYMENT PHYSICAL			85.00 ✓	0.00
2735	BEVERAGE CARBONATION SERVICE									
62296	6/4/2015	6/4/2015	394.20	Q14686				20664		Posted
	51-41-6170					CO2 2940 LBS			394.20 ✓	0.00
669	BLADE-EMPIRE PUBLISHING									
62240	6/4/2015	6/4/2015	132.28					21137		Posted
	10-11-5400					143183-ORDINANCE 2161			75.08 ✓	0.00
	10-11-5400					143191-ORDINANCE 2162			57.20 ✓	0.00
									132.28 ✓	0.00

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669	BLADE-EMPIRE PUBLISHING (continued)								
62241	10-11-5400	6/4/2015	6/4/2015		139.43 143400 CP-15-01-COMP PLAN RESOLUTION		21143	139.43 ✓	Posted 0.00
88	BLUE CROSS & BLUE SHIELD INSURANCE								
62242	21-00-2100	6/4/2015	6/4/2015		52,138.73 JUNE 2015 HEALTH INS. PREMIUMS		20705	52,138.73 ✓	Posted 0.00
256	BRENTAG SOUTHWEST INC								
62243	51-41-6170	6/4/2015	6/4/2015		2,561.92 BSW611694 AMMONIUM SULFATE/POLY/CARBON		22497	2,561.92 ✓	Posted 0.00
431	CONTINENTAL ANALYTICAL SERVICE								
62244	52-41-3000	6/4/2015	6/4/2015		458.00 160258 MONTHLY PLANT SAMPLE ANALYSES		15394	458.00 ✓	Posted 0.00
193	DOLLAR GENERAL STORE-MSC-410526								
62245	10-11-6000	6/4/2015	6/4/2015		31.85 1000410292-BLEACH		21139	13.90 ✓	Posted 0.00
	10-11-6000				1000409698-SWIFFER & SUPPLIES			17.95 ✓	
								31.85 ✓	
62278	10-21-6190	6/4/2015	6/4/2015		66.25 1000412982-DETERGENT/PAPER TOWE		20760	18.50 ✓	Posted 0.00
	10-21-6190				1000410150-TOTE/BLEACH/TAPE/COND			47.75 ✓	
								66.25 ✓	
2628	TREVOR GARDNER								
62246	51-41-2911	6/4/2015	6/4/2015		99.95 REIMBURSEMENT FOR BOOTS		20663	99.95 ✓	Posted 0.00
262	GRAINGER CO								
62247	53-41-4360	6/4/2015	6/4/2015		1,450.07 9732031696 DRUM PUMP		22222	1,450.07 ✓	Posted 0.00
2573	HEATHER HARTMAN								
62279	26-00-5310	6/4/2015	6/4/2015		289.71 VERIZON REIMBURSEMENT-MARCH/AP		08674	289.71 ✓	Posted 0.00
62280	26-00-5800	6/4/2015	6/4/2015		268.08 REIMBURSEMENT FOR MILEAGE-474.50		08672	268.08 ✓	Posted 0.00
2860	HAYS MED								
62248	10-21-3000	6/4/2015	6/4/2015		25.00 PRE-EMPLOYMENT TEST		21135	25.00 ✓	Posted 0.00
1440	JCI INDUSTRIES, INC								
62249	51-41-4330	6/4/2015	6/4/2015		374.02 8106388 2 PUMP CASINGS		22493	374.02 ✓	Posted 0.00
1887	KMEA GRDA OPERATING FUND								
62250	53-41-6220	6/4/2015	6/4/2015		184,097.93 GRDA-BE-15-06 JUNE SERVICE		21155	184,097.93 ✓	Posted 0.00
556	KMEA WAPA OPERATING FUND								
62251	53-41-6220	6/4/2015	6/4/2015		19,201.51 WAPA-BL-15-05 MAY SERVICE		22215	19,201.51 ✓	Posted 0.00
395	KRIZ-DAVIS CO								
62252	53-43-6000	6/4/2015	6/4/2015		516.42 S101074570.001 INSULATORS & ELBOWS		22236	516.42 ✓	Posted 0.00
805	KRONE'S SERVICE CENTER, INC								
62253	10-13-4310	6/4/2015	6/4/2015		285.00 13059-TOW BILL-CAMERO		20915	175.00 ✓	Posted 0.00
	10-13-4310				13132-TOW BILL-CADILLAC			110.00 ✓	
								285.00 ✓	
405	LEAGUE OF KS MUNICIPALITIES								
62297	10-11-2400	6/4/2015	6/4/2015		25.00 15-1532 WEBINAR-BUDGETING-LOMAX		21158	25.00 ✓	Posted 0.00
2318	ANA LEON								
62254	10-12-3000	6/4/2015	6/4/2015		50.00 INTERPRETER FEES FOR 2 CASES		20802	50.00 ✓	Posted 0.00

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409 LIGHT & WATER UTILITIES (continued)										
62300	6/4/2015	6/4/2015	31,457.50					21159		Posted
	10-11-6220					ADMIN			1,936.19 ✓	0.00
	10-11-6220					ADMIN SHARE			35.25 ✓	0.00
	10-13-6220					PD SHARE			35.25 ✓	0.00
	51-41-6220					WATER SHARE			35.24 ✓	0.00
	10-14-6220					FIRE DEPT			253.74 ✓	0.00
	10-15-6220					TRANSPORTATION			494.99 ✓	0.00
	10-18-6220					PARKS & REC			4,406.20 ✓	0.00
	10-20-6220					CEMETERY			120.78 ✓	0.00
	10-22-6220					AIRPORT			307.67 ✓	0.00
	51-41-6220					WATER PLANT			5,844.88 ✓	0.00
	52-41-6220					SEWER PLANT			10,865.10 ✓	0.00
	53-41-6220					POWER PLANT			249.46 ✓	0.00
	51-43-6220					WATER SYSTEMS			198.06 ✓	0.00
	52-43-6220					SEWER SYSTEMS			198.05 ✓	0.00
	53-43-6220					SYSTEMS OP SHARE			198.05 ✓	0.00
	51-43-6220					SYSTEMS OP SHARE			28.70 ✓	0.00
	52-43-6220					SYSTEMS OP SHARE			28.70 ✓	0.00
	53-43-6220					SYSTEMS OP SHARE			28.70 ✓	0.00
	10-13-6220					PD SHARE			28.69 ✓	0.00
	53-43-6220					ELECTRIC SYSTEMS			56.74 ✓	0.00
	10-19-6220					NORTH CAMPUS			6,012.50 ✓	0.00
	10-21-6220					POOL			94.56 ✓	0.00
									31,457.50 ✓	0.00
424 MCHENRY ELECTRIC & SUPPLY										
62281	6/4/2015	6/4/2015	24.00		013949			20759		Posted
	10-18-6180					2 CYCLE OIL			24.00 ✓	0.00
459 MISSISSIPPI LIME CO										
62255	6/4/2015	6/4/2015	5,269.91		1204094			22494		Posted
	51-41-6170					25 TON QUICKLIME			5,269.91 ✓	0.00
342 MUNICIPAL SUPPLY INC. OF NEBRASKA										
62256	6/4/2015	6/4/2015	216.92		0590617-IN			20970		Posted
	51-43-6000					SS REPAIR CLAMPS			216.92 ✓	0.00
2301 NEX-TECH WIRELESS										
62257	6/4/2015	6/4/2015	94.88		3990584			21150		Posted
	25-00-7450					STREET DEPT.-PHONE BILL			94.88 ✓	0.00
527 PIERCE ELECTRONICS										
62258	6/4/2015	6/4/2015	32.00		28172			21136		Posted
	10-14-4340					RADIO REPAIR			32.00 ✓	0.00
62259	6/4/2015	6/4/2015	40.00		28165			22234		Posted
	53-41-3000					FCC LICENSE RENEWAL			40.00 ✓	0.00
2425 PROTOCOL, LLC										
62260	6/4/2015	6/4/2015	364.00					20920		Posted
	10-13-5310					MAY SERVICE			364.00 ✓	0.00
559 RELIABLE OFFICE SUPPLIES										
62261	6/4/2015	6/4/2015	60.98		BCT75500			20921		Posted
	10-13-6000					BLEACH/TOILET PAPER			60.98 ✓	0.00
2818 PATTY RUFENER										
62262	6/4/2015	6/4/2015	36.00					22227		Posted
	53-43-6000					CINNAMON ROLLS			9.00 ✓	0.00
	52-43-6000					CINNAMON ROLLS			9.00 ✓	0.00
	51-43-6000					CINNAMON ROLLS			9.00 ✓	0.00
	53-41-6000					CINNAMON ROLLS			9.00 ✓	0.00
									36.00 ✓	0.00
577 SALINA AREA TECHNICAL SCHOOL										
62263	6/4/2015	6/4/2015	134.00		ENV284			15395		Posted
	52-41-2400					WASTEWATER OP EXAM WORKSHOP			134.00 ✓	0.00
94 SCHENDEL PEST CONTROL										

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94	SCHENDEL PEST CONTROL (continued)										
62264	6/4/2015	6/4/2015	425.00					22228		Posted	
	53-43-6000					INSECT SPRAYING			106.25 ✓	0.00	
	52-43-6000					INSECT SPRAYING			106.25 ✓	0.00	
	51-43-6000					INSECT SPRAYING			106.25 ✓	0.00	
	10-13-6000					INSECT SPRAYING			106.25 ✓	0.00	
									425.00 ✓	0.00	
488	SCHWAB EATON BELOIT										
62265	6/4/2015	6/4/2015	4,703.50	15.025A				21142		Posted	
	30-00-3000					CONSTRUCTION INSPECTION N CAMPL			4,703.50 ✓	0.00	
62270	6/4/2015	6/4/2015	396.00	14.B017				21144		Posted	
	53-43-3000					ELECTRIC EASEMENT-SPENCER PEAR			396.00 ✓	0.00	
2845	SHOPKO STORES OPERATING CO., LLC										
62266	6/4/2015	6/4/2015	196.45	8212				21138		Posted	
	10-11-6110					PRINTER INK/FLASH DRIVES/WATER			196.45 ✓	0.00	
62282	6/4/2015	6/4/2015	18.59	9404				20765		Posted	
	10-18-6000					ANNUALS FOR MUNI			18.59 ✓	0.00	
628	SOLOMON VALLEY VET HOSPITAL PA										
62267	6/4/2015	6/4/2015	44.62	241667				20922		Posted	
	10-13-3510					DOG FOOD			44.62 ✓	0.00	
643	STANION WHSE ELECTRIC COMPANY										
62268	6/4/2015	6/4/2015	458.71					22235		Posted	
	53-43-6000					3859021-01-TERMINALS			115.39 ✓	0.00	
	53-43-6000					3859021-02-CONNECTORS & TERMINAL			83.38 ✓	0.00	
	53-43-6000					3854145-01-ELBQWS			259.94 ✓	0.00	
									458.71 ✓	0.00	
2846	TREKK DESIGN GROUP, LLC										
62269	6/4/2015	6/4/2015	335.04	15-00416				21145		Posted	
	51-41-3000					WATER TESTING FOR TASTE & ODOR			335.04 ✓	0.00	
1643	UNITED INDUSTRIES INC										
62283	6/4/2015	6/4/2015	836.35	0064831-IN				20768		Posted	
	10-21-4300					PROBE/FACE PLATE/PUMP/SHIPPING			836.35 ✓	0.00	
704	UNIVAR USA INC										
62271	6/4/2015	6/4/2015	1,098.11	WI611770				22500		Posted	
	51-41-6170					2100 LBS ALMN SULFATE			1,098.11 ✓	0.00	
2067	VERIZON WIRELESS SERVICES, LLC										
62272	6/4/2015	6/4/2015	45.02	9745798803				21152		Posted	
	53-41-5310					POWER PLANT STAND-BY PHONE			45.02 ✓	0.00	
62273	6/4/2015	6/4/2015	181.14	9745760345				21153		Posted	
	10-11-5310					ADMIN			115.68 ✓	0.00	
	10-20-5310					CEMETERY			65.46 ✓	0.00	
									181.14 ✓	0.00	
62274	6/4/2015	6/4/2015	132.91	9745791005				21151		Posted	
	53-43-5310					SYSTEMS			51.57 ✓	0.00	
	52-43-5310					SYSTEMS			40.67 ✓	0.00	
	51-43-5310					SYSTEMS			40.67 ✓	0.00	
									132.91 ✓	0.00	
2629	WAGeworks										
62275	6/4/2015	6/4/2015	16,455.14					21148		Posted	
	21-00-2035					2013 FSA PLAN RECONCILIATION			16,455.14 ✓	0.00	
722	WATTS AND SON										
62284	6/4/2015	6/4/2015	182.11	3636				20770		Posted	
	10-22-4300					PORT LIBRARY-URINAL REPAIR KIT			182.11 ✓	0.00	
660	WICHITA WINWATER WORKS CO., INC.										
62276	6/4/2015	6/4/2015	390.00	205085 00				20969		Posted	
	51-43-6000					BOX COVER W/LID WATER			390.00 ✓	0.00	

Accounts Payable Detail Listing

City of Beloit

Vend# Vendor Name

<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
	<u>Account#</u>			<u>Work Order</u>	<u>Description</u>		<u>Debit</u>	<u>Credit</u>

336,868.15 60 Non-voided payables listed.

Report Setup
AP - Accounts Payable Listing : Vendor Name
Filter Options
Starting: 6/4/2015
Ending: 6/4/2015
Banks: All
Payable Status: Posted, Printed, ACH, Recorded, Voided
All Vendors Selected

Beloit Fire Department

(Since 1886)

To: Beloit City Council
Mayor Tom Naasz
City Administrator Glenn Rodden

The Beloit Fire Department is requesting your approval on the specifications for a new pumper truck. This unit will replace a 1985 pumper truck. The specifications that are presented to you have been reviewed by the Fire Dept. and are what we need to replace the 30 year old truck. We request with your approval to move forward with the bidding process.



Blake Miller
Fire Chief

Bracket for Gas Line

BELOIT FIRE DEPARTMENT

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INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to provide a complete apparatus equipped as hereinafter and as specified with a view of obtaining the best results and the most acceptable apparatus for service in the 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 shall conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor. The manufacturer shall provide loose equipment only when specified by the customer. Otherwise, in accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of twenty-five (25) years.

Each bidder shall provide satisfactory evidence of their ability to construct the apparatus specified, and shall state the location of the factory where the apparatus is to be built. They shall also show that they are in a position to render prompt service and to furnish replacements parts.

Due to the severe service requirements the department will impose on the apparatus as specified, each bidder shall provide a list of at least six (6) departments serving populations of over 250,000 in which similar apparatus utilizing the brand of chassis proposed have been in service for over one year. This list shall include contact names and phone numbers.

Each bid shall be accompanied by a detailed set of Contractor's Specifications consisting of a detailed description of the apparatus and equipment proposed, and to which the apparatus being furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment.

QUALITY AND WORKMANSHIP

The design of the Apparatus shall embody the latest approved automotive engineering practices. The workmanship must be of the highest quality in its respective field. Special consideration will be given to the following points:

Accessibility of the various units, which require periodic maintenance; and ease of operation (including both pumping and driving); and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry loads as specified and to meet both on

BELOIT FIRE DEPARTMENT

and off road requirements and to speed conditions as set forth under Performance tests and requirements. Welding shall be employed in the assembly of the apparatus in a manner that will not prevent the ready removal of any component part for service or repair.

All steel welding shall follow (American Welding Society) requirements for AWS D1.1:2012 Structural Welding Code for welding steel structural assemblies. All aluminum welding shall follow (American Welding Society) requirements for AWS D1.2/D1.2M:2003 Structural Welding Code for any type structure made from aluminum structural alloys. All sheet metal welding shall follow (American Welding Society) AWS D9.1M/D9.1:2006 Structural Welding code for Arc/Braze requirements of non-structural materials. All pressure pipe welding shall follow (American Society of Mechanical Engineers) ASME IX/ ASME B31:2010 requirements to the qualification of procedures in welding and brazing, in accordance with the ASME Boiler and Pressure Vessel Code and the ASME B31 Code for Pressure Piping. Flux core arc welding to use alloy rods, type 7000, (American Welding Society) AWS standards A5.20-E70T1. The manufacturer shall be required to have an American Welding Society certified welding inspector in plant during testing operations within working hours to monitor weld quality.

Employees classified as welders shall be tested and certified to meet American Welding Society and American Society of Mechanical Engineers welding codes.

DELIVERY

To insure proper break-in of all components while still under warranty, the apparatus **shall be delivered under its own power**, rail or truck freight shall not be acceptable. A qualified delivery engineer representing the contractor shall deliver the apparatus and instruct the Fire Department personnel in the proper operation, care and maintenance of the equipment delivered.

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be conducted with the apparatus fully loaded to its estimated in-service weight and shall be capable of the following performance while on dry paved roads that are in good condition and for a continuous run of ten (10) miles or more, 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 be free from abnormal vibration or noise throughout the operating range of the apparatus. The successful bidder shall provide a Weight Certificate showing weights on front axle, rear axles and total weight for the completed apparatus at time of delivery.

- A. The apparatus shall be capable of accelerating to 35 MPH (55 km/hr) from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.
- B. The apparatus, fully loaded, shall be capable of obtaining a minimum top speed of 50 MPH (80 km/hr) on a level dry concrete highway with the engine not exceeding its governed RPM

BELOIT FIRE DEPARTMENT

(fully loaded).

- C. The service brakes shall be capable of stopping a fully loaded vehicle in 35ft (10.7 m) at 20 mph (32.2 km/hr) on a level concrete highway. The air brake system shall conform to Federal Motor Vehicle Safety Standards (FMVSS) 121.
- D. The apparatus, when fully loaded, shall have not less than 25 percent or more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.

The apparatus shall be tested and approved by the Underwriter's Laboratories Incorporated in accordance with their standard practices for pumping engines. The contractor shall provide copies of the Pump Manufacturer's Certification of hydrostatic test, the Engine Manufacturer current certified brake horsepower curve, and the Manufacturer's record of pumper construction details when delivered. The vendor, at their expense, shall have the Underwriter's Laboratories Incorporated conduct the tests required by the Underwriter Laboratories Incorporated (Guide for the Certification of Fire Department Pumper subject 822 dated 1995 or latest). A copy of all tests shall accompany the Apparatus. (For apparatus sold within Canadian ULC S515 / latest revision.)

INFORMATION REQUIRED

The manufacturer shall supply at time of delivery, a complete operation and maintenance manual covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment to specify the quantity and type of the following fluids used in the vehicle: Engine oil, engine coolant, and chassis transmission fluid, pump transmission lubrication fluid, pump primer fluid (if used) and drive axle lubrication fluid.

The manufacturer shall supply the final certification of GVWR and GAWR on a nameplate affixed to the vehicle.

A permanent plate in the driver's compartment shall be installed, specifying the seating capacity of the enclosed cab.

Signs that state "OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION" shall be provided and will be visible from each seated position. An accident prevention sign shall be located at the rear step area of the apparatus. It shall warn all personnel that standing on the step while apparatus is in motion shall be prohibited.

A nameplate indicating the chassis transmission shift selector position to be used when pumping shall be provided in the driving compartment and located so that it can be easily read from the driver's position.

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LIABILITY

The bidder, if their bid is accepted, shall defend any and all suits and assume all liability for the use of any patented device or article forming part of the apparatus or any appliance provided under the contract.

BID SPECIFICATION REQUIREMENTS

Item compliance shall be indicated in the "Yes/No" column of each item by all Bidders. Bidders shall submit a detailed proposal. Each bidder shall submit their proposals in the same arrangement as these specifications for ease of evaluation, comparison, and examination of compliance. Bid communications by letter only and/or written on a company letterhead, shall not be acceptable.

EXCEPTIONS TO SPECIFICATIONS

Exceptions shall be allowed if they are equal to or superior to that as specified and providing they are listed and entirely explained on a separate page entitled "Exceptions to Specifications". The exceptions list shall refer to specification page number and paragraph.

Proposals taking total exception to specifications or total exception to certain parts of the specifications will not be acceptable. The Apparatus shall be inspected upon completion for compliance with specifications. Deviations will not be tolerated and will be cause for rejection of Apparatus unless they were originally listed in bidder's proposal and accepted in writing by the department.

If the bidder takes an exception, on the exception page, the bidder must state an option price to bring their specifications into full compliance with the Department specifications. Failure to provide this information shall be cause to reject the proposal as being non-responsive. **An exception to these requirements shall not be tolerated.**

PURCHASER'S RIGHTS

The Purchaser reserves the right to accept or reject any or all bids as it deemed in their best interests.

GENERAL CONSTRUCTION

The apparatus shall be designed 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 will be carried without injury to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Agency.

BELOIT FIRE DEPARTMENT

The apparatus shall be designed so that the operator could perform all recommended daily maintenance checks easily without the need for hand tools. Apparatus components that interfere with repair or removal of other major components must be attached with fasteners (cap, screws, nuts, etc.) so that the components can be removed and installed with normal hand tools. These components must not be welded or otherwise permanently secured into place.

The GAWR and GVWR of the chassis shall be adequate to carry the fully equipped apparatus including all tanks filled, the specified hose load, unequipped personnel weight, ground ladders and a miscellaneous equipment allowance per NFPA criteria. It shall be the responsibility of the purchaser to provide the contractor with the weight of equipment to be carried if it is in excess of the allowance as set forth by NFPA.

The unequipped personnel weight shall be calculated at 250 lbs. per person times the maximum number of persons to ride on the apparatus. The height of the fully loaded vehicle's center of gravity shall not exceed the chassis manufacturer's maximum limit.

The front to rear weight distribution of the fully loaded vehicle shall be within the limits set by the chassis manufacturer. The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer, under full loads and all other loading conditions.

The difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped shall not exceed 7 percent.

The apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair.

Where special tools manufactured or designed by the contractor and are required to provide routine service on any component of the apparatus built or supplied by the contractor, such tools shall be provided with the apparatus.

Y__N__

BID/PROPOSAL DRAWINGS

For purposes of evaluation, the bidder shall provide a drawing illustrating, but not limited to, the overall dimensions, wheelbase, and overall length of the proposed apparatus and other specified equipment, shall be required to be included with the bidder's proposal package.

The drawings shall be large "D" size (minimum 24" x 36"). Smaller size drawings, "similar to" drawings or general sales drawings, shall not be acceptable. Failure to provide a bid evaluation drawing in accordance with these specifications shall be cause for rejection of the bid proposal.

Y__N__

BELOIT FIRE DEPARTMENT

APPROVAL/PRE-CONSTRUCTION DRAWINGS

After the award of the bid, the contractor shall provide detailed colored engineering drawings including, but not limited to, the overall dimensions, wheelbase, and overall length of the proposed apparatus for use at the pre-construction conference. The drawings shall include, but shall not be limited to the right, left, top, front and rear views of the apparatus. The Customer will sign the final approval drawing.

Y__N__

FINITE ELEMENT ANALYSIS AND TESTING

Finite Element Analysis has been utilized in evaluating and engineering the critical areas of the apparatus body. Prototype bodies have been subjected to rigorous testing over varied terrains simulating different environmental conditions. The purpose of such complex engineering methods of analysis shall be to ensure the longevity of the design by analyzing stress levels throughout the body and incorporating the structural supports wherever necessary.

There shall be a minimum of 3 different load cases (per DOT, FHWA, and TTMA recommended practice) applied and analyzed to properly display the different areas and levels of stresses that will be present under the various operating conditions of the apparatus. This is in addition to the static stress analysis. The analysis shall have included the weight of the structure plus an estimate of all the components that exist on a fully loaded apparatus (i.e. Tank, water, hose load, equipment in compartments, etc.).

Analysis shall also have been conducted on the mounting system for the apparatus body and pump house. Detailed colored drawings shall be supplied with the bidder's proposal.

Y__N__

SUPPLIED INFORMATION & EXTRAS

The apparatus manufacturer shall supply two (2) copies of apparatus manuals with all manufactured apparatus. The manuals shall include, but not be limited to: all component warranties, users' manuals and information for supplied products, apparatus engineering information including drawings and build prints, and whatever other pertinent information the manufacturer can supply to its customer regarding the said apparatus.

Included in the delivery of the unit, the manufacturer shall also include spare hardware and extra fasteners, paint for touch-up, information regarding washing and care procedures, as well as other recommendations for care and upkeep of the general apparatus.

The manufacturer shall also supply a manufacturer's record of apparatus construction details, including the following information:

Owner name and address;

Apparatus manufacturer, model, and serial number;

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Chassis make, model, and serial number;
GAWR of front and rear axles;
Front tire size and total rated capacity in pounds;
Rear tire size and total rated capacity in pounds;
Chassis weight distribution in pounds with water (if applicable) and manufacturer mounted equipment (front and rear)
Engine make, model, serial number, rated horsepower, related speed and no load governed speed;
Type of fuel and fuel tank capacity;
Electrical system voltage and alternator output in amps;
Battery make and model, capacity in CCA:
Paint numbers;
Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall vehicle (with the water tank full (if applicable) but without personnel, equipment, and hose):
Written load analysis and results of the electrical system performance tests;

Transmission make, model, and type;
Pump to drive through the transmission (yes or no);
Engine to pump gear ratio and transmission gear ratio used;
Pump make and model, rated capacity in gallons per minute, serial number, and number of stages;
Pump manufacturer's certification of suction capability;
Pump manufacturer's certification of hydrostatic test;
Pump manufacturer's certification of inspection and test for the fire pump;
Copy of the apparatus manufacturer's approval for stationary pumping applications;
Pump transmission make, model and serial number;
Priming device type;
Type of pump pressure control system;
The engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum no load governed speed;
Certification of water tank capacity;

Y ___ N ___

GENERAL WARRANTY

A warranty shall be offered for each new fire apparatus manufactured for a period of Two (2) years from the date of delivery, except for the commercial chassis and certain other components as noted in the next paragraph.

In the case of a commercial chassis being used, the warranty on the chassis, engine, transmission, tires, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made

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directly with the manufacturer by the customer.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities. Please see the official warranty document in the appendix (attached) for specific details.

Y__N__

STRUCTURAL BODY WARRANTY

A structural Aluminum body warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of ten (10) years.

Y__N__

PAINT WARRANTY

A ten (10) year Prorated Paint Warranty shall be included with the apparatus.

Y__N__

PUMP WARRANTY

Waterous Co shall provide a limited manufacturer's pump warranty to be free from defects in material and workmanship, under normal use and service, for a period of five (5) years from the date placed into service.

Please see the official warranty document in the appendix (attached) for specific details.

Y__N__

PLUMBING WARRANTY

A Stainless Steel Plumbing/Piping warranty shall be offered for each new fire apparatus manufactured for a period of ten (10) years from the date of delivery.

Y__N__

TANK WARRANTY

A lifetime tank warranty will be provided by the tank manufacturer, Pro Poly.

Y__N__

MULTI-PLEXED ELECTRICAL WARRANTY

A four (4) year limited (V-MUX) multiplex system warranty, of Weldon Technologies, Inc; shall be provided by the apparatus manufacture for parts and labor, while under normal use and service; against mechanical, electrical and physical defects from the date of installation.

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The warranty shall exclude; sensors, shunt interface modules, serial or USB kits, transceivers, cameras, GPS, and electrical display screens, which shall be limited to a period of one a (1) year repair parts and labor from the date of installation.

Y__N__

PUMP CERTIFICATION AND TESTING

The apparatus upon completion will be tested and certified by Underwriters Laboratories, Inc. The certification tests will follow the guide lines outlined in NFPA 1901 "Standard for Fire Apparatus".

There shall be multiple tests performed by the contractor and Underwriter's Laboratories when the apparatus has been completed. The manufacturer shall provide the completed Test Certificate(s) to the purchaser at time of delivery. The inspection services of Underwriters Laboratories are available to all bidders on an equal basis; therefore, no third party certification of testing results shall be acceptable.

The fire pump shall be mounted on the apparatus and shall have a minimum rated capacity of 250 gpm (1000 L/min) at 150 psi (1000 kPa) net pump pressure.

Where the apparatus is designed for pump in-motion operations, the vehicle drive engine and drive train shall be arranged so that the pump can deliver at least 20 gpm (76 L/min) at a gage pressure of 80 psi (550 kPa), while the fire apparatus is moving.

If the pumping system provided is rated at 3000gpm (12,000 L/min) or less, the pump shall be capable of delivering the following:

- (1) One hundred percent of rated capacity at 150 psi (1000 kPa) net pump pressure
- (2) Seventy percent of rated capacity at 200 psi (1400 kPa) net pump pressure
- (3) Fifty percent of rated capacity at 250 psi (1700 kPa) net pump pressure

If the pumping system provided is rated at greater than 3000 gpm (12,000 L/min), the pump shall be capable of delivering the following:

- (1) One hundred percent of rated capacity at 100 psi (700 kPa) net pump pressure
- (2) Seventy percent of rated capacity at 150 psi (1000 kPa) net pump pressure
- (3) Fifty percent of rated capacity at 200 psi (1400 kPa) net pump pressure

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If the fire pump has a rated capacity of 750 gpm (3000 L/min) or greater, the pump shall be tested after the pump and all its associated piping and equipment have been installed on the apparatus.

The tests shall include at least the pumping test, the pumping engine overload test, the pressure control system test, the priming device tests, and the vacuum test.

A test plate shall be provided at the pump operator's panel that gives the rated discharges and pressures together with the speed of the engine as determined by the certification test for each unit, the position of the parallel/series pump as used, and the governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve. The plate shall be completely stamped with all information at the factory and attached to the vehicle prior to shipping.

Pumping Test:

The test site shall be adjacent to a supply of clear water at least 4 ft. (1.2 m) deep, with the water level not more than 10 ft. (3 m) below the center of the pump intake, and close enough to allow the suction strainer to be submerged at least 2 ft. (0.6 m) below the surface of the water when connected to the pump by 20 ft. (6 m) of suction hose.

Tests shall be performed when conditions are as follows:

- (1) Air temperature: 0°F to 110°F (-18°C to 43°C)
- (2) Water temperature: 35°F to 90°F (2°C to 32°C)
- (3) Barometric pressure: 29 in. Hg (98.2 kPa), minimum (corrected to sea level)

Engine-driven accessories shall not be functionally disconnected or rendered inoperative during the tests.

The following devices shall be permitted to be turned off or not operating during the pump test:

- (1) Aerial hydraulic pump
- (2) Foam pump
- (3) Hydraulically driven equipment (other than hydraulically driven line voltage generator)
- (4) Winch
- (5) Windshield wipers
- (6) Four-way hazard flashers
- (7) Compressed air foam system (CAFS) compressor

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All structural enclosures, such as floorboards, gratings, grilles, and heat shields, not provided with a means for opening them in service shall be kept in place during the tests.

All test gauges shall meet the requirements for Grade A gauges as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*, and shall be at least size 3 1/2 per ASME B40.100. The pump intake gauge shall have a range of 30 in. Hg (100 kPa) vacuum to zero for a vacuum gauge, or 30 in. Hg (100 kPa) vacuum to a gauge pressure of 150 psi (1000 kPa) for a compound gauge. The discharge pressure gauge shall have a gauge pressure range of 0 psi to 400 psi (0 kPa to 2800 kPa). All pilot gauges shall have a gauge pressure range of at least 0 psi to 160 psi (0 kPa to 1100 kPa). All gauges shall be calibrated in the month preceding the tests using a dead-weight gauge tester or a master gauge meeting the requirements for Grade 3A or 4A gauges, as defined in ASME B40.100, *Pressure Gauges and Gauge Attachments*, that has been calibrated within the preceding year.

The engine speed-measuring equipment shall consist of a nonadjustable tachometer supplied from the engine or transmission electronics, a revolution counter on a checking shaft outlet and a stop watch, or other engine speed-measuring means that is accurate to within ± 50 rpm of actual speed.

If the apparatus is equipped with a fire pump rated at 750 gpm (3000 L/min) or greater but not greater than 3000 gpm (12,000 L/min), the pump shall be subjected to a 3 hour pumping test from draft consisting of 2 hours of continuous pumping at rated capacity at a minimum of 150 psi (1000 kPa) net pump pressure, followed by 1/2 hour of continuous pumping at 70 percent of rated capacity at a minimum of 200 psi (1400 kPa) net pump pressure and 1/2 hour of continuous pumping at 50 percent of rated capacity at a minimum of 250 psi (1700 kPa) net pump pressure and shall not be stopped until after the 2 hour test at rated capacity, unless it becomes necessary to clean the suction strainer.

If the apparatus is equipped with a fire pump rated at greater than 3000 gpm (12,000 L/min), the pump shall be subjected to a 3 hour pumping test from draft consisting of 2 hours of continuous pumping at rated capacity at 100 psi (700 kPa) net pump pressure, followed by 1/2 hour of continuous pumping at 70 percent of rated capacity at 150 psi (1000 kPa) net pump pressure and 1/2 hour of continuous pumping at 50 percent of rated capacity at 200 psi (1400 kPa) net pump pressure and shall not be stopped until after the 2 hour test at rated capacity, unless it becomes necessary to clean the suction strainer.

If the apparatus is equipped with a fire pump rated at less than 750 gpm (3000 L/min), the pump shall be subjected to a 50-minute pumping test from draft consisting of 30 minutes of continuous pumping at rated capacity at a minimum of 150 psi (1000 kPa) net pump pressure, followed by 10 minutes of continuous pumping at 70 percent of rated capacity at a minimum of 200 psi (1400 kPa) net pump pressure and 10 minutes of continuous pumping at 50 percent of rated capacity at a minimum of 250 psi (1700 kPa) net pump pressure and shall not be stopped until after the 30-minute test at rated capacity, unless it becomes necessary to clean the suction strainer.

BELOIT FIRE DEPARTMENT

Pumping Engine Overload Test:

If the pump has a rated capacity of 750 gpm (3000 L/min) or greater but not greater than 3000 gpm (12,000 L/min), the apparatus shall be subjected to an overload test consisting of pumping rated capacity at 165 psi (1100 kPa) net pump pressure for at least 10 minutes.

This test shall be performed immediately following the pumping test of rated capacity at 150 psi (1000 kPa).

The capacity, discharge pressure, intake pressure, and engine speed shall be recorded at least three times during the overload test.

Pressure Control System Test:

If the pump is rated at 3000 gpm (12,000 L/min) or less, the pressure control system on the pump shall be tested as follows:

- (1) The pump shall be operated at draft, delivering rated capacity at a discharge gauge pressure of 150 psi (1000 kPa).
- (2) The pressure control system shall be set in accordance with the manufacturer's instructions to maintain the discharge gauge pressure at 150 psi (1000 kPa) \pm 5 percent.
- (3) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.
- (4) The rise in discharge pressure shall not exceed 30 psi (200 kPa) and shall be recorded.
- (5) The original conditions of pumping rated capacity at a discharge gauge pressure of 150 psi (1000 kPa) shall be reestablished.
- (6) The discharge pressure gauge shall be reduced to 90 psi (620 kPa) by throttling the engine fuel supply, with no change to the discharge valve settings, hose, or nozzles.
- (7) The pressure control system shall be set according to the manufacturer's instructions to maintain the discharge gauge pressure at 90 psi (620 kPa) \pm 5 percent.
- (8) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.
- (9) The rise in discharge pressure shall not exceed 30 psi (200 kPa) and shall be recorded.

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(10) The pump shall be operated at draft, pumping 50 percent of rated capacity at a discharge gauge pressure of 250 psi (1700 kPa).

(11) The pressure control system shall be set in accordance with the manufacturer's instructions to maintain the discharge gauge pressure at 250 psi (1700 kPa) \pm 5 percent.

(12) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

(13) The rise in discharge pressure shall not exceed 30 psi (200 kPa) and shall be recorded.

If the pump is rated at greater than 3000 gpm (12,000 L/min), the pressure control system on the pump shall be tested as follows:

(1) The pump shall be operated at draft, delivering rated capacity at a discharge gauge pressure of 100 psi (700 kPa).

(2) The pressure control system shall be set in accordance with the manufacturer's instructions to maintain the discharge gauge pressure at 100 psi (700 kPa) \pm 5 percent.

(3) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

(4) The rise in discharge pressure shall not exceed 30 psi (200 kPa) and shall be recorded.

(5) The original conditions of pumping rated capacity at a discharge gauge pressure of 150 psi (1000 kPa) shall be reestablished.

(6) The pump shall be operated at draft, pumping 50 percent of rated capacity at a discharge gauge pressure of 200 psi (1400 kPa).

(7) The pressure control system shall be set according to the manufacturer's instructions to maintain the discharge gauge pressure at 200 psi (1400 kPa) \pm 5 percent.

(8) All discharge valves shall be closed not more rapidly than in 3 seconds and not more slowly than in 10 seconds.

(9) The rise in discharge pressure shall not exceed 30 psi (200 kPa) and shall be recorded.

Priming System Tests:

With the apparatus set up for the pumping test, the primer shall be operated in accordance with the manufacturer's instructions until the pump has been primed and is discharging water. This

BELOIT FIRE DEPARTMENT

test shall be permitted to be performed in connection with priming the pump for the pumping test.

The interval from the time the primer is started until the time the pump is discharging water shall be noted. The time required to prime the pump shall not exceed 30 seconds if the rated capacity is 1250 gpm (5000 L/min) or less. The time required to prime the pump shall not exceed 45 seconds if the rated capacity is 1500 gpm (6000 L/min) or more.

An additional 15 seconds shall be permitted in order to meet the requirements of 16.13.5.3 and 16.13.5.4 when the pump system includes an auxiliary 4 in. (100 mm) or larger intake pipe having a volume of 1 ft³ (0.03 m³) or more.

Vacuum Test:

The vacuum test shall consist of subjecting the interior of the pump, with all intake valves open, capped or plugged, and all discharge caps removed, to a vacuum of 22 in/Hg (75 kPa) by means of the pump priming system.

At altitudes above 2000 ft. (600 m), the vacuum attained shall be permitted to be less than 22 in/Hg (75 kPa) by 1 in/Hg (3.4 kPa) for each 1000 ft. (305 m) of altitude above 2000 ft. (610 m).

The vacuum shall not drop more than 10 in/Hg (34 kPa) in 5 minutes.

The primer shall not be used after the 5 minute test period has begun and the engine shall not be operated at any speed greater than the governed speed during this test.

Water Tank-to-Pump Flow Test:

A water tank-to-pump flow test shall be conducted as follows:

- (1) The water tank shall be filled until it overflows.
- (2) All intakes to the pump shall be closed.
- (3) The tank fill line and bypass cooling line shall be closed.
- (4) Hose lines and nozzles for discharging water at the rated tank-to-pump flow rate shall be connected to one or more discharge outlets.
- (5) The tank-to-pump valve(s) and the discharge valves leading to the hose lines and nozzles shall be fully opened.
- (6) The engine throttle shall be adjusted until the required flow rate $-0/+5$ percent is established.

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- (7) The discharge pressure shall be recorded.
- (8) The discharge valves shall be closed and the water tank refilled.
- (9) The bypass line shall be permitted to be opened temporarily, if needed, to keep the water temperature in the pump within acceptable limits.
- (10) The discharge valves shall be reopened fully and the time noted.
- (11) If necessary, the engine throttle shall be adjusted to maintain the discharge pressure recorded as noted in 16.13.7.1(7).
- (12) When the discharge pressure drops by 10 psi (70 kPa) or more, the time shall be noted and the elapsed time from the opening of the discharge valves shall be calculated and recorded.

Volume Discharge Calculation:

The volume discharged shall be calculated by multiplying the rate of discharge in gallons per minute (liters per minute) by the time in minutes elapsed from the opening of the discharge valves until the discharge pressure drops by at least 10 psi (70 kPa).

Other means shall be permitted to be used to determine the volume of water pumped from the tank such as a totalizing flowmeter, weighing the truck before and after, or refilling the tank using a totalizing flowmeter.

The rated tank-to-pump flow rate shall be maintained until 80 percent of the rated capacity of the tank has been discharge.

Engine Speed Advancement Interlock Test

The engine speed advancement interlock system shall be tested to verify that engine speed cannot be increased at the pump operator's panel unless there is throttle-ready indication.

If the apparatus is equipped with a stationary pump driven through split-shaft PTO, the test shall verify that the engine speed control at pump operator's panel cannot be advanced when either of the following conditions exists:

- (1) The chassis transmission is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.

BELOIT FIRE DEPARTMENT

- (2) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.

If the apparatus is equipped with a stationary pump driven through a transmission mounted PTO, front-of-engine crankshaft PTO, or engine flywheel PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:

- (1) The chassis transmission is in neutral, the parking brake is off, and the pump shift status in the driving compartment is disengaged.
- (2) The chassis transmission is in any other gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the "Pump Engaged" position.

If the apparatus is equipped with a pump driven by the chassis engine designed for both stationary pumping and pump-in-motion, the test shall verify that the engine speed control at pump operator's panel cannot be advanced when either of the following conditions exists:

- (1) The chassis transmission is in neutral, the parking brake is on, and the pump shift status in the driving compartment is disengaged.
- (2) The chassis transmission is in any other gear other than neutral, the parking brake is on, and the pump shift in the driving compartment is in the "Pump Engaged" or the "OK to Pump In-Motion" position.

If the apparatus is equipped with a stationary pump driven through transfer case PTO, the test shall verify that the engine speed control on the pump operator's panel cannot be advanced when either of the following conditions exists:

- (1) The chassis transmission is in neutral, the transfer case is in neutral, the parking brake is off, and the pump shift in the driving compartment is in the road position.
- (2) The chassis transmission is in neutral, the transfer case is engaged, the parking brake is off, and the pump shift in the driving compartment is in the road position.
- (3) The chassis transmission has been placed in the position for pumping as indicated on the label provided in the driving compartment, the parking brake is on, and the pump shift in the driving compartment is in the road position.

LOW-VOLTAGE ELECTRICAL SYSTEM PERFORMANCE TESTING

The apparatus low-voltage electrical system will be tested and certified. Tests shall be performed when the air temperature is between 0°F and 110°F (-18°C and 43°C). The three tests defined in NFPA shall be performed in the order in which they appear. Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest

BELOIT FIRE DEPARTMENT

charge current is maintained for 10 minutes. Failure of any of these tests shall require a repeat of the sequence.

Reserve Capacity Test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.

The engine shall be shut off and the minimum continuous electrical load shall be activated for 10 minutes.

All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test failure of the battery system.

Alternator Performance Test at Idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed.

The engine temperature shall be stabilized at normal operating temperature.

The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

Alternator Performance Test at Full Load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed.

The test duration shall be a minimum of 2 hours.

Activation of the load management system shall be permitted during this test.

An alarm sounded by excessive battery discharge, as detected by the system required in NFPA 13.3.4, or a system voltage of less than 11.8 V dc for a 12 V nominal system or 23.6 V dc for a 24 V nominal system, for more than 120 seconds, shall be considered a test failure.

Low Voltage Alarm Test:

Following the above test, a Low Voltage Alarm Test will be performed in the manner prescribed.

BELOIT FIRE DEPARTMENT

With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

The battery voltage shall be measured at the battery terminals.

The test shall be considered a failure if the alarm has not yet sounded 140 seconds after the voltage drops to 11.70V for a 12 V nominal system or 23.4 V for a 24 V nominal system.

The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

Y__N__

FIRE STATION PRECONSTRUCTION CONFERENCE

The factory authorized Distributor shall be required, prior to manufacturing, to have a pre construction conference at the fire departments station with individuals from the __Beloit Fire Department to finalize all construction details.

Y__N__

ON-LINE CUSTOMER INTERACTION

The manufacture shall provide the capability for online access through the manufacture's website. The customer shall be able to view digital photos of their apparatus in the specified phases of construction. The following phases will be captured and displayed on the manufacture's website:

4. Chassis
5. Body – Prior to Paint
6. Body – Painted
7. Pump and Plumbing
8. Assembly – 80% Complete

Due to the complex nature of fire apparatus and the importance of communication between the manufacture and customer, this line item is considered a critical requirement.

Y__N__

MAXIMUM OVERALL LENGTH REQUIREMENT

The apparatus specified shall be constructed with no restrictions to the maximum overall length.

Y__N__

MAXIMUM OVERALL HEIGHT REQUIREMENT

The apparatus specified shall be constructed with no restrictions to the maximum overall height.

BELOIT FIRE DEPARTMENT

Y__N__

MAXIMUM OVERALL WIDTH OF NINETY-NINE (99) INCHES

The apparatus specified shall be constructed as detailed and shall NOT exceed a Maximum Overall Width of Ninety-nine (99") inches.

This dimension shall include the primary construction of the apparatus body and chassis cab. Any peripherals that are 'removable' shall not be incorporated into this measurement.

Items that are considered 'removable' are: Rub Rails, Fenderettes, Mirrors, Lights, Handrails, Front Bumpers, Etc.

Y__N__

MAXIMUM WHEEL BASE REQUIREMENT

The apparatus specified shall be constructed with no restrictions to the maximum wheel base.

Y__N__

Model Profile

2016 4400 SBA 4X2 (MA035)

APPLICATION: Fire/Pumper (Emergency)

MISSION: Requested GVWR: 38000. Calc. GVWR: 38000

Calc. Start / Grade Ability: 25.15% / 2.81% @ 55 MPH

Calc. Geared Speed: 76.5 MPH

DIMENSION: Wheelbase: 207.00, CA: 139.90, Axle to Frame: 47.00

ENGINE, DIESEL: {Navistar N9} EPA 10, SCR, 330 HP @ 2000 RPM, 950 lb-ft Torque @ 1200

RPM, 2200 RPM Governed Speed, 330 Peak HP (Max)

TRANSMISSION,

AUTOMATIC:

{Allison 3000EVS_P} 5th Generation Controls; Close Ratio, 5-Speed; With Overdrive, Includes Oil Level Sensor, With Provision for PTO, Less Retarder,

Max. GVW N/A

CLUTCH: Omit Item (Clutch & Control)

AXLE, FRONT NON-DRIVING: {Navistar Select} Wide Track, I-Beam Type, 12,000-lb Capacity

AXLE, REAR, SINGLE: {Dana Spicer S26-190} Single Reduction, 26,000-lb Capacity, R Wheel Ends

Gear Ratio: 4.78

CAB: Conventional

TIRE, FRONT: (2) 11R22.5 G661 HSA (GOODYEAR) 497 rev/mile, load range G, 14 ply

TIRE, REAR: (4) 12R22.5 G282 MSD (GOODYEAR) 481 rev/mile, load range H, 16 ply

SUSPENSION, RR, SPRING,

SINGLE:

Vari-Rate; 31,000-lb Capacity, With 4500 lb Auxiliary Rubber Spring

PAINT: Cab schematic 100GA

Location 1: 2584, Red (Custom)

Chassis schematic N/A

December 03, 2014

1 Proposal: 10209-01Code Description

MA03500 Base Chassis, Model 4400 SBA 4X2 with 207.00 Wheelbase, 139.90 CA, and 47.00 Axle

BELOIT FIRE DEPARTMENT

to Frame.

1570 TOW HOOK, FRONT (2) Frame Mounted

1CAG FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.250" x 3.610" x 0.375" (260.4mm x 91.7mm x 9.5mm); 456.0" (11582mm) Maximum OAL

1LNN BUMPER, FRONT Full Width, Aerodynamic, Chrome Plated Steel; 0.142" Material Thickness

1WEJ WHEELBASE RANGE 199" (505cm) Through and Including 254" (645cm)

2AUX AXLE, FRONT NON-DRIVING {Navistar Select} Wide Track, I-Beam Type, 12,000-lb Capacity

3ADC SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 12,000-lb Capacity; With Shock Absorbers

Includes

: SPRING PINS Rubber Bushings, Maintenance-Free

Notes

: The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.

4091 BRAKE SYSTEM, AIR Dual System for Straight Truck Applications

Includes

: BRAKE LINES Color and Size Coded Nylon

: DRAIN VALVE Twist-Type

: GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster

: PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel

: PARKING BRAKE VALVE For Truck

: QUICK RELEASE VALVE Bendix On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4

: SLACK ADJUSTERS, FRONT Automatic

: SLACK ADJUSTERS, REAR Automatic

: SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4

Notes

: Front and Rear Dust Shields not Included

: Rear Axle is Limited to 19,000-lb GAWR with Code 04091 BRAKE SYSTEM, AIR and Code 04NCL BRAKES, REAR, AIR CAM Regardless of Axle/Suspension Ordered.

: Rear Axle is Limited to 20,000-lb GAWR with Code 04091 BRAKE SYSTEM, AIR and Code 04NCG BRAKES, REAR, AIR CAM Regardless of Axle/Suspension Ordered.

: Rear Axle is Limited to 23,000-lb GAWR with Code 04091 BRAKE SYSTEM, AIR and Standard Rear Air Cam Brakes Regardless of Axle/Suspension Ordered.

4722 DRAIN VALVE {Bendix DV-2} Automatic; With Heater; for Air Tank

Includes

: DRAIN VALVE Mounted in Wet Tank

4773 BRAKE SHOES, REAR Cast

Notes

: Provides Rear Axle GAWR Up to 26,000-Lb.

: The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.

Vehicle Specifications December 03, 2014

2016 4400 SBA 4X2 (MA035)

2 Proposal: 10209-01 Code Description

4AZS AIR BRAKE ABS {Bendix AntiLock Brake System} With Electronic Stability Program (4-Channel) With Automatic Traction Control

4EBT AIR DRYER {Bendix AD-IP} With Heater

Includes

BELOIT FIRE DEPARTMENT

: AIR DRYER LOCATION Inside Left Rail, Back of Cab

4ESX BRAKE CHAMBERS, FRONT AXLE {Haldex} 20 SqIn

4EVL BRAKE CHAMBERS, REAR AXLE {Haldex GC3030LHDHO} 30/30 Spring Brake

Includes

: BRAKE CHAMBERS, SPRING (2) Rear Parking; WITH TRUCK BRAKES: All 4x2, 4x4;

WITH TRACTOR BRAKES: All 4x2, 4x4; 6x4 & 6x6 with Rear Tandem Axles Less Than 46,000-lb. or GVWR Less Than 54,000-lb.

4JCJ BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0"; Includes 20 Sq. In. Long Stroke Brake Chambers

Notes

: Front Axle with 14,000-lb GAWR is Limited to 13,200-lb GAWR when used in Conjunction with 15" BRAKES, FRONT, AIR CAM.

: The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.

4NDB BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake

Notes

: The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.

4SBC AIR COMPRESSOR {Bendix Tu-Flo 550} 13.2 CFM Capacity

4VGA AIR DRYER LOCATION Mounted Outside Right Rail, Forward of Front Wheel

4VJE AIR TANK LOCATION (2) : Mounted Inline Under Left Rail, Back of Cab

5710 STEERING COLUMN Tilting and Telescoping

5CAL STEERING WHEEL 2-Spoke, 18" Diam., Black

5PSM STEERING GEAR {Sheppard HD94} Power

7BET EXHAUST SYSTEM Switchback Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; for use with Single Long VERTICAL Pipe, Frame Mounted Right Side

Back of Cab

7SDM ENGINE EXHAUST BRAKE for Navistar N9/10 I6 Engines; Electronically Activated

7WBZ TAIL PIPE Horizontal, Exits Right Side Outside of Body, At Rear Wheels

7WZX SWITCH, FOR EXHAUST 3 Position, Momentary, Lighted Momentary, ON/CANCEL,

Center Stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter

Regeneration When Switch is Moved to ON While Engine is Running, Resets When Ignition is Turned OFF

8000 ELECTRICAL SYSTEM 12-Volt, Standard Equipment

Includes

: BATTERY BOX Steel

: DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab

: FUSES, ELECTRICAL SAE Blade-Type

: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover

: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever

: JUMP START STUD Located on Positive Terminal of Outermost Battery

: PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light

Vehicle Specifications December 03, 2014

2016 4400 SBA 4X2 (MA035)

3 Proposal: 10209-01 Code Description

: STARTER SWITCH Electric, Key Operated

: STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector

: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature

: TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted

BELOIT FIRE DEPARTMENT

: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted
: WIRING, CHASSIS Color Coded and Continuously Numbered
8518 CIGAR LIGHTER Includes Ash Cup
8630 IGNITION SWITCH Keyless
8GWY ALTERNATOR {Leece-Neville 14931PAH} Brush Type, 12 Volt 320 Amp. Capacity, Pad Mount
8HAB BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/ Accessory Power/Ground and Sealed Connector for Stop/Turn
8MKL BATTERY SYSTEM {International} Maintenance-Free, (3) 12-Volt 1950CCA Total
8THB BACK-UP ALARM Electric, 102 dBA
8VAY HORN, ELECTRIC Disc Style
8WCL HORN, AIR Black, Single Trumpet, Air Solenoid Operated
8WGL WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time
8WPZ TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights
8WRB HEADLIGHTS ON WWIPERS Headlights Will Automatically Turn on if Windshield Wipers are turned on
8WTK STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection
8WWJ INDICATOR, LOW COOLANT LEVEL With Audible Alarm
8WZK HEADLIGHTS Halogen; Composite Aero Design for Two Light System
8XAH CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses
8XDU BATTERY BOX Steel, With Aluminum Cover, 14" Wide, 3 Battery Capacity, Mounted Left Side Under Cab
9HAN INSULATION, UNDER HOOD for Sound Abatement
9HBM GRILLE Stationary, Chrome
9HBN INSULATION, SPLASH PANELS for Sound Abatement
9WAY FRONT END Tilting, Fiberglass, With Three Piece Construction
9WBT GRILLE EMBER SCREEN Mounted to Grille and Cowl Tray to Keep Hot Embers out of Engine and HVAC Air Intake System
10060 PAINT SCHEMATIC, PT-1 Single Color, Design 100
Includes
: PAINT SCHEMATIC ID LETTERS "GA"
10761 PAINT TYPE Base Coat/Clear Coat, 1-2 Tone
10771 PAINT CLASS Single Custom Color
10WBE KEYS - ALL ALIKE, ID Z-001
Vehicle Specifications December 03, 2014
2016 4400 SBA 4X2 (MA035)
4 Proposal: 10209-01 Code Description
11001 CLUTCH Omit Item (Clutch & Control)
12NWE ENGINE, DIESEL {Navistar N9} EPA 10, SCR, 330 HP @ 2000 RPM, 950 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed, 330 Peak HP (Max)
Includes
: AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated (Air Brake Chassis Only)
: ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for MaxxForce and Navistar Engines
: COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM

BELOIT FIRE DEPARTMENT

Control

- : CRUISE CONTROL Electronic; Controls Integral to Steering Wheel
- : ENGINE OIL DRAIN PLUG Magnetic
- : ENGINE SHUTDOWN Electric, Key Operated
- : FUEL FILTER Included with Fuel/Water Separator
- : FUEL/WATER SEPARATOR Fuel/Water Separator and Fuel Filter in a Single Assembly;
With Water-in-Fuel Sensor; Engine Mounted
- : GOVERNOR Electronic
- : OIL FILTER, ENGINE Spin-On Type
- : WET TYPE CYLINDER SLEEVES
- 12THT FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed With Residual Torque
Device for Disengaged Fan Speed

Includes

- : FAN Nylon

Notes

- : Recommend Code 12THT when using front mount obstructions (winches, cones, reels,
etc.) that restrict air flow through the radiator.
- 12UAW RADIATOR Aluminum; 2-Row, Cross Flow, Over Under System, 1045 SqIn Louvered, With
373 SqIn CAC, With In Tank Oil Cooler
- 12UNR FEDERAL EMISSIONS EPA, OBD and GHG Certified for Calendar Year 2015; N9 & N10
Engines

12VBR AIR CLEANER With Service Protection Element

Includes

- : GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted
- 12VXU THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic, Stationary Pre-
Set, Two Speed Settings; Mounted on Steering Wheel
- 12VZA ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder
Installation of PTO Controls; With Ignition Switch Control for MaxxFlex and Navistar post
2007 Emissions Electronic Engines
- 12WYK ENGINE WATER COOLER {Sen-Dure} Auxiliary, For Use With Fire Trucks
- 12WZD EMISSION COMPLIANCE Engine Shutdown System Exempt Vehicles, Complies With
California Clean Air Regulations
- 13AUL TRANSMISSION, AUTOMATIC {Allison 3000EVS_P} 5th Generation Controls; Close
Ratio, 5-Speed; With Overdrive, Includes Oil Level Sensor, With Provision for PTO, Less
Retarder, Max. GVW N/A
- 13WBL TRANSMISSION SHIFT CONTROL {Allison} Push-Button Type; for Allison 3000 & 4000
Series Transmission

13WLP TRANSMISSION OIL Synthetic; 29 thru 42 Pints

Vehicle Specifications December 03, 2014

2016 4400 SBA 4X2 (MA035)

5 Proposal: 10209-01 Code Description

13WUZ ALLISON SPARE INPUT/OUTPUT for Emergency Vehicle Series (EVS), 127/198 Includes
J1939 Based Auto Neutral; Fire/Pumper, Tank, Aerial/Ladder

13WYU SHIFT CONTROL PARAMETERS Allison 3000 or 4000 Series Transmissions, 5th
Generation Controls, Performance Programming

14AHK AXLE, REAR, SINGLE {Dana Spicer S26-190} Single Reduction, 26,000-lb Capacity, R
Wheel Ends . Gear Ratio: 4.78

Includes

- : REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle

Notes

- : The following features should be considered when calculating Rear GAWR: Rear Axles;
Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special

BELOIT FIRE DEPARTMENT

Rating, GAWR; Wheels; Tires.

: When Specifying Axle Ratio, Check Performance Guidelines and TCAPE for Startability and Performance

14VAJ SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 31,000-lb Capacity, With 4500 lb Auxiliary Rubber Spring

Notes

: The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.

15SXJ FUEL TANK Top Draw; Non-Polished Aluminum, 24" Diam., 50 U.S. Gal., 189 L Capacity, Mounted Left Side Under Cab

15WCN DEF TANK 5 U.S. Gal. Capacity; Frame Mounted Outside Left Rail, Under Cab

16030 CAB Conventional

Includes

: ARM REST (2) Molded Plastic; One Each Door

: CLEARANCE/MARKER LIGHTS (5) Flush Mounted

: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window

: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel

: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted

: GLASS, ALL WINDOWS Tinted

: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side

: GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side

: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color

: STEP (4) Two Steps Per Door

16400 SEAT, PASSENGER Omit Item

16HBA GAUGE CLUSTER English With English Electronic Speedometer

Includes

: GAUGE CLUSTER (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter

: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout

: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)

Vehicle Specifications December 03, 2014

2016 4400 SBA 4X2 (MA035)

6 Proposal: 10209-01 Code Description

16HCK SEATBELT WARNING PREWIRE Includes Seat Belt Switches and Seat Sensors for all Belted Positions in the Cab and a Harness Routed to the Center of the Dash for the

Aftermarket Installation of the Data Recorder and Seatbelt Indicator Systems, for 1 to 3 Seat Belts

16HGH GAUGE, OIL TEMP, ALLISON TRAN

16HHE GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} With Black Bezel Mounted in Instrument Panel

16HKT IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster

16HLJ GAUGE, DEF FLUID LEVEL

16JXG SEAT, FRONT BENCH {National} Full Width; Vinyl, With Fixed Mid Back

16SDC GRAB HANDLE (2) Chrome Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry, Mounted Left and Right, Each Side at "B" Pillar

16SDU MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Thermostatically Controlled Heated Heads, Power Both Sides, Clearance Lights LED, Bright Finish Heads & Brackets

16VBZ SEAT BELT All Red; 1 to 3

BELOIT FIRE DEPARTMENT

16WCS HEATER {Blend-Air} with Defroster

Includes

- : HEATER HOSES Premium
- : HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps
- 16WJS INSTRUMENT PANEL Center Section, Flat Panel
- 16WKY HVAC FRESH AIR FILTER
- 16WLE STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door
- 16WRX CAB INTERIOR TRIM Deluxe

Includes

- : "A" PILLAR COVER Molded Plastic
- : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering
- : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket
- : DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors
- : FLOOR COVERING Rubber, Black
- : HEADLINER Soft Padded Cloth
- : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section
- : STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door
- : SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console
- 16WSK CAB REAR SUSPENSION Air Bag Type
- 27DMC WHEELS, FRONT DISC; 22.5" Polished Aluminum, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs

Notes

- : Aluminum Wheels not Painted or Coated
- Compatible Tire Sizes: 11R22.5, 12R22.5, 255/70R22.5, 255/80R22.5, 265/75R22.5, 275/70R22.5, 275/80R22.5, 295/75R22.5, 295/80R22.5
- 28DMC WHEELS, REAR DUAL DISC; 22.5" Polished Aluminum, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs

Notes

Vehicle Specifications December 03, 2014

2016 4400 SBA 4X2 (MA035)

7 Proposal: 10209-01 Code Description

: Aluminum Wheels not Painted or Coated

: Compatible Tire Sizes: 11R22.5, 12R22.5, 255/70R22.5, 255/80R22.5, 265/75R22.5, 275/70R22.5, 275/80R22.5, 295/75R22.5, 295/80R22.5

: Polished Surface Outside Dual Only

7372138107 (2) TIRE, FRONT 11R22.5 G661 HSA (GOODYEAR) 497 rev/mile, load range G, 14 ply

7382158105 (4) TIRE, REAR 12R22.5 G282 MSD (GOODYEAR) 481 rev/mile, load range H, 16 ply

Cab schematic 100GA

Location 1: 2584, Red (Custom)

Chassis schematic N/A

Services Section:

40109 WARRANTY Standard for Durastar 1000/4000 Series, Effective with Vehicles Built

January 2, 2014 or Later, CTS-2475O

2016 4400 SBA 4X2 (MA035)

BELOIT FIRE DEPARTMENT

DRIVE LINE MODIFICATION

The chassis drive line shall be modified from its OEM Status to accommodate any changes required by the OEM for wheelbase, pump installation, or otherwise.

Y__N__

ROCKER SWITCH PANEL

All specified lighting fixtures and electrical components shall be activated by Carling V-series rocker style switches. The switches shall be located on a separate embossed electrical panel, fabricated with aluminum complete with backlit name tags describing the function of each individual switch. An internally lighted red rocker switch shall be furnished on the left and identified as the "MASTER WARNING".

Y__N__

ELECTRICAL CONTROL CENTER CONSOLE

The rocker switch panel shall be mounted on a custom fabricated electrical control center console mounted below the dash between the driver and officer. Other components such as open door warning light, pump shift controls, vacuum fluorescent display, siren head controller, etc. may be mounted on the console as well (depending on space required). If space isn't available on the console, the remaining controls shall be mounted on the cab dash immediately above the console for access by both the driver and officer.

The electrical control center console shall be fabricated of 1/8" smooth aluminum.

The console shall house a majority of the electrical hardware required to serve chassis electrical functions. For ease of service, the hardware shall be accessed by a removable panel on the front of the console. The 1/8" aluminum cover shall be securely fastened and easily removed by a series of threaded fasteners.

Y__N__

BATTERY SWITCH - LEVER STYLE

There shall be a Cole Hersee #9500 battery disconnect switch installed to activate the battery system. There shall be a green "battery on" pilot light located adjacent to the switch and visible from the drivers' position.

Y__N__

BACK UP ALARM

An electronic backup alarm shall be installed. It shall be 97 decibels and actuate automatically when transmission gear selector is placed in reverse.

BELOIT FIRE DEPARTMENT

Y__N__

HAZARD LIGHT IN CAB

There shall be a LED "Door Open" indicator light provided and installed in the chassis cab. The light shall be installed on the cab dash between the driver and officer (providing space availability) and shall activate when the parking brake is released and a compartment door or any additional specified accessible devices are not in the completely closed positions.

A warning placard shall be installed in the apparatus cab near the light, stating "Do Not Move Apparatus When Light Is On."

Y__N__

TIRE PRESSURE EQUALIZATION SYSTEM

The dual rear tires shall include the Crossfire dual tire equalization system provided on both sets of dual tires on the rear axle. The Crossfire pressure system shall equalize and monitor the valve mounted between the dual tires. This shall bolt easily to the drive axle end allowing air to flow freely from one tire to the other, maintaining equal tire pressure and load distribution. The Crossfire system shall maximize tire life, decrease rolling resistance for increased fuel mileage and improve stability braking and overall safety.

The tire pressure indicators shall be provided directly from Crossfire upon completion and submission of the enclosed [Voucher] document provided with the apparatus manuals.

TIRE PRESSURE INDICATOR

There shall be a tire pressure indicator at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

Y__N__

RETRO-REFLECTIVE STRIPING

Retro-reflective striping shall be added to the inside of the cab doors in accordance to NFPA requirements.

Y__N__

VEHICLE DATA RECORDER (VDR)

A Weldon, Model number 6444-0000-00, Vehicle Data Recorder which collects and stores essential vehicle data shall be provided. Reviewing the information is made easy with an intuitive computer application.

The following features shall be included:

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Recorded Data Includes: Vehicle Speed, Acceleration, Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied Status, Seat Belt Status, Master Optical Warning Switch, Park Brake, Service Brake, Time, Date and Engine Hours.

Password Protected by the customer

Six (6) seat position inputs for occupied and belts buckled. Additional six (6) seat expansion module available (#6020-0000-00)

Easily interfaces with traditional wiring, V-MUX™ or other multiplexing systems

Data is extracted by a 05023100 standard, mini USB cable

Use in conjunction with the Occupant Restraint Indicator or V-MUX™ multiplex system

Occupant Restraint Indicator

An Occupant Restraint Indicator, model number 6204-0000-00 shall be provided.

Designed to alert driver and officer, this module will indicate where restraints of occupied seats are properly fastened keeping personnel safe.

The following features shall be included:

Low profile, compact size

Supports commercial and custom cab seating layouts; up to 12 seats

Dimming feature adjusts indicator intensity to synchronize with dash lights

Built-in audible alarm

Standard 4 year warranty

Y__N__

EXHAUST

The chassis shall have a vertical exhaust system piped behind the chassis cab. The exhaust system shall have a chrome plated guard with grab handle on the outside of the guard. The top exposed portion of the exhaust stack shall be chrome plated and angle to the outside of the vehicle.

Y__N__

CAB STEP OVERLAYS

The OEM two (2) door chassis cab steps shall be replaced or enhanced with embossed aluminum diamond plate overlays.

The OEM fuel tank, battery box, and other equipment located directly under the cab doors shall be covered by an overlay to provide an aesthetically pleasing look.

If OEM stepping areas are not suitable, stepping surfaces shall be fabricated of embossed

Y__N__

BELOIT FIRE DEPARTMENT

aluminum diamond plate to provide a positive NFPA 1901 compliant 'slip resistant' surface. Provisions shall be included for ease of access to any regularly serviced or utilized components.

Y__N__

COMMERCIAL CAB FACTORY FINISH

The chassis cab shall have a factory finish.

Y__N__

ENGINE COMPARTMENT LIGHTS

There shall be one (1) 12 volt work light(s), Weldon LED light(s) model #2631-0000-30, installed in the engine compartment. Each light shall have an on/off switch.

Y__N__

FIRE EXTINGUISHER-INTERIOR OF CAB LOCATION

One (1) 2.5 lb Amerex ABC Extinguisher(s) shall be supplied with the apparatus and located inside the chassis cab.

Y__N__

BATTERY CHARGER

A Kussmaul Electronics Auto Charge 1000 model #091-56-12D, 15 amp battery charger with bar graph style display shall be provided and installed on the apparatus.

The battery charger shall automatically regulate operation output to a single battery bank. A built in sensing circuit shall check the battery voltage 120 times per second, to compensate for voltage drop in charging wires and provide quick recharge, with no overcharge. A separate 3 amp "Battery Saver" output eliminates drain on the battery when in station and automatically disconnects auxiliary loads from the battery when the charger is energized.

Input: 120 Vac, 50 Hz, 3.5 Amps Max

Input Fuse: 6 Amps, Fast Acting

Output: 12 Vdc, 15 Amps

Output Fuse: (Recommended): 30 Amps

Battery Saver Overload Indicator: Indicates Battery Savor Exceeded 3 Amps.

Warranty: 3 Years

Y__N__

A 120 volt, 20 amp Super Auto Eject model #091-55-20-120 shall be provided and installed on the apparatus.

The auto eject shall be completely sealed to prevent contamination of the mechanism by road dirt and debris, ensuring long reliable life even when mounted in the most severe environment.

BELOIT FIRE DEPARTMENT

A novel internal switch arrangement shall close and open the 120 Volt A.C. circuit after the mating connector is inserted, and before the connector is removed. This will eliminate arcing at the connector contacts, and assure long contact life. The Auto Eject shall be connected to the starter circuit, so that ejection occurs when the engine is cranked. The female connector shall be shipped loose to be installed on the shoreline cord.

Y__N__

SHORELINE CONNECTED TO DUPLEX RECEPTACLE

The shoreline shall be connected to the duplex receptacle(s) as specified. The receptacle(s) may then be used to charge flashlights, radios, and other miscellaneous 120 v components.

Y__N__

Two (2) NEMA 5-15 120V/15A shoreline powered duplex receptacle with weather resistant cover shall be located as specified below:

Y__N__

- One (1) shall be located on the forward wall of the right front upper compartment.

Y__N__

- One (1) inside the chassis cab behind the driver's seat.

Y__N__

The shoreline connection shall be installed under the driver's door area at the lower step level, and placed forward of the immediate stepping area if space allows. There shall be a total quantity of one (1).

Y__N__

AIR COMPRESSOR

A Kussmaul Electronics Auto Pump model #091-9B-1, 120 volt auxiliary air compressor shall be wired directly to the shoreline to ensure the apparatus air brake system is properly pressurized for immediate dispatch from the station.

The compressor shall have pressure switch regulated operation that automatically senses low pressure in the air system and restores proper pressure to prevent brake lock-up.

The compressor shall have sealed ball bearings for long service life.

Input: 120 Vac @ 60 Hz, 4.2 Amps

Output: .76 CFM @ Open Flow 100 PSI Max (7 bar)

Motor Type: Shaded Pole AC

Horsepower 1/8 HP

Pressure Rating Max 100 PSI (7 bar)

Warranty 1 Year

BELOIT FIRE DEPARTMENT

Y__N__

AIR TANK DRAIN CABLES (extended)

There shall be manual pull air tank drain cables provided with the apparatus. The cables shall be extended to the outer edge of the apparatus to facilitate draining moisture from the chassis air tanks. A label shall be affixed indicating "Air Tank Drain".

Y__N__

SIREN

One (1) Whelen electronic siren(s), model #295SLSA1 shall be provided and installed on the apparatus.

The siren shall be 100-200 watts and feature wail, yelp, phaser, air horn and manual wail. The microphone shall have noise canceling circuitry and Public Address override. The siren and hard wired microphone shall be installed with-in reach of the driver and officer

Y__N__

SIREN SPEAKER

One (1) Cast Products model #SAD4318 watt siren speaker(s) shall be provided and installed on the apparatus as specified below:

Y__N__

One (1) speaker shall be installed in the front bumper on the left side.

Y__N__

AIR HORNS

There shall be two (2) chrome plated air horns installed on the apparatus. The air horns shall be manufactured by Grover and be Stuttertone model #1510.

Y__N__

The air horn(s) shall be mounted on the chassis hood.

Y__N__

The air horns shall be actuated by one (1) foot switch installed on the driver's side.

Y__N__

CHASSIS REQUIRED LABELING

Signs that state "Occupants must be seated and belted when apparatus is in motion" shall be provided and installed in the cab and be visible from all seating positions.

There shall be a lubrication plate mounted inside cab listing the type and grade of lubrication

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used in the following areas on the apparatus and chassis:

- Engine oil
- Engine Coolant
- Transmission Fluid
- Pump Transmission Lubrication Fluid (if applicable)
- Drive Axle Lubrication Fluid
- Generator Lubrication Fluid (if applicable)
- Tire Pressures

Y__N__

APPARATUS INFORMATION LABEL

A high-visibility label shall be provided and installed in a location clearly detectable to the driver while in the seated position indicating the following:

- The label shall indicate the following specified information.
- Overall Height listed in feet and inches.
- Overall Length listed in feet and inches.
- Overall GVWR listed in tons.

Y__N__

CAB HELMET WARNING LABEL

A high-visibility label shall be installed in a location clearly detectable from each seating position. The label shall indicate the following specified information.

“DO NOT WEAR HELMET WHILE SEATED”

Y__N__

TIRE CHAINS

There shall be a set of air operated, automatic tire chains provided and installed on the rear axle. The control for the tire chains shall be located in the apparatus cab and shall be easily accessible to the driver.

There shall be six (6) chain lengths approximately 13 inches long that shall be welded to a single steel ring at 60-degree intervals. Each length of chain shall contain up to 10 twisted style links that are square-cut to provide for maximum traction in forward and reverse modes.

There shall be one (1) driver's side and one (1) passenger side mounting bracket. The brackets shall attach utilizing certified grade 8 fasteners manufactured in accordance with SAE specifications.

Y__N__

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A continuous duty solenoid shall be provided that, when activated, shall open and allow compressed air to flow to each chain unit. All hardware shall be grade 8 type and within SAE specifications.

Y__N__

HELMET RESTRAINTS

Three (3) Ziamatic UHH-1 Universal Helmet Holders shall be provided and installed in a best fit location determined by the apparatus manufacturer.

Y__N__

MUD FLAPS

Heavy-duty rubber mud flaps shall be provided behind the rear wheels. The mud flaps shall be black rubber type and be bolted in place.

Y__N__

WHEEL COVERS

There shall be chrome plated lug nut covers and hub caps installed on the front and rear wheels. There shall also be chrome Baby Moon hub covers for the rear wheels.

Y__N__

Y__N__

Y__N__

PUMP COMPARTMENT

The complete apparatus pump compartment shall be constructed of a combination of structural tubing and formed sheet metal. The same materials used in the body shall be utilized in the construction of the pump compartment. The structure shall be welded utilizing the same A.W.S. Certified welding procedure as used on the structural body module. These processes shall ensure the quality of structural stability of the pump compartment module.

The pump compartment module shall be separated from the apparatus body with a gap. This gap is necessary to accommodate the flexing of the chassis frame rails that is encountered while the vehicle is in transit so that harmful torsional forces are not transmitted into the structural framework.

Y__N__

VIBRA-TORQUE™ PUMP MODULE MOUNTING SYSTEM

The entire pump module assembly shall be mounted so that it "floats" above the chassis frame rails exclusively with Vibra-Torq™ torsion isolator assemblies to reduce the vibration and stress providing an extremely durable pump module mounting system.

BELOIT FIRE DEPARTMENT

The body substructure shall be mounted above the frame to allow independent flexing to occur between the body and the chassis. Each assembly shall be mounted to the chassis frame rails with steel, gusseted mounting brackets. Each bracket shall be powder coated for corrosion resistance. Each body mount bracket shall be mounted to the side chassis frame flange with two 5/8"-UNC Grade 5 HHCS.

Each assembly shall have a two-part rubber vibration isolator. The isolator shall be of a specific durometer to carry the necessary loads of the apparatus body, equipment, tank, water, and hose. The quantity of mounts utilized shall correspond directly to the anticipated weight being supported. Certain assemblies shall also incorporate a torsion spring. Helical coil springs shall be incorporated into specific mounts in tandem with the rubber isolators to minimize the stress absorbed by the body caused from chassis frame rail flexing.

There shall be no welding to the chassis frame rail sides, web or flanges, or drilling of holes in the top or bottom frame flanges between axles. All body to chassis connections shall be bolted so that in the event of an accident, the body shall be easily removable from the truck chassis for repair or replacement.

Because of the constant vibration and twisting action that occurs in chassis frame rails and suspension, the torsion mounting system is required to minimize the possibility of premature body structural failures. The Vibra-Torque™ body mounting system shall have a lifetime warranty.

Y__N__

OPERATORS PANEL

The operators' panel shall be a "top mount", constructed on two (2) incline surfaces.

The lower panel housing shall be used for all valve controls. The upper panel housing shall be used for all gauges, pump controls and any other activation controls specified.

The valve control levers shall be immediately adjacent to the respective gauges neatly arranged for easy access and visible for the operator.

Y__N__

Two (2) 24.00" model #RX-15T16-5050-61CM and one (1) center mounted 9.00" model #RX-15T16-5050-21CM LED Tube lights, shall be installed under a brushed stainless steel light shield for illumination of the pump operator's control panel.

Three (3) 9.00" model #RX-15T16-5050-21CM, LED Tube lights shall be installed in a light shield mounted on the left and right sides of the pump compartment. There shall also be an LED directional light Grote style #60571 clear Surface Mount series installed on each side of the pump panel to illuminate the plumbing components.

BELOIT FIRE DEPARTMENT

There shall be a switch on each side of the pump compartment to turn three (3) of the operators panel lights and the side directional lights on or off. This switch shall also activate any area step lighting. The fourth light on the pump panel shall illuminate when the pump is engaged and it is "OK TO PUMP".

Y__N__

PUMP COMPARTMENT SERVICE ACCESS

The front portion of the pump compartment structure shall not be permanently overlaid to provide an opening for access to the midship fire pump. A removable tread plate panel shall be easily removed or installed, secured by two push-button latches.

Y__N__

PUMP COMPARTMENT STRUCTURE

The structural framework of the pump compartment shall be self-supportive and independent of the apparatus body. The pump module shall be approximately 74" in width as measured laterally across the apparatus. The width of the apparatus as measured longitudinally (measured within the wheelbase dimension of the apparatus) shall be specified in the remainder of the specifications.

Y__N__

The width of the pump compartment (front to back) shall be 48".

Y__N__

APPARATUS LABELING

The apparatus shall be descriptively tagged with color coded metal labels. The labels shall be applied near the apparatus features that require a user function description. Wherever necessary, the labels shall be color coded to differentiate controls and their respective functions to simplify and clarify complex configurations.

Y__N__

ALUMINUM WALKWAY WITH "GRIP STRUT" STEPS

The walkway shall be located between the cab and pump house where flex joints shall be provided between the walkway and pump compartment as well as between walkway and the chassis cab. These flex joints shall be required to reduce the negative effects that chassis frame rail twist can induce into structural components.

The walkway shall be constructed of aluminum tubing to provide a framework for stepping and standing areas.

Each side of the walkway shall have an intermediate step which facilitates access to the walkway standing surface from the running board level. The surface of the walkway, intermediate steps,

BELOIT FIRE DEPARTMENT

and running board areas of the walkway shall be constructed of an aggressive aluminum "Grip Strut" extrusion.

The running board stepping surface shall be flush with the top of the supportive tubular framework. Each surface shall be 'slip-resistant' compliant with the latest NFPA recommendations for stepping and standing surfaces.

Y__N__

The walkway area immediately forward of the pump compartment shall be approximately 33" in width. The pump operator's area shall be illuminated with two (2) lights mounted on the back of the chassis cab, above the external speedlay area.

Y__N__

WALKWAY TOOL COMPARTMENTS

Walkway tool compartments shall be provided, one (1) on each side of the walkway step area. The steps shall be incorporated into hinged 'lift-up' style doors completely enclosing and concealing the integral tool and or equipment storage compartment directly behind the door.

The doors shall be hinged at the top and open with the assistance of a gas filled cylinders. The cylinder shall also serve as a hold open/close device for ease of operator use and elimination of a mechanical latching system.

All exterior surfaces designated as stepping, standing, and walking areas shall comply with the minimum NFPA requirements for slip resistance.

Y__N__

18" HANDRAILS

Two (2) 18" handrails shall be installed on the pump compartment, one (1) each side near the walkway steps to facilitate access up to the operator's panel area.

Y__N__

BLACK LAMINOL CONTROL PANEL

The surface of the operator's control and gauge panel shall be manufactured from heavy duty non-glare black "Laminol", aluminum that is capable of withstanding the effects of extreme weather and temperature.

Y__N__

SIDE PUMP PANELS

There shall be two (2) side pump panels on each side of the pump compartment, one (1) upper and one (1) lower. Each panel shall be accessible by quick-release type latches, closing against a door seal. The lower panel shall be easily removed for a large access to the pump for service.

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BRUSHED STAINLESS STEEL FINISHING FOR PANELS AND OVERLAYS

All panels shall be made from 14 gauge "Brushed Stainless Steel" capable of withstanding the effects of extreme weather and temperature.

The tubular structure shall be overlaid on each side of the pump compartment underneath the access panels and shall be made of "Brushed Stainless Steel".

Y__N__

RUNNING BOARDS

The running boards shall be made of a structural tubular framework. The tubular frame support all loads by transmitting the loads through the pump compartment structure directly to the chassis frame rails.

The running boards shall be independent of the apparatus body and shall be integrated to the pump compartment structure only, eliminating any pump compartment to body interference. This is essential in keeping a truly 'modular' configuration. Slip-resistant abrasive adhesive materials shall be applied to the top surface of the running board framework to provide a suitable stepping surface.

Y__N__

GRIP STRUT-INSERT

The left side running board shall have aluminum diamond "Grip Strut" insert installed. The surface area shall be as large as possible by extending to the perimeter of the inside of the structural running board framework.

The "Grip Strut" material will allow debris and water to pass through to eliminate build-up, thereby aid in retaining the minimum NFPA standard requirements for slip resistance.

Y__N__

GRIP STRUT-SURFACE INSERT

The right side running board shall have an aluminum diamond "Grip Strut" insert installed. The grip surface area shall be as large as possible by extending to the perimeter of the inside of the structural running board framework.

The "Grip Strut" material will allow debris and water to pass through to eliminate build-up, thereby aid in retaining the minimum NFPA standard requirements for slip resistance.

BELOIT FIRE DEPARTMENT

Y__N__

MASTER GAUGES

The master intake and master discharge gauges shall be manufactured by Class One and installed on the pump operator's panel. They shall be liquid filled to keep the dial from pulsating and also to prevent condensation from forming inside the gauges. The master gauges shall be 4 1/2" in diameter.

The master intake gauge shall read from - 30 to 400 psi with the master discharge gauge reading from 0 to 400 psi. The gauges shall be Class 1 model LFP-410.

Y__N__

TESTING PORTS

Test port connections for pressure and vacuum shall be provided at the pump operator's panel. One shall be connected to the intake side of the pump, and the other to the discharge manifold side of the pump. They shall have 0.25 in. standard pipe thread connections and be manufactured of non-corrosive polished stainless steel or brass plugs.

Y__N__

ENGINE THROTTLE

There shall be a Fire Research "Infinity PRO" remote hand throttle installed. The case and control knob shall be water resistant machined from anodized aluminum, and have dimensions not to exceed 2 1/2" diameter and 4 3/8" deep. 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. It shall use optical technology to detect the direction and speed of the control knob when it is rotated. The throttle shall be located so that it can be operated from the pump operator's position with all gauges in full view.

Y__N__

PRESSURE CONTROL MECHANISM

A Darley discharge relief valve shall be supplied. It will be of bronze construction and be capable of operating over a range of 90 to 800 PSI discharge pressure. A manual override feature is to be a part of the valve design.

The relief valve system shall have a remote control head that shall be mounted on the operator's panel. It shall include an On-Off selector switch and a large hand wheel to establish the pressure setting control. Lights shall be installed to show if the valve is in the open or closed position. A flush out feature with strainer shall be installed to allow the pump operator to flush the valve without shutting down the pump.

BELOIT FIRE DEPARTMENT

Y__N__

PRESSURE RELIEF VALVE

A Task Force Tips model #A18XX pressure relief valve shall be provided. The valve shall have an easy to read adjustment range from 90 to 300 PSI with 90, 125, 150, 200, 250 and 300 PSI adjustment settings and an "OFF" position. Pressure adjustments shall be made utilizing a 1/4" hex key, 9/16" socket or 14mm socket.

For corrosion resistance the cast aluminum valve shall be a hardcoat anodized with a powder coat interior and exterior finish. The valve shall meet NFPA 1901 requirements for pump inlet relief valves. The unit shall be covered by a five year warranty.

For normal pumping operations, the relief valve shall not be capped and there shall be a placard stating "DO NOT CAP" installed.

Y__N__

ENGINE INFO CENTER

There shall be a Class 1 ENFO IV installed on the pump panel of the apparatus. The ENFO IV provides the pump operator with Engine RPM, Oil Pressure, Engine Temperature, and Electrical System Voltage. This compact unit contains all required engine audible alarms including the low voltage alarm.

Y__N__

HEAT EXCHANGER

There shall be a supplementary heat exchanger cooling system installed for use of water from the discharge side of the fire pump through the engine compartment, without intermixing, for absorption of excess heat.

The heat exchanger shall be adequate in size to maintain the temperature of the coolant in the pump drive engine not in excess of the engine manufacturer's temperature rating under all pumping conditions. Appropriate drains shall be provided to allow draining the heat exchanger to prevent damage from freezing. A manual shut-off valve shall be supplied at the pump operator's position.

Y__N__

HEAT EXCHANGER DRAIN VALVE

A Class One 1/4" ball drain valve (#14BV) with manual shut-off shall be provided for the heat exchanger. The drain valve shall be installed at the pump operator's position.

BELOIT FIRE DEPARTMENT

Y__N__

PUMP COMPARTMENT TOP OVERLAY

The top of the pump compartment shall be overlaid with 1/8" embossed aluminum diamond plate, meeting the minimum NFPA standard requirements for slip resistance.

Y__N__

MIDSHIP PUMP

The pump shall have a capacity of 1250 gallons per minute, measured in U.S. Gallons. The pump shall be a Waterous model CSUC20, single stage midship pump.

Y__N__

The pumps impellers shall be bronze with double suction inlets, accurately balanced (mechanically and hydraulically), of mixed flow design with reverse-flow, labyrinth-type, wear rings that resist water bypass and loss of efficiency due to wear. The impeller shall have flame plated hub to assure maximum pump life and efficiency despite the presence of abrasive particles, such as fine sand, in the water being pumped. The wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need for replacing the entire pump casing due to wear.

Pump casing shall be close grained gray iron, bronze fitted and horizontally split in two sections for easy removal of entire impeller assembly, including wear rings, without disturbing setting of pump in chassis or pump piping. The pump, for ease and rapid servicing in the future, shall have the separable impeller shaft which allows true separation of transmission or pump without disassembly or disturbing the other component. This shall be accomplished by using a two piece shaft. This feature will allow field service to accomplish in much less time since each component (pump or transmission) can be repaired independently. The impeller shaft shall be stainless steel, accurately ground to size and polished. Shaft shall be supported at each end by ball type oil grease lubricated bearings. Sleeve bearings or bushings will not be acceptable. The bearings shall be protected from water at each end of the impeller shaft.

The discharge manifold shall be cast as an integral part of the pump body assembly and shall provide at least three full 3 1/2" openings for ultimate flexibility in providing various discharge outlets for maximum efficiency, and shall be located as follows: one outlet on the right side of the pump body, one outlet on the left side of the pump body, and one outlet directly on top of the pump discharge manifold.

The entire pump shall be cast, manufactured and tested at the pump manufacturer's factory. The pump transmission housing shall be high strength aluminum, three pieces and horizontally split. Power transfer to the pump shall be through a Morse Hy-Vo drive chain. Chain shall be pressure lubricated through oil pump. Chain sprockets shall be cut from carbonized, hardened alloy steel. Spur gears will not be acceptable.

BELOIT FIRE DEPARTMENT

The drive shafts shall be 2.35" in diameter, made of hardened and ground alloy steel. All shafts shall be ball bearing supported. Case shall be designed to eliminate the need of water cooling.

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. A certificate documenting this test shall be provided with the completed apparatus. The pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the latest NFPA 1901. Pump shall be free from objectionable pulsation and vibration.

The pump shall be the Class "A" type and shall deliver the percentage of rated discharge at pressures indicated below.

- 100% of rated capacity at 150 PSI net pump pressure.
- 100% of rated capacity at 165 PSI net pump pressure.
- 70% of rated capacity at 200 PSI net pump pressure.
- 50% of rated capacity at 250 PSI net pump pressure.

Y ___ N ___

MASTER DRAIN VALVE

A manifold type drain valve shall be installed in the pump compartment. All pump drains shall be connected to the master drain valve. The drain valve shall be controlled from the left side lower pump house sill. The control shall be a hand wheel knob marked "open" and "closed".

The drain shall be located such that it shall not interfere with pumping operations or function such as soft suction hoses, etc. nor shall it protrude past the outer edge of the apparatus, to prevent damage to the valve.

In some cases, it is necessary to locate the master drain in a secondary location to ensure proper function, such as draining, or if no lower or vertical sill exists. In this event, the drain shall be located below the bottom outside edge of the hose body near the forward most corner on the driver's side hose body. The drain shall not protrude past the outer edge of the body, thus preventing damage to the valve.

Y ___ N ___

PUMP SEALS

Stuffing boxes shall be integral with the pump body and be equipped with two piece glands to permit adjustment or replacement of packing without disturbing the pump. Lantern rings shall be located at the inner ends of stuffing boxes so that all rings of packing can be removed without removal of the lantern rings. Water shall be fed into the stuffing box lantern rings for proper lubrication and cooling when the pump is operating.

BELOIT FIRE DEPARTMENT

Y__N__

PUMP SHIFT

The drive unit shall be provided with an air pump shift system. The control valve shall be a spring loaded guard lever that locks in "Road" or "Pump" mode.

To the left of the pump shift control, there shall be two indicator lights to show the position of the pump when the control is moved to "Pump" position. A green light shall be energized when the pump shift has been completed and shall be labeled "PUMP ENGAGED"; a second green light shall be labeled "OK TO PUMP" energized when both the pump shift has been completed and the chassis automatic transmission is engaged.

A third green indicator light shall be installed adjacent to the throttle on the pump operator's panel. This light shall be labeled "Throttle Ready".

In addition to this indicator light, an additional indication shall be provided to the pump operator at the panel when the pump is ready to pump. This additional indication shall be that one (1) of the operator's panel illumination lights will only activate when the "OK TO PUMP" indicator is lit.

Y__N__

PRIMING SYSTEM

The priming system shall include an electrically driven rotary vane priming pump rigidly attached to the pump transmission. The priming pump shall be self-lubricating and shall not require an external oil reservoir. The pump, when dry, shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds through 20 feet of suction hose through the steamers. Priming pump shall be built by the manufacturer of the fire pump.

Y__N__

PRIMER CONTROL

There shall be a push button control to simultaneously actuate the primer control valve and the primer motor.

Y__N__

MAIN PUMP INLETS

A 6.00 inch (152mm) pump manifold inlet shall be provided on each side of the pump. The inlets shall protrude up to 2 inches (50mm) away from the side panels and maintain a low connection height.

The main pump inlets shall have National Standard Threads and include removable screens designed to provide cathodic protection for reducing deterioration in the pump.

BELOIT FIRE DEPARTMENT

Y__N__

6" CHROME PLATED BRONZE CAP(S)

There shall be two (2) 6" long handled chrome plated cap(s) installed the apparatus. The cap(s) shall be National Standard Thread.

Y__N__

PUMP COOLING LINE

There shall be a 3/8 inch (9.5 mm) line running from the pump to the water tank to assist in keeping the pump water from overheating. A quarter turn on/off valve shall be installed on the operator's panel.

Y__N__

WATEROUS MODEL PB18-2515 COMBINATION PORTABLE PUMP W/RAIL BASE

A Waterous model PB18-2515 portable engine/pump combination with (rail-base) shall be provided on the apparatus as specified:

The pump shall be plumbed into the discharge manifold of the mid ship pump to allow any discharge to be operated with the portable pump.

Intake:

2-1/2 inch female NPT.

Discharge:

1-1/2 Inch Female NPT.

Console:

Operator's panel includes discharge pressure gauge, compound intake pressure gauge, low oil pressure warning light, start and stop control, speed control, panel light, and 12 volt outlet.

Volute Body and Head:

High strength aluminum alloy, anodized for superior corrosion resistance.

Impeller:

High strength corrosion resistant bronze, fully enclosed, double hubbed to balance hydraulic thrust, mechanically balanced to eliminate vibration.

Wear Rings:

Long wearing bronze. Easy to replace when required restoring original pump efficiency.

Shaft Sleeve:

High strength stainless steel.

BELOIT FIRE DEPARTMENT

Shaft Seal:

Spring loaded mechanical type.

Priming:

Combination spark arresting muffler and exhaust primer with quarter turn bronze priming valve with push/pull knob. (Optional on no base and rail).

Engine Specifications:

Briggs & Stratton, model 356447, Vanguard V-Twin air cooled, overhead valve (OHV) design delivers a maximum output of 18 HP (13.4kw) @ 3600 RPM. 34.75 cu. in. (570 cc) displacement, 4 cycle, gasoline fueled, horizontal shaft.

Fuel Tank:

Integral 3 gallon (11 liter) tank with fuel level gauge.
Remote 3 Gal. (11 liter) Optional on no base and rail base.

Lubrication:

Full pressure lubrication system with an automotive style oil filter. Oil fill tube with dipstick.

Starter:

12 volt electric w/ battery and manual recoil.

Alternator:

16 amps

Rail Base:

Rigid steel channels. Control panel shipped loose.

Performance Data:

75 GPM @ 135 PSI (290 L/min @ 9.3 bar) -to-
150 GPM @ 90 PSI (600 L/min @ 6.5 bar)

Y__N__

STAINLESS STEEL PLUMBING

All auxiliary suction and discharge plumbing related fittings, and manifolds shall be fabricated with schedule 10 stainless steel pipe; brass or high pressure flexible piping with stainless steel couplings. Galvanized components and/or iron pipe shall NOT be accepted to ensure long life of the plumbing system without corrosion or deterioration of the waterway system. Where waterway transitions are critical (elbows, tees, etc.), no threaded fittings shall be allowed to promote the smooth transition of water flow to minimize friction loss and turbulence. All piping

BELOIT FIRE DEPARTMENT

components and valves shall be non-painted, unless otherwise specified. All piping welds shall be wire brushed and cleaned for inspection and appearance.

The high pressure flexible piping shall be black SBR synthetic rubber hose with 300 PSI working pressure and 1200 PSI burst pressure for flexible piping sizes 1.5" through 4". Sizes 3/4", 1" and 5" are rated at 250 PSI working pressure and 1000 PSI burst pressure. All sizes are rated at 30 in HG vacuum. Reinforcement consists of two plies of high tensile strength tire cord for all sizes and helix wire installed in sizes 1" through 5" for maximum performance in tight bend applications. The material has a temperature rating of -40° F to +210° F.

The stainless steel full flow couplings are precision machined from high tensile strength stainless steel. All female couplings are brass. Mechanical grooved and male 3/4" and 1" couplings are brass. A high tensile strength stainless steel ferrule with serrations on the I. D. is utilized to assure maximum holding power when fastening couplings to hose.

Y__N__

PUMP HOUSE LINE PROTECTION

All drain lines for the discharges, suctions, ABS discharge gauge lines and any other appropriate connections in the pump house area shall have a protective cover provided on the lines in the required areas of the lines to prevent the lines from rubbing on any other components in the pump house area.

All drain lines, ABS lines, high pressure discharge lines and electrical wiring in the pump house area shall be properly and neatly routed, wire tied and rubber coated "P" clamped, to keep the items secured.

Y__N__

DRAIN VALVES

All manual drains shall be model Class One #34BV 3/4" ball valve with quarter turn cast T-Handle.

Y__N__

2.5" RIGHT SIDE INLET

There shall be a gated suction inlet with .75 inch (19mm) bleeder installed on the right side of the apparatus. A total quantity of one (1) shall be provided with the following specified components:

Y__N__

A 2.5" Akron Brass 8800 series swing-out valve with stainless steel ball.

BELOIT FIRE DEPARTMENT

The control valve shall be a 'swing out type' direct operation manual lever actuator.

Y__N__

The plumbing shall consist of 2.5" piping, and shall incorporate a manual drain control installed below the pump area for ease of access.

Y__N__

The suction termination shall include the following components:

One (1) 2.5" NST swivel female adapter with screen

One (1) 2.5" male self-venting plug, secured by a chain

Y__N__

Y__N__

2.5" LEFT SIDE INLET

There shall be a gated suction inlet with .75 inch (19mm) bleeder installed on the left side of the apparatus. A total quantity of one (1) shall be provided with the following specified components:

Y__N__

A 2.5" Akron Brass 8800 series swing-out valve with stainless steel ball.

Y__N__

The suction shall be controlled from the top operator's panel.

Y__N__

The plumbing shall consist of 2.5" piping, and shall incorporate a manual drain control installed below the pump area for ease of access.

Y__N__

The suction termination shall include the following components:

One (1) 2.5" NST swivel female adapter with screen

One (1) 2.5" male self-venting plug, secured by a chain

Y__N__

LEFT REAR DISCHARGE

There shall be a gated discharge installed on the left rear of the apparatus. A total quantity of one (1) shall be provided with the following specified components:

Y__N__