



Agenda
City of Charlevoix City Council Regular Meeting
Monday, April 21, 2025 - 6:00 PM
Council Chambers, 210 State Street, Charlevoix, MI

- 1. Pledge of Allegiance**
- 2. Roll Call**
- 3. Presentations**
- 4. Inquiry Regarding Conflicts of Interest**
- 5. Consent Agenda**
 - A. City Council Meeting Minutes - April 7, 2025
 - B. Accounts Payable and Payroll Check Registers
 - C. Trout Tournament Parking Request
 - D. 2025 Loader/Backhoe Purchase for \$165,158
 - E. Airport Utility Tractor
 - F. Bridge Park Lift Station Cleaning
- 6. Public Hearings and Actions Requiring Public Hearings**
- 7. All Other Actions and Requests**
 - A. Fire Truck Acquisition
Mark Heydlauff, City Manager
 - B. Council Appointment
Janet Kalbfell-1st Ward Council Member
 - C. Mayoral Appointments
Mayor Lyle Gennett
- 8. Reports and Communications**
 - A. Public Comment
 - B. City Manager's Comments
 - C. Mayor and Council Comments
- 9. Other Council Business**
 - A. Closed Session: Annual City Manager Performance Review (MCL 15.268(1a))
- 10. Adjourn**

Persons with disabilities who need an accommodation to fully participate in these meetings should contact the City Clerk's Office at 231-547-3250 or by email clerk@charlevoixmi.gov. A 24-hour notice may be needed for certain accommodations. An attempt will be made to grant all reasonable accommodations requests.

Charlevoix City Council

Consent Agenda

Title: City Council Meeting Minutes - April 7, 2025

Date: April 21, 2025

Presented By:

Background:

Recommendation:

Motion to approve the minutes as presented.

Attachments:

1. 2025.04.07 CC DRAFT

City of Charlevoix
City Council Regular Meeting Minutes
Monday, April 7, 2025 - 6:00 PM

Council Chambers, 210 State Street, Charlevoix, MI

1. Pledge of Allegiance

The meeting was called to order at 6:00 p.m. by Mayor Gennett. The Council, staff, and members of the public rose and recited the Pledge of Allegiance.

2. Roll Call

Mayor: Lyle Gennett

Members Present: Aaron Hagen, Janet Kalbfell, Mark Knapp, Phil Parr, Richard Spring

Members Absent: Shane Cole

City Manager: Mark L. Heydlauff

City Clerk: Sarah J. Dvoracek

3. Presentations

A. Mayoral Proclamation recognizing Sexual Assault Awareness Month

Mayor Lyle Gennett

Mayor Gennett read a proclamation recognizing April as Sexual Assault Awareness Month.

4. Inquiry Regarding Conflicts of Interest

Council Member Hagen stated he does not think there is a conflict of interest regarding items 7B. and 7D. but for full transparency, he stated he owns the taproom and his wife is a vendor at the Farmers Market. Council concurred that there is no conflict of interest for either item.

5. Consent Agenda

A. City Council Meeting Minutes - March 17, 2025

Motion to approve the minutes as presented.

B. Accounts Payable and Payroll Check Registers

Motion to approve the accounts payable and payroll check registers as presented.

Dates	Description	Amount
03/24/2025	Special Accounts Payable Run	\$76,073.45
03/28/2025	Payroll (net pay)	\$108,521.02
03/28/2025	Payroll Remittance Checks	\$6,064.53
04/08/2025	Regular Accounts Payable	\$183,234.29
03/12/2025-03/31/2025	ACH/WIRE Payments	\$997,847.17
Grand Total		\$1,371,740.46

The entire accounts payable and payroll check registers, can be viewed on the City's [website](#).

C. Investment Update from City Treasurer

Motion to approve the investment report as presented.

6. Public Hearings and Actions Requiring Public Hearings

7. All Other Actions and Requests

A. Ice Storm Review and Follow-up Steps

Mark Heydlauff, City Manager

City Manager Heydlauff presented information on the ice storm and the next follow-up steps. Council discussed the storm and thanked Mark and City Staff for all their hard work.

B. Farmers Market Policy and Advisory Committee

Kent Knorr, Recreation Director

Recreation Director Kent Knorr presented information on the Farmers Market Policy and Advisory Committee.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Knapp, seconded by Spring to establish a 6-member Farmers Market Advisory Committee and approve the policies and application process for the Farmers Market.

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

C. Sale of Property: Southside Storage Yard

Mark Heydlauff, City Manager

City Manager Heydlauff presented information on the sale of property on the south side storage yard.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Kalbfell, seconded by Spring to conditionally approve the sale of property owned by the City of Charlevoix as described in the proposal, except for the additional condition regarding the provision of utilities, and authorize the City Manager, City Attorney, and City Clerk to perform due diligence requirements toward bringing a final sale agreement to City Council.

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

D. Local Government Approval for On-Premises Tasting Room License-Stiggs Brewing Company

Mark Heydlauff, City Manager

City Manager Heydlauff presented information on the local government approval for an on-premises tasting room license for Stiggs Brewing Company.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Hagen, seconded by Kalbfell to approve Resolution 2025-04-01 recommending approval of the on-premises tasting room license for Stiggs Brewing Company.

CITY OF CHARLEVOIX

RESOLUTION NO. 2025-04-01

LOCAL GOVERNMENT APPROVAL FOR ON-PREMISES TASTING ROOM PERMIT

A. At a regular meeting of the City of Charlevoix called to order by Mayor Lyle Gennett on April 7, 2025, at 6:00 p.m. the following resolution was offered:

B. Motion by Hagen, seconded by Kalbfell that the application from Stiggs Brewing Company for a NEW ON-PREMISES TASTING ROOM LICENSE to be located at 743 Petoskey Ave. Charlevoix, MI 49720.

C. It is the consensus of this body that it recommends this application be considered for approval by the Michigan Liquor Control Commission.

RESOLVED this 7th day of April 2025 A.D.

Resolution was adopted by the following yeas and nays vote:

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

E. Notice of Intent to Issue Bonds for the Purchase of a Fire Apparatus

Mark Heydlauff, City Manager

City Manager Heydlauff presented information on the Notice of Intent to issue bonds for the purchase of a fire apparatus.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Spring, seconded by Kalbfell to adopt resolution 2024-04-02, the resolution of intent to issue bonds for the funding of fire apparatus acquisition and authorize the City Clerk and City Manager to make all necessary legal notices and actions.

CITY OF CHARLEVOIX

RESOLUTION NO. 2025-04-02

NOTICE OF INTENT RESOLUTION

CAPITAL IMPROVEMENT BONDS

WHEREAS, the City of Charlevoix, County of Charlevoix, State of Michigan (the "City") intends to issue general obligation limited tax bonds pursuant to Act 34, Public Acts of Michigan, 2001, as amended ("Act 34"), in an aggregate principal amount of not to exceed One Million Seven Hundred Thousand Dollars (\$1,700,000) (the "Bonds"), for the purpose of paying part of the cost of acquiring and equipping a new aerial ladder fire truck for use by the Charlevoix Township Fire Department (the "Project"); and

WHEREAS, a notice of intent to issue the Bonds must be published before the issuance of the Bonds in order to comply with the requirements of Section 517 of Act 34; and

WHEREAS, the City intends at this time to state its intentions to be reimbursed from proceeds of the Bonds for any expenditures undertaken by the City for the Project prior to issuance of the Bonds.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. Notice of Intent Authorized. The City Clerk is authorized and directed to publish a notice of intent to issue bonds in the Charlevoix Courier, a newspaper of general circulation in the City.
2. Form of Notice of Intent. The notice of intent shall be published as a display advertisement not less than one-quarter (1/4) page in size in substantially the form attached to this resolution as Exhibit A.
3. Approval of Notice of Intent and Publication. The City Council does hereby determine that the foregoing form of Notice of Intent to Issue Bonds and the manner of publication directed is the method best calculated to give notice to the City's electors and taxpayers residing in the boundaries of the City of the City's intent to issue the Bonds, the maximum amount of the Bonds, the purpose of the Bonds, the source of payment for the Bonds and the right of referendum relating thereto, and the newspaper named for publication is hereby determined to reach the largest number of persons to whom the notice is directed.
4. Reimbursement Declaration. The City may incur expenditures for the Project prior to receipt of proceeds of the Bonds and may advance moneys for that purpose from the Fire Department Fund or other funds available to the City, to be reimbursed from proceeds of the Bonds when available. The City makes the following declarations for the purpose of complying with the reimbursement rules of Treas. Reg. § 1.150-2 pursuant to the Internal Revenue Code of 1986, as amended:
 - a. The City reasonably expects to reimburse itself with proceeds of the Bonds for certain costs of the Project which were paid or will be paid from the general fund or other available funds of the City subsequent to sixty (60) days prior to today.
 - b. The maximum principal amount of debt expected to be issued for the Project, including issuance costs, is \$1,700,000. A reimbursement allocation of the capital expenditures described above with the proceeds of the Bonds will occur not later than 18 months after the later of (i) the date on which the expenditure is paid, or (ii) the date the Project is placed in service or abandoned, but in no event more than three (3) years after the original expenditure is paid. A reimbursement allocation is an allocation in writing that evidences the City's use of the proceeds of the Bonds to reimburse the City for a capital expenditure made pursuant to this resolution.
 - c. Bond Counsel. Miller, Canfield, Paddock and Stone, P.L.C. is hereby approved as bond counsel to the City in connection with the issuance of the Bonds.

d. Municipal Advisor. MFCL, LLC, is hereby approved as municipal advisor to the City in connection with the issuance of the Bonds.

e. Rescission. All resolutions and parts of resolutions, insofar as they conflict with the provisions of this resolution be and the same hereby are rescinded.

RESOLUTION DECLARED ADOPTED.

RESOLVED this 7th day of April 2025 A.D.

Resolution was adopted by the following yeas and nays vote:

Motion by Spring, seconded by Kalbfell to approve Resolution 2024-04-02 as presented.

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

F. Mayoral Appointments

Mayor Lyle Gennett

Mayor Gennett presented information on his mayoral appointment recommendations.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Parr, seconded by Hagen to confirm the mayor's appointments of Christine Galbraith and Kristin Jones to the Planning Commission for terms to expire on April 30, 2028.

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

Mayor Gennett opened the item for public comment. None were heard.

Motion by Hagen, seconded by Kalbfell to approve the reappointment of Scott Beatty to the Planning Commission for a term to expire April 30, 2028.

Yeas: Kalbfell, Hagen, Spring, Knapp, Parr

Nays: None

Absent: Cole

Motion carried.

8. Reports and Communications

A. Public Comment

B. City Manager's Comments

- Thanked all City Staff for their hard work in handling the ice storm and power outage
- Highlighted the work of Randy Wurst, Nick Hilling, and their Staff for their hard work and dedication in keeping the water and wastewater systems up and running during the

entire power outage

- Thanked Ellsworth Farmers Exchange for their efforts in delivering fuel to us during the entire event

C. Mayor and Council Comments

- Council Member Knapp thanked Officer Orban for all her hard work in handling the ice storm and power outage
- Council collectively thanked the Police Department for all their efforts in handling the event
- Mayor Gennett congratulated Council Spring in receiving the Lifetime Achievement Award for school social services

9. Other Council Business

10. Adjourn

Mayor Gennett adjourned the meeting at 6:37 p.m.

Sarah J. Dvoracek

City Clerk

Lyle Gennett

Mayor

Charlevoix City Council

Consent Agenda

Title: Accounts Payable and Payroll Check Registers

Date: April 21, 2025

Presented By:

Background:

Recommendation:

Motion to approve the accounts payable and payroll check registers as presented.

Attachments:

1. Check Registers 04-21-25 Agenda

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/09/2025 - 04/09/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: PAPER CHECK - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/09/2025	144800	HARTFORD, THE	2,913.67
1 TOTALS:			
Total of 1 Checks:			2,913.67
Less 0 Void Checks:			0.00
Total of 1 Disbursements:			2,913.67

Summary of Check Registers & ACH Payments HUNTINGTON NATIONAL BANK - CHECKS ISSUED

04/09/25 Special Accounts Payable Run	\$ 2,913.67
04/11/25 Payroll (net pay)	\$ 138,730.46
04/11/25 Payroll Remittance Checks	\$ 7,406.47
04/22/25 Regular Accounts Payable	\$ 442,026.79
Checks Sub-Total:	\$ 591,077.39

HUNTINGTON NATIONAL BANK - EFT/WIRE PAYMENTS

04/03/25 AMG Payment Solutions	\$ 34.99
04/03/25 AMG Payment Solutions	\$ 34.99
04/07/25 MI Public Power Agency	\$ 9,085.15
04/10/25 State of MI (Sales Tax)	\$ 32,680.99
04/11/25 IRS (Payroll Tax Deposit)	\$ 56,507.36
04/11/25 Alerus Financial (HCSP)	\$ 558.00
04/11/25 Vantagepoint (401 Plan)	\$ 1,204.14
04/11/25 Vantagepoint (457 Plan)	\$ 27,635.62
04/11/25 Vantagepoint (Roth IRA)	\$ 1,285.00
04/11/25 State of MI (Withholding Tax)	\$ 7,887.05
03/31/25 MI Public Power Agency	\$ 17,477.83
ACH Sub-Total:	\$ 154,391.12

Huntington National Bank Total: \$ 745,468.51

CHARLEVOIX STATE BANK - CHECKS ISSUED (PROPERTY TAX DISBURSEMENT TO VARIOUS TAXING AUTHORITIES)

Charlevoix State Bank Total: \$ -

Grand Total: \$ 745,468.51

APPROVED:


CITY MANAGER

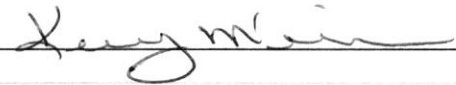
CITY TREASURER


CITY CLERK

CHECK APPROVAL REPORT FOR CITY OF CHARLEVOIX

Payroll: 0000000018

Name	Check Date	Gross	Net
HEYDLAUFF, MARK L.	04/11/2025	6,169.23	4,178.21
DVORACEK, SARAH J.	04/11/2025	3,254.51	2,489.95
DeROSIA, PATRICIA E.	04/11/2025	1,589.61	1,000.04
KLOOSTER, ALIDA K.	04/11/2025	3,651.00	2,501.67
BARNEVELD, RICHELLE L.	04/11/2025	2,166.50	1,532.63
SCHULZ, GINNY L.	04/11/2025	2,214.88	1,592.55
JENKINS, JESSICA-RAE A.	04/11/2025	1,980.80	1,534.26
MCGINN, KELLY A.	04/11/2025	4,291.51	2,802.43
SCHEEL, JONATHAN D.	04/11/2025	3,801.96	2,719.91
MCDONNELL, JILL L.	04/11/2025	4,318.46	2,578.73
UMULIS, MATTHEW T.	04/11/2025	2,613.23	1,511.08
ORBAN, BARBARA K.	04/11/2025	3,194.13	1,815.98
RILEY, DENISE M.	04/11/2025	728.94	593.44
MUNK, CHRISTOPHER J.	04/11/2025	2,474.24	1,473.65
CHRISTIENSEN, BRIAN D.	04/11/2025	2,204.80	1,499.50
RAMIREZ, CHARLES V.	04/11/2025	2,772.90	1,916.66
MARTIN, DONALD L.	04/11/2025	3,246.18	2,179.93
YOUNG, KRISTEN L.	04/11/2025	2,806.26	2,030.64
WURST, RANDALL W.	04/11/2025	5,617.23	3,371.49
HILLING, NICHOLAS A.	04/11/2025	5,619.62	3,507.35
MEIER III, CHARLES A.	04/11/2025	3,803.78	2,406.17
ZACHARIAS, STEVEN B.	04/11/2025	4,918.49	2,154.75
NEWMAN, MARK J.	04/11/2025	5,713.00	3,661.79
LOUGHMILLER, JOHN A.	04/11/2025	4,369.70	3,014.28
GENNETT, LYLE E.	04/11/2025	1,035.00	911.83
COLE, SHANE D.	04/11/2025	605.00	558.71
GRIFFITH, JOHN J.	04/11/2025	5,043.55	2,753.98
EATON, BRAD A.	04/11/2025	6,094.20	3,849.20
WILSON, TIMOTHY J.	04/11/2025	6,979.78	4,868.03
LAVOIE, RICHARD L.	04/11/2025	1,861.27	1,002.99
STERRETT, PHILLIP R.	04/11/2025	6,204.88	3,991.39
STEVENS, BRANDON C.	04/11/2025	8,401.91	5,120.06
WHITLEY, ANDREW T.	04/11/2025	9,962.24	6,111.98
FARRELL, MITCHELL L.	04/11/2025	6,640.88	4,208.17
ANDERSON, ELIZABETH A.	04/11/2025	2,386.62	1,579.83
KENWABIKISE, DAVID L.	04/11/2025	2,092.22	1,457.42
HAGEN, AARON W.	04/11/2025	867.50	801.13
KALBFELL, JANET P.	04/11/2025	880.00	475.28
ELLIOTT, PATRICK M.	04/11/2025	5,039.86	3,466.54
MORRISON, KEVIN P.	04/11/2025	3,866.60	2,444.53
PARR, PHILIP M.	04/11/2025	830.00	731.23
FURGESON, JUSTIN L.	04/11/2025	3,974.23	2,810.18
BRADLEY, KELLY R.	04/11/2025	3,462.45	2,089.98
HART II, DELBERT W.	04/11/2025	4,196.01	2,653.63
JONES, ROBERT F.	04/11/2025	3,263.12	2,159.04
KNAPP, MARK D.	04/11/2025	680.00	599.08
THORP, WILLIAM D.	04/11/2025	2,960.20	1,889.26
LEITNER, RYAN S.	04/11/2025	3,745.09	2,548.46
NOWKA, STEPHEN P.	04/11/2025	2,610.42	1,886.26
RILEY, DANIEL A.	04/11/2025	3,228.06	2,300.69
SPRING, RICHARD C.	04/11/2025	642.50	566.04
REID, ROB A.	04/11/2025	1,836.42	1,256.18
WILSON, SAMUEL J.	04/11/2025	621.25	552.37
CRANDELL, ZACKARY R.	04/11/2025	560.00	487.99
KNORR, KENT J.	04/11/2025	3,358.25	2,402.12
BOSS JR, DALE E.	04/11/2025	924.39	813.74
ANZELL, BETH A.	04/11/2025	2,329.38	1,741.30
MCDERMOTT, DENNIS J.	04/11/2025	514.16	458.92
CUNNINGHAM, ABIGAIL A.	04/11/2025	138.00	127.44
BOSS, BEAU J.	04/11/2025	1,188.51	943.18
DRENTH, DOUGLAS A.	04/11/2025	1,970.00	1,539.52
GILL, DAVID R.	04/11/2025	575.79	507.27
LIVINGSTON, BRIAN D.	04/11/2025	2,141.60	1,729.59
SCHOLEY, ROBERT W.	04/11/2025	3,125.09	2,088.46
MCCRANEY, RUSSELL R.	04/11/2025	2,613.20	1,983.65
POSTMUS, ANTHONY H.	04/11/2025	1,857.60	1,319.80
REECE, DANIEL A.	04/11/2025	2,331.87	1,789.22
TRIVERS, MANUEL J.	04/11/2025	1,222.56	1,087.70
Totals: 68		208,382.62	138,730.46

Approved By: 

Date: 4/8/25

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/11/2025 - 04/11/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: PAPER CHECK - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/11/2025	144791	4FRONT CREDIT UNION	1,510.58
04/11/2025	144792	AMERICAN FAMILY LIFE	532.65
04/11/2025	144793	CHARLEVOIX STATE BANK	1,555.00
04/11/2025	144794	COMMUNICATION WORKERS OF AMER	673.67
04/11/2025	144795	FOPLC	234.00
04/11/2025	144796	MI STATE DISBURSEMENT UNIT	116.55
04/11/2025	144797	PRIORITY HEALTH	1,517.57
04/11/2025	144798	THE HARTFORD	400.06
04/11/2025	144799	VELO LAW OFFICE	866.39
1 TOTALS:			
Total of 9 Checks:			7,406.47
Less 0 Void Checks:			0.00
Total of 9 Disbursements:			7,406.47

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/22/2025 - 04/22/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: PAPER CHECK - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/22/2025	144801	ACE HARDWARE	5,125.94
04/22/2025	144802	ACLARA TECHNOLOGIES LLC	74,597.00
04/22/2025	144803	ALL-PHASE ELECTRIC SUPPLY CO	207.56
04/22/2025	144804	AMAZON CAPITAL SERVICES	693.39
04/22/2025	144805	AMERICAN LEGAL PUBLISHING COR	341.88
04/22/2025	144806	ANDREW T WHITLEY	305.24
04/22/2025	144807	ANYWHERE DOT EXAMS PLLC	1,050.00
04/22/2025	144808	AT&T MOBILITY	85.12
04/22/2025	144809	ATLAS ELECTRIC INC	290.00
04/22/2025	144810	AUTO-WARES GROUP	1,714.44
04/22/2025	144811	AVFUEL CORPORATION	76,139.04
04/22/2025	144812	BS& A SOFTWARE	1,100.00
04/22/2025	144813	CDW GOVERNMENT	419.78
04/22/2025	144814	CHARLEVOIX DISTRICT LIBRARY	185,000.00
04/22/2025	144815	CHARTER COMMUNICATIONS	869.96
04/22/2025	144816	CINTAS	245.94
04/22/2025	144817	CINTAS CORPORATION	113.47
04/22/2025	144818	CIVICPLUS LLC	16,739.10
04/22/2025	144819	CONWAY PROFESSIONAL SERVICES	1,505.00
04/22/2025	144820	D&D ELECTRONICS	270.00
04/22/2025	144821	DELL MARKETING LP	649.91
04/22/2025	144822	ELIZABETH A ANDERSON	93.68
04/22/2025	144823	ELLSWORTH FARMERS EXCHANGE	6,590.75
04/22/2025	144824	ETNA SUPPLY	8,550.00
04/22/2025	144825	FAMILY FARM AND HOME	315.17
04/22/2025	144826	FASTENAL COMPANY	60.60
04/22/2025	144827	FICK & SONS DIESEL GARAGE	2,265.00
04/22/2025	144828	FREEDOM MAILING SERVICES INC	2,728.08
04/22/2025	144829	GANNETT MICHIGAN LOCALIQ	175.92
04/22/2025	144830	GFL ENVIRONMENTAL	879.17
04/22/2025	144831	GRAND TRAVERSE GARAGE DOOR CO	504.58
04/22/2025	144832	HACH COMPANY	369.96
04/22/2025	144833	HEALTH DEPT OF NORTHWEST MICH	330.00
04/22/2025	144834	HYDROCORP	2,243.50
04/22/2025	144835	IDI	75.00
04/22/2025	144836	IPS GROUP INC	184.50
04/22/2025	144837	JUSTIN L FURGESON	240.60
04/22/2025	144838	KALAMAZOO SANITARY SUPPLY LLC	286.38
04/22/2025	144839	KENT J KNORR	61.01
04/22/2025	144840	KIWANIS CLUB OF CHARLEVOIX	40.00
04/22/2025	144841	KRAFT BUSINESS SYSTEMS INC	68.26
04/22/2025	144842	LAKE MICHIGAN LIGHTING	2,126.02
04/22/2025	144843	LEXIPOL LLC	1,849.00
04/22/2025	144844	MARGARET M. DANOWSKI	6.19
04/22/2025	144845	MARK L HEYDLAUFF	832.80
04/22/2025	144846	MCCARDEL CULLIGAN WATER COND	55.50
04/22/2025	144847	MICHAEL ZYNDA	40.06
04/22/2025	144848	MICHIGAN PIPE AND VALVE	329.26
04/22/2025	144849	NICHOLAS A HILLING	140.00
04/22/2025	144850	NORTHERN MICHIGAN HARDWOODS	2,686.00
04/22/2025	144851	NW MI COG	9,600.00
04/22/2025	144852	OHM ADVISORS	7,444.13
04/22/2025	144853	OLSON & HOWARD PC	124.00
04/22/2025	144854	ON DUTY GEAR LLC	104.99
04/22/2025	144855	PENINSULA FIBER NETWORK LLC	360.00
04/22/2025	144856	PLUNKETT COONEY	160.00
04/22/2025	144857	POWER LINE SUPPLY	88.00
04/22/2025	144858	POWER SYSTEM ENGINEERING INC	3,860.00
04/22/2025	144859	POWERDMS INC	7,525.00
04/22/2025	144860	POWERPLAN	1,996.74
04/22/2025	144861	QUADIENT INC	180.00
04/22/2025	144862	RANGE TELECOMMUNICATIONS	381.21
04/22/2025	144863	TARGET SPECIALTY PRODUCTS	581.21
04/22/2025	144864	TELNET WORLDWIDE	171.63
04/22/2025	144865	THE TROPHY CASE	336.00
04/22/2025	144866	UNIFIRST CORPORATION	410.56
04/22/2025	144867	UPPER CASE PRINTING INK	1,394.50
04/22/2025	144868	US BANK ST PAUL	600.00
04/22/2025	144869	USABUEBOOK	12.25
04/22/2025	144870	VREDEVOOGD PLUMBING, HEATING,	1,247.00

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/22/2025 - 04/22/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: PAPER CHECK - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
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Bank 1 GENERAL CASH - HUNTINGTON BANK

04/22/2025	144871	WEX BANK	3,859.81
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1 TOTALS:

Total of 71 checks:	442,026.79
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Less 0 void checks:	0.00
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Total of 71 Disbursements:	442,026.79
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CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/03/2025 - 04/03/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: EFT - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/03/2025	169(E)	AMG PAYMENT SOLUTIONS	34.99
04/03/2025	170(E)	AMG PAYMENT SOLUTIONS	34.99
1 TOTALS:			
Total of 2 Checks:			69.98
Less 0 Void Checks:			0.00
Total of 2 Disbursements:			69.98

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/07/2025 - 04/07/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: EFT - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/07/2025	171(E)	MICHIGAN PUBLIC POWER AGENCY	9,085.15
1 TOTALS:			
Total of 1 Checks:			9,085.15
Less 0 Void Checks:			0.00
Total of 1 Disbursements:			9,085.15

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/10/2025 - 04/10/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: EFT - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
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Bank 1 GENERAL CASH - HUNTINGTON BANK

04/10/2025	178(E)	STATE OF MICHIGAN	32,680.99
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1 TOTALS:

Total of 1 Checks:	32,680.99
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Less 0 Void Checks:	0.00
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Total of 1 Disbursements:	32,680.99
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CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/11/2025 - 04/11/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: EFT - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/11/2025	172(E)	**EFTPS* Payroll Taxes	56,507.36
04/11/2025	173(E)	Alerus Financial	558.00
04/11/2025	174(E)	MissionSquare - 401 Plan 1091	1,204.14
04/11/2025	175(E)	MissionSquare - 457 Plan 3009	27,635.62
04/11/2025	176(E)	MissionSquare - Roth IRA 7061	1,285.00
04/11/2025	177(E)	STATE OF MICHIGAN	7,887.05
1 TOTALS:			
Total of 6 Checks:			95,077.17
Less 0 Void Checks:			0.00
Total of 6 Disbursements:			95,077.17

CHECK REGISTER FOR CITY OF CHARLEVOIX

CHECK DATE 04/14/2025 - 04/14/2025

BANK CODE: 1 - GENERAL CASH - HUNTINGTON BANK - CHECK TYPE: EFT - CHECK SOURCE: COMPUTER GENERATED CHECKS

Check Date	Check	Vendor Name	Amount
Bank 1 GENERAL CASH - HUNTINGTON BANK			
04/14/2025	179(E)	MICHIGAN PUBLIC POWER AGENCY	17,477.83
1 TOTALS:			
Total of 1 Checks:			17,477.83
Less 0 Void Checks:			0.00
Total of 1 Disbursements:			17,477.83

Charlevoix City Council

Consent Agenda

Title: Trout Tournament Parking Request

Date: April 21, 2025

Presented By:

Background:

The Charlevoix Area Trout Tournament will be taking place June 13-June 15 this year. The organizers of the event have requested the parking fees be waived for participants using the Ferry Boat Launch from June 12 (practice day) through June 15.

Recommendation:

Motion to adopt Resolution No. 2025-04-03 to waive parking fees at Ferry Boat Launch for Charlevoix Area Trout Tournament participants on the requested days.

Attachments:

1. Launch_Fees_2025
2. Resolution 2025-04-03 trout tourny



Charlevoix Trout Tournament Inc.

April 14th, 2025

Mark Heydlauff, City Manager
City of Charlevoix
210 State Street
Charlevoix, MI 49720

Dear Mark,

The 40th Annual Charlevoix Area Trout Tournament will take place June 13th through the 15th. The tournament is once again requesting the launch fees to be waived for tournament participants on the dates of the tournament and on June 12th for a practice fishing day.

Thank you for your consideration on this matter and please feel free to contact me if you have any questions regarding the tournament.

Sincerely,

Charlevoix Trout Tournament, Inc.
Chris Mikulski, Vice President

CITY OF CHARLEVOIX
RESOLUTION NO. 2025-04-03
WAIVE LAUNCH FEES FOR TROUT TOURNAMENT

WHEREAS, the Lake Charlevoix Area Trout Tournament will be held on June 13-15, 2025; and

WHEREAS, the Lake Charlevoix Area Trout Tournament is requesting that boat launch fees be waived for the tournament and the June 12 practice fishing day; and

WHEREAS, Title VII, Chapter 71, Section 71.04 of the City Code permits City Council to waive boat launch fees for special or public events.

NOW THEREFORE BE IT RESOLVED that the City of Charlevoix hereby waives launch fees for the Lake Charlevoix Area Trout Tournament from June 12 to June 15, 2025.

RESOLVED this 21st day of April 2025 A.D.

Resolution was adopted by the following yea and nay vote:

Yeas:

Nays:

Absent:

Charlevoix City Council

Consent Agenda

Title: 2025 Loader/Backhoe Purchase for \$165,158

Date: April 21, 2025

Presented By:

Background:

In the approved 2025/26 budget, we have allocated money in the motor pool budget for the purchase of a new loader/backhoe. This machine will replace an existing loader/backhoe that is over 20 years old and has become more of a maintenance issue to keep it running properly. This machine is generally used by the Linemen, but is available to the DPW department when needed or in times of emergency. This new machine will also have interchangeable attachments that will work on the DPW's loader/backhoe.

We have been working with AIS Construction Equipment out of Williamsburg to come up with the specifications for this new machine along with any attachments etc. AIS has provided us with a quote (see attachments). This quote is through the MIDEAL program and as such there are savings of just over \$97,000. This quote also has the extended warranty included in the purchase price. The total purchase price is also below what we had budgeted.

Recommendation:

Motion to approve the quote, as presented, for \$165,158 and authorize the City Manager to sign any required documents.

Attachments:

1. 320 P with FORKS MIDEAL 2025
2. Quote MIDEAL Deere 320P Tractor Backhoe with coupler and forks Charlevoix DPW 2025

320 P-Tier Backhoe Loader

18-Mar-2025

Code	Description	Qty	List Price
17C1T	320 P-Tier Backhoe Loader	1	\$187,508.00 USD
Option Codes			
0202	United States	1	No Added Cost
0351	Translated Text Labels Vehicle labels translated to selected language with English labels. Includes labels for operator station, engine and backhoe controls options.	1	No Added Cost
0259	English English language for operator's manual and electronic content. Includes operator's manual and 4G OM packet.	1	No Added Cost
0607	Level 3 Cab Includes: - Enclosed cab - LED work lights - Premium seat (air suspension, heat, and vented) - Pull-down front sunshade	1	\$3,587.00 USD
0652	Level 2 Performance Package Includes: - MFWD guard - Boom protection plate - Stabilizer guards - Heavy duty stabilizer pads - Heavy duty front grille screen	1	\$2,863.00 USD
0950	Less Vision System	1	No Added Cost
1210	Premium Package Radio AM/FM/Weather Radio, Bluetooth capable with microphone, and 3.5mm auxiliary input	1	\$527.00 USD
183N	JDLink™ Includes integrated cab wiring harness, antenna, and JDLink™ Modem's (MTG). JDLink™ connectivity is enabled separately through the JDLink™ website. Connectivity service is subject to country availability.	1	No Added Cost
3009	Autoshift Transmission - Mechanical Front Wheel Drive (MFWD) with Limited Slip Differential	1	No Added Cost

5F/3R autoshift transmission.

A single electric transmission control lever is mounted on the left side of steering column (forward/neutral/reverse). Powershift configurations include gear up and down buttons integrated into the loader lever handle. Autoshift can be turned on/off from the sealed switch module. When autoshift is off, the transmission will operate as a powershift.

4006	John Deere 4.5L - FT4/Stage IV	1	No Added Cost
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Net peak power of 113 Hp.

For use only in areas where EPA final tier 4/EU stage IV is required.

Turbocharged.

Wet sleeve cylinder liners.

2 valves / cylinder.

Electronically controlled HPCR fuel delivery system, B20 biodiesel compatible .

Serpentine belt with automatic belt tensioner.

Enclosed safety fan guard.

Vertical spin-on engine oil filter.

Spin-on fuel filter with water separator.

Dual safety element dry-type air cleaner with evacuator valve.

Underhood catalysts with vertical curved exhaust stack.

Passive flow-through exhaust aftertreatment system with grid heater.

Electronically controlled, variable-speed cooling fan.

5255	Galaxy 550 Radial - 500/70R24 Rear & 340/80R18 Front	1	\$3,396.00 USD
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Rear tire chains require wheel spacers (AT347522).

Tire designed for hard surface roading and snow.

6155	Dual Batteries with Disconnect and Jump Post	1	\$314.00 USD
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350 minute reserve capacity (1900 CCA).

Recommended for use in ambient temperatures below 32 degrees F (0 degrees C).

6754	Heavy Lift - Extendible Dipperstick	1	\$13,082.00 USD
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The heavy lift option includes larger rear structures and hydraulic cylinders that provides up to 25% increase in lifting capacities and break out forces. Includes heavy duty bucket cylinder (code 8125 not orderable).

Requires code 7028.

6576	1000 lb. (454 kg.) Front Counterweight	1	\$1,542.00 USD
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7002	Auxiliary Hydraulics with One & Two Way Flow (Hammer & Thumb/Swinger)	1	\$5,407.00 USD
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Includes factory installed plumbing to bulkhead (mid-point of dipperstick) for one and two way flow valves (selective flow and proportional). Includes hydraulic quick disconnect fittings KV11305 and AT312681 for one-way flow circuit rated for full auxiliary circuit flow capacity. Quick disconnects require connection without pressure and are identical to the couplings provided with the front loader 3rd function hydraulic option.

7028	Pilot Controls, Two Lever, with Pattern Selection Proportional auxiliary control and extendable dipperstick control integrated into pilot control levers.	1	\$3,050.00 USD
7041	Loader Coupler, Three-Function Hydraulics, Single Lever Includes auto ride control, option 8165. Single-lever control with horn, rear differential lock, electric clutch cutoff switch, MFWD (momentary), gear selection buttons, and electrohydraulic (EH) proportional auxiliary roller. For multi-purpose coupler bucket and front attachments. Includes valve with circuit relief and .5 in. (12.7 mm) hoses and steel lines to loader cross tube.	1	\$10,923.00 USD
7806	24 in. (611 mm.) Heavy-Duty Bucket, 6.9 cu. ft. (0.20 cu. m.) Pin-on bucket includes 5 teeth, TK-system Fanggs	1	\$2,326.00 USD
7704	Deere Standard Quick Coupler - 42 in. Thumb Ready Includes factory installed thumb cylinder mounting ears installed onto dipper. If factory installed thumb option required, order code 8027 - 42 inch tine.	1	\$1,808.00 USD
7860	92 in. (2.35 m.) General Purpose Coupler Bucket, 1.39 cu. yd. (1.06 cu. m.) Coupler bucket includes reversible bolt-on cutting edge and skid plates. Requires loader coupler.	1	\$5,938.00 USD
8096	Premium Mirrors - Exterior Rear View Mirrors (2) and Front View Mirror (1)	1	\$203.00 USD
8089	Engine Coolant Heater 110 Volt (1000 Watts). Requires Dual Batteries code 6155.	1	\$188.00 USD
8226	LED 4-Corner Beacon Lights	1	\$644.00 USD

Four-corner, low profile LED beacon system brings greater awareness of the machine operating on the jobsite.

8027	Thumb - 42 in. 4 Tine	1	\$7,043.00 USD
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Reference thumb compatibility matrix link in resources section of sales manual for use with couplers and buckets, and to determine necessary thumb length. Requires two-way auxiliary hydraulics, code 7002 or 7004. It does include plumbing for two-way auxiliary valve.

Field Installed Attachments

AT434236	Rubber Bumper for Grille Frame	1	\$248.00 USD
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Forks, Pallet (2) 60 in.(1.52m) with 60 in. (1.52m) Coupler Fork

AT308139	Carriage	1	\$5,853.00 USD
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Total			\$256,450.00 USD
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LIST			\$256,450.00
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MIDEAL			-\$97,451.00
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BASE			\$158,999.00
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PDI, Install of Kits and attachments			\$2,820.00
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Extended Warranty 60/2000			\$2,839.00
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Delivery			\$500.00
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2025 MIDEAL	Warranty PTH 60/2000h included		\$165,158.00
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AIS Construction Equipment
8300 M-72 East
Williamsburg, MI 49690
PHONE 231-267-5060 / FAX 231-267-5257



DEERE 320P Tractor Backhoe - MIDEAL 2025

Customer			
Name	City of Charlevoix		
	Department of Public Works		
City	Charlevoix	State	MI ZIP 49720
Phone	steven@cahrelvoixmi.gov		

Misc	MI DEAL
Date	4/10/2025
Attn	Steve N
Rep	Daniel N
Cell.	231 631 6168

Qty	Description	List Price	NET
1	NEW 2025 Deere 320P Tractor Backhoe Specs details 3/18/2025	\$ 256,450.00	\$ 158,999.00
	PDI and Dealer Fit		\$ 2,820.00
	Extended warranty PTH 60m/2000h		\$ 2,839.00
AIS is registered with State of Michigan MIDEAL under contract no. 24000000158			

Payment
TERMS: Lead time 120 days

SubTotal	\$ 164,658.00
Delivery	\$ 500.00
MI Sales Tax	exempt
TOTAL NET PRICE	\$ 165,158.00



QUOTED PRICES FIRM FOR 30 DAYS. ALL QUOTES SUBJECT TO AVAILABILITY.

Charlevoix City Council

Consent Agenda

Title: Airport Utility Tractor

Date: April 21, 2025

Presented By:

Background:

As the Council is aware, the airport applied for a state/local grant for approximately \$90,000 to purchase a new tractor. On April 8, 2025, we received a letter from the Michigan Department of Transportation (MDOT) indicating their intent to award. In the letter we received, there were instructions on how to finalize the grant and receive the funds. The letter also indicated how the funds were going to be distributed and the necessary forms and documents for receiving those funds.

I am requesting permission to proceed with filling out all forms and documents to submit to MDOT to finalize the grant process. Further, I request, once the grant is received, that the City Manager sign all necessary documents to receive the tractor from the Sourcewell distributor listed on the invoice. I have attached copies of the award letter and a frequently-asked questions document from MDOT. I have also attached a copy of the invoice for the tractor we are requesting. The attached resolution will authorize staff to accept the grant and make all necessary arrangements to procure the tractor for use at the airport.

Recommendation:

Motion to approve Resolution 2025-04-04 and authorize the acceptance of the grant.

Attachments:

1. Charlevoix Municipal Airport
2. FAQ final 4.8.25
3. Ina Store Inc Quote - 04-16-26
4. Resolution 2025-04-04 MDOT Aero Execute Contract for Airport Vehicle



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

BRADLEY C. WIEFERICH, P.E.
DIRECTOR

April 8, 2025

Rob Scholey
Charlevoix Municipal Airport
111 Airport Drive
Charlevoix, Michigan 49720

Dear Rob Scholey,

Subject: FY 2025 State Local Program Funding Intent to Award

House Bill 747 Section 1101 appropriates \$4,000,000 for capital development projects at general aviation airports for Michigan. Based on this funding, the Office of Aeronautics is offering the State Local Program, and your airport has been selected to participate.

On January 30, 2025, the Michigan Aeronautics Commission (MAC) approved the attached list of projects for the Fiscal Year (FY) 2025 State Local Program and your project(s) were approved as attached.

To proceed, please submit the following details for each of your approved project(s):

- Detailed scope of work
- Work plan
- Project schedule
- Final bid or actual final cost breakdown, specifying the work to be completed and by whom
- Contact information for authorized contract signer (email address and phone)

If you are unable to secure a contractor or choose not to move forward with your proposed project, please notify the Office of Aeronautics in writing as soon as possible to forfeit the funding.

Please note that MDOT will not be offering a statewide crack sealing and pavement marking program. Airports will need to procure those projects on their own. The dollar amount listed on the MAC approved project list represents the maximum state grant amount. If additional costs arise for crack sealing or pavement marking, they may be considered on a case-by-case basis.

Please provide the updated information to your original FORM 1579, and resubmit it again to our office.

Once the scope of work, work plan, project schedule, and final bids/costs are submitted to MDOT, the information will be reviewed and approved and an e-mail along with the sponsor contract will be sent to the authorized signer for signature.

Payments will be processed in two transactions:

1. First Payment: 50% of the total contract budget will be paid upon the contract signature and execution by MDOT, which will also be your notice to proceed.
2. Second Payment: The remaining balance (not exceeding the total contract amount) will be disbursed once proof of costs and grant expenditures documents from the first payment and first 50% of the project was completely expended and sent to MDOT.

To receive any payments, your airport must be registered in SIGMA VSS, our financial system. If you are not already a registered vendor, please complete this step before sponsor contract execution:

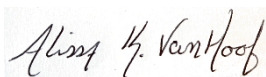
- Website info. - www.michigan.gov/Sigmavss
- Email - SIGMA-Vendor@michigan.gov
- Phone - 517-284-0540

At project completion, you must submit a final financial summary and final contract closeout report including all back up documents for project costs including a one-page summary of the completed project.

Failure to complete the project and submit the required closeout documents by the end of FY 2025 may affect future funding eligibility, and project funds may be recalled.

MDOT Aeronautics is committed to supporting you throughout this process. If you have any concerns or questions, please contact Jim Hartman at 517-242-4968 or hartmanj1@michigan.gov.

Sincerely,



Alissa K. VanHoof, PE
Chief Engineer
Office of Aeronautics

cc: Office of Aeronautics File
Bryan Budds, Director
Linn Smith, Deputy Director
Jim Hartman
Karin Palmer

MAC list

Frequently Asked Questions

FY2025 State Local Program

General Questions Updated April 8, 2025

Q1. Is there a local match?

A1. There is no local match required. The funding is 100% State up to the approved to MAC transfer amount.

Q2. Who procures and manages the work?

A2. Procurement should follow local sponsor or airport requirements and policies. Management of projects is required by the airport and sponsor.

All required permits, processes, and approvals will remain the responsibility of the airport sponsor including but not limited to project design, procurement / bid letting (if needed), construction administration, environmental clearance, airspace approval, local permitting, and other items involved in completing the work. Airspace (OEAAA submission) and any airport construction and phasing plans are the responsibility of airport and sponsor.

Q3. Are bids and quotes required for the application or can estimates be used?

A3. Bids or final costs are required. Estimates cannot be used.

In your work plan and updated application, provide the final costs and explain how they were determined.

Final project reimbursement will be based on documented final costs and expenditures.

Q4. What are the next steps for the airport manager and airport sponsor?

A4. The next steps for the airport manager and sponsor are as follows:

- 1) Submit a revised or final application, including an updated work plan, scope, schedule, final costs, and authorized signer contact information. These details will serve as the basis for the executed contract.
- 2) Complete the **State Local Program Application (Form 1579)**, which can be found on our website [here](#).
- 3) Once MDOT Aeronautics receives the required information, a contract will be prepared and sent via email to the airport's authorized signer.
- 4) After the signed contract is returned, MDOT Aeronautics will execute it, sharing an executed copy with the airport, and the project will be officially set up in our system. This will be your notice to proceed with the work.

Q5. What does a work plan look like?

A5. A sample work plan can be provided upon request.

Q6. What do I do if my costs for crack sealing surface/pavement joints and pavement markings have changed and is above the maximum awarded amount?

A6. If your costs for sealing pavement surfaces, pavement joints, or pavement markings exceed the maximum awarded amount, consult with MDOT Program Manager Jim Hartman (hartmanj1@michigan.gov) before submitting a revised application and work plan.

Q7. Wasn't MDOT responsible for procuring and managing crack sealing surface joints and pavement marking projects as part of a statewide maintenance program?

A7. As noted in **Q2**, airports are responsible for procuring their own sealing surface joints and pavement marking projects through local contractors or vendors.

Q8. What will I have to do to get the first 50% of project costs?

A8. After the contract is executed and the project is set up in our system, MDOT will issue a payment of up to 50% of the approved MAC amount or bid amount whichever is lower.

Q9. How do I receive the remaining grant money?

A9. The remaining grant funds will be issued after a progress report is received, along with verifiable proof that the first payment or 50% of project costs was completely expended. This includes accounting and proper backup documentation for expenditures incurred before the second reimbursement is issued.

Q10. How do I send my reimbursement, and closeout information to MDOT?

A11. All reimbursements and closeout information will be sent to Ryan Markowski (markowskir4@michigan.gov) with a cc to Jim Hartman (hartmanj1@michigan.gov)

Q11. How will I receive payment?

A12. All disbursements of State Local Program funds are managed by the sponsor through SIGMA VSS as outlined in the award letter. Payments are typically made via electronic transfer or, if preferred, by paper check, depending on the sponsor's chosen option.

Q12. What other things will be required as part of the administration of this grant money?

A13. As part of administering this grant, a final contract closeout report will be required. This report should summarize and document all project-related activities, along with a detailed financial breakdown outlining all costs. Additionally, a project certification must be provided to confirm that all work was completed as required per the scope per the sponsor and contract signer.

Ina Store Inc.

10035 21 Mile Rd
Tustin MI 49688
Phone: 231-825-2575 ext 7
Cell: 231-429-6724
dave@theinastore.com

SALES QUOTE

DATE: 4/16/2025

P.O. #

SOLD TO

CHARLEVOIX MUNICIPAL AIRPORT
111 AIRPORT DRIVE
CHARLEVOIX, MI 49720

NOTES

TRACTOR DELIVERY BY 5/1/2025
SNOWBLOWER 5 WEEKS OUT
BOX BLADE 3 WEEKS OUT

231-547-3605

SALES PERSON	DELIVER OR PICKUP	PAID	EMAIL ADDRESS
DAVE			russsm@charlevoixmi.gov

ITEM #	DESCRIPTION	SERIAL NUM.	TOTAL
NEW	CASE-IH 75C TRACTOR		88,820.00
NEW	CASE-IH L620 LOADER		
	FULL HVAC CAB		
	AIR RIDE SEAT		
	12X12 POWERSHUTTLE TRANSMISSION		
	TWO REAR HYDRAULIC REMOTES		
	FOUR WHEEL DRIVE		
	TURF TIRES		
	64 PTO HORSEPOWER		-
	BEACON LIGHT		-
	WORK LIGHTS FRONT AND REAR		-
	84" LOADER BUCKET		-
	REAR WHEEL WEIGHTS		-
NEW	ERSKINE 925FM FRONT MOUNTED BLOWER		17,795.00
			-

Other Comments or Special Instructions

ALL USED EQUIPMENT SOLD AS IS NO WARRANTY.
QUOTES ON NEW EQUIPMENT VALID FOR 30 DAYS.
FINANCE CONTRACTS SUBJECT TO DOCUMENT FEES.

SUBTOTAL \$ 106,615.00
TAX RATE 6.000%
TAX \$ -
SOURCEWELL \$ (17,282.00)
DOWN PMT
TOTAL \$ 89,333.00

Authorized by

Date

**CITY OF CHARLEVOIX
RESOLUTION NO. 2025-04-04**

APPROVAL OF EXECUTED CONTRACT WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION OFFICE OF AERONAUTICS FOR
THE FISCAL YEAR (FY) 2025 STATE/LOCAL AIRPORT PROGRAM TO PURCHASE TRACTOR

WHEREAS, the City has received notice from MDOT that the Charlevoix Municipal Airport has been selected to participate in the 2025 State Local Program;

WHEREAS, the amount being awarded is eighty-nine thousand three hundred and thirty-three dollars (\$89,333.00) with no local match;

WHEREAS, the City will use the funds to purchase a new snow removal tractor for airport operations from the Ida Store Inc. and;

WHEREAS, the City agrees to follow all the necessary and required laws and guidelines per the program and;.

NOW THEREFORE BE IT RESOLVED, that the City of Charlevoix City Council hereby authorizes the City to accept the grants funds offered by the Fiscal Year 2025 State/Local Airport Program and authorize the City Manager as the authorized contract signer and sign all required documents.

RESOLVED this 21st day of April A.D. 2025.

Resolution was adopted by the following yea and nay vote:

Yeas:

Nays:

Absent:

Charlevoix City Council

Consent Agenda

Title: Bridge Park Lift Station Cleaning

Date: April 21, 2025

Presented By:

Background:

The Bridge Park lift station is due to be cleaned out before the busy summer season. The last time this was done was in October of 2023 during the gate valve/bypass project. The work is crucial to ensure that the station performs as it should without the potential for problems due to grease and trash buildup. We don't plan on any confined space entry during this cleaning, only removal of the top layer of buildup as was done in May of 2023.

Recommendation:

Motion to approve the time and materials quote from GFL Environmental as presented and authorize the City Manager to sign all necessary paperwork.

Attachments:

1. GFL Proposal



3947 US 131 North, P.O. Box 1030 / Kalkaska, Michigan 49646 / Tel. (231) 258-9961 / Fax (231) 258-9971
1680 Peach Street/ Whitehall, Michigan 49461 / Tel (231) 893-1173/ Fax (231) 893-1193
2510 Saidla Road/ Kalamazoo, Michigan 49001 / Tel (269) 359-7503 / Fax (231) 893-1193

City of Charlevoix
Mr. Randy Wurst
210 State Street
Charlevoix, Michigan 49720

April 15, 2025

Re: Cost to Clean Lift Station

Dear Mr. Wurst,

GFL Environmental is pleased to provide you with an outline of the costs involved for the above referenced project. GFL will provide equipment/personnel to clean the lift station on bridge street in Charlevoix, Michigan. Approximately 11,000 gallons of non-hazardous waste material will be transported to and disposed of at the GFL facility in Kalkaska. All costs are portal to portal and are as follows:

Combo Unit w/Operator	\$ 345.00/Hour
(2) Cusco Tanker w/Operator	\$ 300.00/Hour/Tanker
Laborer	\$ 71.50/Hour
Disposal of Non-Hazardous Material (\$350.00 Minimum).....	\$ 0.90/Gallon
Waste Approval Fee (Good For 1 Year).....	\$ 150.00/Year
Overtime After 8 Hours (Monday – Friday or After 5:00PM)	\$ 33.00/Hour/Man
Miscellaneous Supplies/ PPE Supplies/Etc	Billed as Needed
EERF Surcharge	5.5%
Fuel Surcharge (Currently 12.40%).....	To Be Determined

The estimated total based on eight (8) hours to complete the work will be between \$ 20,300.00 and \$ 21,300.00.

Please keep in mind that this project will be billed on a time and materials basis with actual hours and actual quantities if applicable. There will be a two (2) hour minimum charge for these services

All costs are based on standard rates, if NMA or Prevailing Wages are required, a cost re-evaluation will be required and additional charges will apply. If evening, weekend or holiday work is required additional overtime surcharges/callout fees will apply.

If the material is shown to be other than described and/or if site conditions are found to be such that additional equipment or services are required for safe removal of these materials, a cost re-evaluation will be required.

A fuel surcharge will be applied to all fuel consuming items, the operator and subcontractors. The percentage is subject to change based on the current market. Currently the fuel surcharge is 12.80%, this rate changes weekly based on the DOE. An EERF surcharge will be applied to all invoices.

This pricing is valid for 30 Business Days. Any pricing fluctuations in steel, energy or similar markets may result in a price adjustment.

Please sign at the bottom of the Terms and Conditions page to accept this proposal and return a copy to my attention via fax or email. All work referenced above in this proposal will be invoiced directly to you, unless GFL Environmental Company is otherwise instructed. If you have any questions or comments, please feel free to give me a call. Thank you for the opportunity to provide you with this quote.

PROPOSAL SUBMITTED BY: Patrick Ray, Email: pray@gflenv.com, Cell: (231) 384-0574
PR/dr

TERMS AND CONDITIONS

The following Terms and Conditions governing the work to be performed by NORTHERN A-1 SERVICES, INC. (A-1) as specified in the Proposal on the front side hereof together with any attachments or addendum thereof (hereinafter the "Agreement") are as described hereinafter. By accepting this Agreement or authorizing or accepting all or any portion of the work to be done by A-1, the Customer shall be deemed to have accepted these Terms and Conditions.

1. In performing its service under this Agreement, A-1 shall be deemed to be acting solely as an independent contractor and only to the extent and for the specific purpose expressly set forth herein and in the Agreement. Nothing contained or implied in this Agreement shall at any time be construed to designate either party or any of its employees or representatives as representatives, partners, agents or joint venturers of the other party. Further, when executed, the Agreement does not transfer any liability of the Customer as a generator (as defined in 40 CFR) to A-1, all of said responsibility remaining with Customer.

2. A-1 shall use commercially reasonable efforts in performing services in accordance with this Agreement, including completing such services by mutually agreed-upon completion dates, provide that A-1 shall not be responsible for any untimely provision of or failure to perform its services if there is any failure to provide or delay in providing A-1 with reasonable access to premises or property, necessary documentation, information, materials or contractors retained by Customer or its representatives, or if due to any act of God, labor problems, fire, inclement weather, act of governmental authority, failure of transportation or equipment, accident or any other cause beyond A-1's reasonable control and without its negligence or willful misconduct. In the event of any of the foregoing circumstances, payment of money for services already rendered shall not be excused and A-1's time for completion of this Agreement shall be extended accordingly.

3. CUSTOMER ACKNOWLEDGES THAT A-1 HAS MADE NO IMPLIED OR EXPRESS REPRESENTATION, WARRANTY, OR CONDITION WITH RESPECT TO THE SERVICES, EQUIPMENT, OR MATERIALS TO BE PROVIDED BY A-1 HEREUNDER, EXCEPT AS EXPRESSLY SET FORTH HEREIN. A-1 WARRANTS THAT THE SERVICES, EQUIPMENT OR MATERIALS PROVIDED TO CUSTOMER HEREUNDER WILL BE PERFORMED AND/OR PROVIDED IN ACCORDANCE WITH CUSTOMARY PROCEDURES AND PRACTICES GENERALLY IN A-1'S PROFESSION FOR USE IN SIMILAR UNDERTAKINGS, AND A-1 SHALL INDEMNIFY AND HOLD HARMLESS CUSTOMER FROM AND AGAINST LOSSES, COSTS, EXPENSES AND LIABILITIES WHICH ARE ATTRIBUTABLE TO THE BREACH OF SUCH WARRANTY, BUT IN NO EVENT SHALL A-1 BE LIABLE TO CUSTOMER OR ANY THIRD PARTY FOR ANY DAMAGES OTHER THAN THOSE DIRECTLY, APPROXIMATELY AND FORESEEABLY ARISING FROM SUCH BREACH, LIABILITY FOR LOSSES IN TRANSIT SHALL BE LIMITED TO THOSE DIRECTLY RELATED TO SUCH LOSS AND ATTRIBUTABLE TO A-1'S NEGLIGENT OR WILLFUL MISCONDUCT.

4. Customer warrants and represents that:

- (a) Customer has complied with all applicable federal, state and local laws and regulations, ordinances and orders, including, but without limitation, those requiring proper waste characterization and preparation of manifest and shipping papers.
- (b) Customer has fully and accurately disclosed all such information as shall be required to enable A-1 to perform its services hereunder, including but without limitation, the hazardous constituents to be handled as specified in this Agreement.
- (c) All materials tendered to or otherwise to be handled by A-1 as specified in this Agreement will conform with the information disclosed pursuant to this Agreement.
- (d) Customer has sole title to and is under no legal restraint or order which would prohibit transfer of possession or title to all materials covered by this Agreement.
- (e) All waste containers supplied or tendered by Customer will meet container specifications and marketing and labeling requirements of all applicable federal, state and local statutes, regulations, ordinances and orders.

5. Customer shall indemnify and hold harmless A-1 from and against any and all losses, costs, expenses and liabilities, including attorneys fees which are incurred by A-1 and are directly or indirectly attributable to (i) the breach of any warranty specified in this Agreement, (ii) any act or omission of Customer, (iii) any negligent or willful misconduct of the Customer in connection with the performance of this Agreement, (iv) any condition which exists on or at the site, or (v) any act or omission of the Customer's agents, contractors or subcontractors.

6. Customer agrees that all specifications and decisions regarding the methods, manners, facilities and/or locations of disposal or other disposition of any materials handled or to be handled pursuant to this Agreement have been or will be made by and are the sole responsibility of the Customer. Customer will also be responsible for making the above decisions and specifications with regard to the disposal or other disposition of waste material handled by any subcontractor. The Customer hereby indemnifies A-1 against, and holds it harmless from, any and losses, claims, expenses and liabilities, including attorney fees incurred by A-1 which are directly or indirectly related to Customer's obligations under this paragraph. The subcontractor is expressly prohibited from violating this provision.

7. A-1 shall use commercially reasonable efforts to comply with all federal, state and local statutes, regulations, ordinances or orders, including but not limited to those related to environmental, fire, transportation, safety and health matters applying to the performance of its services pursuant to this Agreement, but shall not be liable to Customer for failure to so comply unless such noncompliance is

due to the negligence or willful misconduct of A-1.

8. A-1 shall not be responsible for activities of any contractors or subcontractors or their employees or agents at Customer's site unless retained by A-1 (in which event A-1 shall be responsible solely for their supervision in accordance with generally accepted practices of A-1's profession).

9. A-1 shall invoice Customer and Customer shall pay to A-1 for its services under this Agreement as follows:

- (a) Fees and all other charges will be billed to Customer as provided in the Agreement or as otherwise mutually agreed in writing.
- (b) Fees shall be paid net within thirty (30) days of being invoiced by A-1 to Customer. If such invoice is not paid within such period, Customer shall be liable to A-1 for a late charge accruing from the date of such invoice to the date of payment at the lower of eighteen (18%) percent per annum or the maximum rate allowed by law. All taxes applicable to the proceeds received by A-1 hereunder shall be the liability of A-1 and Customer shall not be required to withhold or pay any amounts for federal, state or local income tax, social security, unemployment, or worker's compensation.
- (c) Customer hereby agrees that the balance as stated on the billing from A-1 to Customer shall be deemed to be correct conclusive and binding on the Customer unless Customer notifies A-1 in writing of the particular item that is alleged to be incorrect within twenty (20) days from the date of receipt of the billing.
- (d) If Customer fails to pay any invoice in full within thirty (30) days after invoice date, A-1 may, at any time and without waiving any other rights or claims against Customer and without thereby incurring any liability to Customer, elect to terminate performance of services. Notwithstanding any such termination of services, Customer shall pay to A-1 in full for all services rendered by A-1 to the date of termination of services, plus all interest, termination cost and expenses incurred by A-1 and related to such termination. Customer shall reimburse A-1 for all costs and expenses of collection, including attorneys fees.

10. Failure of either party to enforce any of its rights hereunder shall not constitute a waiver of such rights or any other rights hereunder.

11. This Agreement constitutes the full Agreement of the parties and may only be amended, added to, superseded or waived in writing signed by both parties. Reference by A-1 to any purchase or work order number supplied by customer shall be for accounting identification purposes only and any terms or conditions therein or in any acknowledgement, confirmation or other communication by customer which are in addition to or in conflict with this Agreement and Terms and Conditions are rejected.

12. If any provision of this Agreement is held invalid or unenforceable, such provision shall thereon be deemed modified only to the extent necessary to render the same invalid or excluded from this Agreement, as the situation may require, and this Agreement shall be enforced and construed as if such provision has been included herein as so modified or not been included herein as the case may be.

13. All claims, disputes and other matters in question between Customer and A-1 arising out of or relating to this Agreement shall be decided by arbitration in accordance with the then current Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing law. The award rendered by the arbitrator shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Notice of the demand for arbitration shall be filed in writing with other party to this Agreement and with the American Arbitration Association within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after (i) the date when filing a claim with the American Arbitration Association would be barred by the statute of limitations established by the American Arbitration Association, or (ii) the date when institution of legal or equitable court proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations, whichever shall first occur.

14. If any legal action or arbitration or other proceedings is brought for the enforcement of this Agreement or because of an alleged dispute, breach, default or misrepresentation in connection with any of the provisions of this Agreement, the successful or prevailing party shall be entitled to recover attorneys fees and other costs incurred in that action or proceeding, in addition to any other relief to which it may be entitled and subject to the limitations expressed elsewhere in this Agreement.

15. The validity, interpretation and performance of this Agreement shall be governed and construed in accordance with the laws of the State of Michigan.

16. Written acceptance of the Agreement may be delivered via facsimile, receipt of which shall be the equivalent of receipt of the original Agreement, for all purposes.

17. All notices to either party hereto shall be deemed to be duly given if and when mailed, with postage prepaid, to the respective address of the parties appearing on the front hereof, or if and when delivered personally or via facsimile.

18. The Agreement shall be binding on the parties, their respective heirs, executors, administrators, assigns and personal representatives.

ACCEPTANCE OF PROPOSAL AND TERMS & CONDITIONS

Customer Signature: _____

Title: _____

Date: Page 39 of 214

Charlevoix City Council

All Other Actions and Requests

Title: Fire Truck Acquisition

Date: April 21, 2025

Presented By: Mark Heydlauff, City Manager

Background:

We are narrowing our focus on the next fire truck purchase. I've attached the proposal and the schematic for the apparatus Chief Thorp is recommending. The City would buy the apparatus as we currently own the ladder truck. The township has agreed in principle to 40% of the cost of it because of its dual-use capabilities.

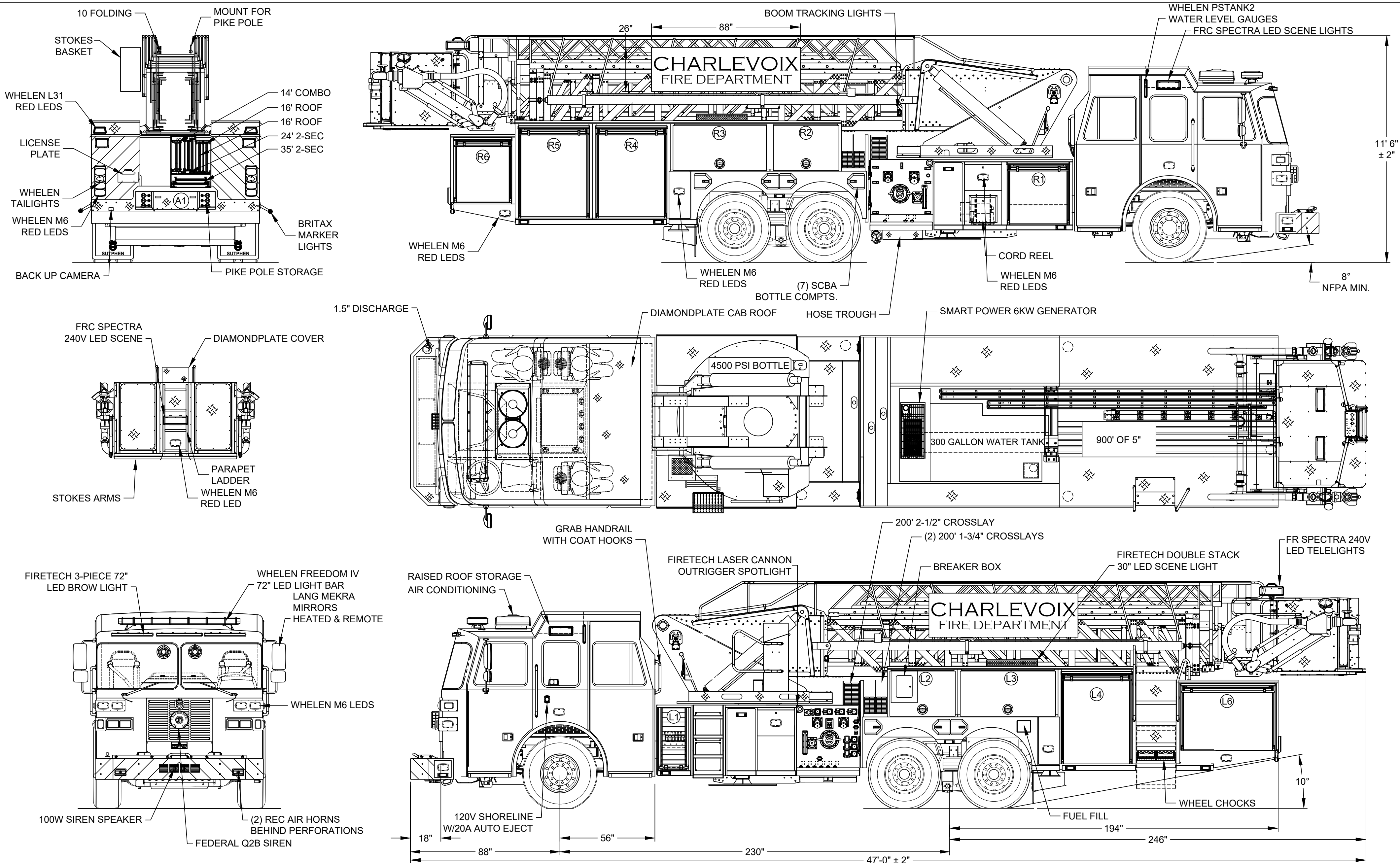
I'm not seeking any action on this Monday but wanted to discuss it further with Council to answer any questions you may have as we get closer to acquisition. This is a preliminary review of the purchase.

Recommendation:

Council discussion and direction.

Attachments:

1. Sutphen Fire Truck Schematic
2. Sutphen Proposal on SPH 100 4-16-2025



DOOR OPENINGS			COMPARTMENT DIMENSIONS			DOOR OPENINGS			COMPARTMENT DIMENSIONS		
COMPT.	HEIGHT	WIDTH	HEIGHT	WIDTH	DEPTH	COMPT.	HEIGHT	WIDTH	HEIGHT	WIDTH	DEPTH
L1	31 13/16	13 7/16	38 1/2	20 5/16	19 7/8	R1	31 13/16	33 7/16	38 1/2	40	8 1/2 LOWER 10" 27 1/2 UPPER 28 1/2"
L2	23	33 1/4	27 1/2	41 1/2	12 1/8	R2	23	33 1/4	27 1/2	41 1/2	26 1/2
L3	23	50 1/4	27 1/2	58	12 1/8	R3	23	50 1/4	27 1/2	58	26 1/2
L4	48 1/2	38 3/4	56 1/2	45 3/4	26 1/2	R4	48 1/2	38 3/4	56 1/2	45 3/4	26 1/2
L6	32 1/8	30 7/8	40 1/8	34 3/4	26 1/2	R5	48 1/2	38 3/4	56 1/2	45 3/4	26 1/2
						R6	32 1/8	30 7/8	40 1/8	34 3/4	26 1/2

DOOR OPENINGS			COMPARTMENT DIMENSIONS		
COMPT.	HEIGHT	WIDTH	HEIGHT	WIDTH	DEPTH
A1	9 1/8	24 1/2	9 7/8	26	88

TOTAL COMPARTMENT VOLUME - 283.49 CU.FT.

CUSTOMER APPROVAL			DRAWN BY:		
NAME:			K.EXEL		
TITLE:			DATE:		
DATE:			10/27/2023		
			MFG. FACILITY:		
			DUBLIN		

CHARLEVOIX FIRE DEPARTMENT
CHARLEVOIX, MI

SPH100 AERIAL PLATFORM
CHARLEVOIX, MI (2023 SPH100)

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

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

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

THIS PRINT IS PROVIDED ON A RESTRICTED BASIS AND IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTEREST OF SUTPHEN CORPORATION.



PROPOSAL

TO THE:

Charlevoix Twp. Fire Department
08977 Martin Road
Charlevoix, MI 49720

DATE: April 16, 2025

We hereby propose and agree to furnish the following firefighting equipment upon your acceptance of this Proposal:

Reference: Sourcewell Contract No. #113021-SUT

One (1) Sutphen Heavy Monarch SPH-100 Mid Mount Platform with Equipment

Package Complete and Delivered for the Total Sum of\$2,315,969.00

*If a performance bond is not desired shall a pre-payment not be desired -\$17,225.00

The apparatus and equipment being purchased hereunder shall be completed within approximately **35-37 months** after the Sutphen's receipt and approval of Purchaser's acceptance of this Proposal.

This Proposal shall be valid for **30 Days**. If a Purchase Agreement or Purchase Order is not received to Sutphen in **30 Days**, this Proposal, Sutphen reserves the right to extend, withdraw, or modify this Proposal, including pricing, delivery times, and prepayment discounts, as applicable.

Respectfully submitted,

Harrison Sutphen

Harry B. Sutphen
Heritage Fire Equipment
Authorized Representative for Sutphen Corporation

740-819-5440



TERMS & CONDITIONS

Changes to National Fire Protection Association ("NFPA") 1900, Environmental Protection Agency ("EPA") or changes legislated by Federal, State or Local Governments or changes in parts availability or vendor relationships that impact the cost to manufacture the truck may incur additional charges which shall be borne by the Purchaser. These may include but are not limited to changes that affect the major vendors of the fire apparatus industry such as pump manufacturers, seat manufacturers, electrical power supplies (generators) and powertrain (engine & transmission). Any such changes shall be documented on a change order executed by both Sutphen and Purchaser.

Sutphen shall provide written notice to the Purchaser as soon as it reasonably believes any cost increase provision may be invoked. Sutphen shall provide, upon written request, documentation of such changes and increases.

Sutphen will use its reasonable best efforts to deliver the apparatus within the timeframe quoted herein, provided that such delivery date shall be automatically extended for delays beyond Sutphen's control, including, without limitation, strikes, labor disputes, riots, civil unrest, pandemics, war or other military actions, sabotage, government regulations or controls, fire or other casualty, or inability to obtain materials or services. If such delay occurs, Sutphen shall give notice of delay to Purchaser. Purchaser shall not be entitled to any discount or reduction in price for such delay and Sutphen shall not be liable for any damages (compensatory, incidental, consequential or otherwise) related to such delay.

Final payment shall be made at the time of final inspection at the factory. Should payment be delayed, Sutphen reserves the right to charge interest at the rate of one and one-half percent (1.5%) per month, beginning on the day after payment is due.

Delivery, payment, and transfer of the Manufacturer's Certificate of Origin (MCO) shall take place at Sutphen during final inspection, and upon payment in full in accordance with these terms. Sutphen reserves the right to withhold delivery of the MCO until payment in full is received. If Purchaser requires any third-party equipment mounting, the apparatus shall be moved to the third-party facility by the dealer or Purchaser for such mounting. Such third-party work shall not delay or offset payment to Sutphen. The apparatus shall be tested per NFPA #1900 at Sutphen's manufacturing facility. Purchaser agrees that the apparatus and equipment being purchased hereunder shall not be driven or used in any manner until it is paid for in full. In the event there are any shortages or omissions with the apparatus at time of completion, Purchaser may withhold a sum equivalent to the price of any such shortages as determined by Sutphen.

In the case of any default in payment hereunder or in the payment on any notes, negotiable paper, obligations or other instruments issued by Purchaser, Sutphen may take full possession of the apparatus and equipment or of the piece or pieces upon which default has been made, and any payments that have been made theretofore shall be applied as rent in full for the use of the apparatus and equipment up to the date of taking possession by Sutphen.

Sutphen warrants to Purchaser that all goods and services furnished hereunder will conform in all respects to the terms of this order, including any applicable change orders, drawings, specifications, or standards incorporated herein, and/or shall be free of defects in materials, workmanship, and free from such defects in design. In addition, Sutphen warrants that the goods and services are suitable for and will perform in accordance with the purposes for which they were intended, for a period of one year from the Warranty Registration Date, unless an extended warranty is purchased.

The purchase price provided for herein does not include any federal, state or local sales tax, duties, imposts, revenues, excise or other taxes which may hereafter be imposed by governmental authority or otherwise and which are made applicable to the apparatus or equipment covered by this Proposal. In the event that any such taxes are subsequently imposed and become applicable, the purchase price herein shall be increased by the amount of such taxes and such sum shall be immediately paid by Purchaser to Sutphen. To the extent applicable, the prices and deliveries set forth herein are subject to the Defense Production Act.

Sutphen shall provide insurance insuring the apparatus and equipment against loss by fire, theft, or collision and insuring against property damage and personal injury through the completion of the apparatus and transfer of the Manufacturer's Certificate of Origin.

After the execution of this Agreement, Purchaser shall have no right to terminate the Agreement. Sutphen may, in its absolute and sole discretion, accept Purchaser's request to terminate the Agreement. In the event Sutphen accepts Purchaser's request to terminate the Agreement, Sutphen may charge a cancellation fee. The following charge schedule based on costs incurred may be applied, at Sutphen's sole discretion: (a) 10% after order is accepted by Sutphen; (b) 30% of the Purchase Price after production has commenced. The cancellation fee may increase accordingly as costs are incurred as the order progresses through engineering and into manufacturing.

These Terms and Conditions ("T&C") contained in the Proposal provided herein take precedence over all previous negotiations, oral or written, and no representations or warranties are applicable except as specifically contained in these or in any subsequently signed agreement between the Parties. No waiver of any of the provisions of these T&C shall be deemed a waiver of any other provision, whether similar, nor shall any waiver constitute a continuing waiver. If a Purchase Order is issued, this Proposal, including the Terms and Conditions contained herein, shall supersede the terms in the Purchase Order where terms may be inconsistent.

This Proposal shall be governed and controlled as to interpretation, enforcement, validity, construction, effect and in all other respects by the laws, statutes, and decisions of the State of Ohio. Exclusive jurisdiction and venue for any litigation at all related to this in the Franklin County Court of Common Pleas, Columbus, Ohio, and the parties hereto consent and submit to the general jurisdiction of this court. All of these T&C shall be binding upon and inure to the benefit of and be enforceable by Sutphen, Purchaser, their successors and assigns.



**FAMILY OWNED
SINCE 1890**

**Prepayment Discount Options
For The
Charlevoix, MI**

2/3/2025

Current Bid Price **\$2,315,969.00**

Option 1 25%	For a prepayment in the amount of \$578,992.25 the discount would be \$65,619.12 for a total selling price of \$2,250,349.88
Option 2 50%	For a prepayment in the amount of \$1,157,984.50 the discount would be \$131,238.24 for a total selling price of \$2,184,730.76
Option 3 75%	For a prepayment in the amount of \$1,736,976.75 the discount would be \$196,857.37 for a total selling price of \$2,119,111.63
Option 4 100%	For a full prepayment, we offer a discount of \$262,476.49 for a final selling price of \$2,053,492.51

NOTE: For any option above, the prepayment would be due within 30
days of contract signing in order to receive the discounts listed.
Any remaining balance would be due at the time of delivery.

Sutphen Corporation
PO Box 158 • Amlin, OH 43002-0158
6450 Eiterman Road • Dublin, OH 43016-8711
Tel 614 889-1005 • Toll Free 800 848-5860 • Fax 614 889-0874
www.sutphen.com • Sutphen@sutphencorp.com



Sutphen
Component Report
Dealership: Heritage Fire
Equipment

**HS- Charlevoix Township Fire Department,
Michigan
SPH100 Aerial Platform**

Order#: DQ017169-1
Contact: Dan Thorp
Position: Fire Chief
Phone:
Mobile: 231-675-0416
Email: ctfd5600@gmail.com

Bill To	Ship To
Customer: Charlevoix Township Fire Department Contact: Dan Thorp, Fire Chief Address: 12491 Waller Rd. Charlevoix, Michigan 49720	Customer: Charlevoix Township Fire Department Contact: Dan Thorp, Fire Chief Address: 12491 Waller Rd. Charlevoix, Michigan 49720

Comments
Project Manager: Sales Person: Harry Sutphen Revision Level: Truck Type: Body Facility:

Quote Line Number 1

Line	Item #	Qty	Item Description/Comments
1	Dublin	1	Facility = Dublin
2	Sourcewell	1	Cooperative Purchasing =Sourcewell
3	10000225	1	STD WIRING SCHEMATIC (USB)
4	10310100	1	CHASSIS
CHASSIS			
5	10010006	1	CHASSIS, CUSTOM
6	51070230	1	WHEELBASE = 230
7	25020120	1	FRAME, 10" DOUBLE RAILS, DOMEX, TANDEM AXLE - AERIAL (110K PSI)
8	45040100	1	FRONT BUMPER CLIP
9	45010001	1	FRONT TOW EYES, BELOW BUMPER, PAINTED
10	46010000	1	REAR TOW EYES, PAINTED
11	40010250	1	STEERING - ROSS TAS-85

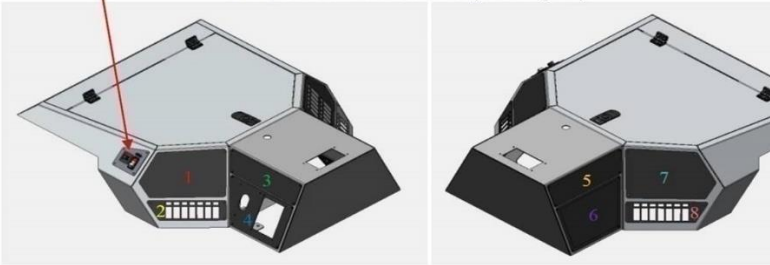
Line	Item #	Qty	Item Description/Comments
12	40010500	1	STEERING GEAR WARRANTY, ROSS, 1-YEAR
13	22010250	1	DRIVE LINE, SPICER, SPL250 (Tandem)
14	23015200	1	ENGINE, CUMMINS X15 NEXT GEN 500HP DOC-DPF-DEF-SCR OBD
15	23029200	1	ENGINE WARRANTY, 5 YEAR, 100,000 MILES FOR CUMMINS (X SERIES)
16	23029400	1	AFTERTREATMENT WARRANTY, 5 YEAR, 100,000 MILES FOR CUMMINS (X SERIES)
17	23030006	1	AIR INTAKE/EMBER SEPARATOR
18	23031176	1	FUEL FILTER/WATER SEPARATOR, PRIMARY, FLEETGUARD FUEL PRO FH230
19	23031180	1	12VDC HEATER FOR FLEETGUARD FUEL/WATER SEPARATOR
20	23031220	1	FUEL FILTER, SECONDARY, FLEETGUARD, FF5825NN
21	47012530	1	TRANSMISSION, ALLISON GEN 6, EVS4500 (X10HHD, X12, X15)
22	47020100	1	TRANSMISSION WARRANTY, ALLISON, 5 YEARS
23	23110000	1	JACOBS ENGINE BRAKE
24	47024050	1	TRANSMISSION COOLER
25	47030000	1	ALLISON TOUCH PAD SHIFTER
26	47030110	1	SHIFTER PAD GEARING, 6 GEARS OPEN
27	21021210	1	COOLING SYSTEM FOR X15
28	21030195	1	COOLANT FILTER
29	21030000	1	FAN CLUTCH
30	21030200	1	RADIATOR COOLANT RECOVERY, PRESSURIZED SYST
31	26020100	1	FUEL BEAM, 65 GALLON (AERIALS)
32	26030000	1	FUEL FILL
33	26030100	1	FUEL COOLER
34	24040000	1	DIESEL EXHAUST FLUID TANK
35	13010225	1	ALTERNATOR, LEECE NEVILLE 420 AMP BLP4003
36	13030100	1	LOW VOLTAGE ALARM, FLOYD BELL TXB-V86-515-QF
37	15010500	1	BATTERIES, INTERSTATE TYPE 31 MHD (4)

Line	Item #	Qty	Item Description/Comments
38	15031700	1	BATTERY JUMPER TERMINALS
39	15031515	1	BATTERY CHARGER, KUSSMAUL CHIEF 4012 W/REMOTE BAR GRAPH DISPLAY
40	15030435	1	120V SHORELINE INLET, KUSSMAUL SUPER 20 AUTO EJECT, 180° OPENING COVER 091-55-211-00-XXX
41	15040100	5	120V OUTLET WIRED TO SHORELINE INLET - EA (5)
42	14022140	1	FRONT AXLE, HENDRICKSON STEERTEK NXT 24,000 LB.
43	14030120	1	FRONT AXLE WARRANTY, HENDRICKSON, 5 YEARS
44	41022140	1	FRONT SUSPENSION, HENDRICKSON 24,000 LBS. (4) 56" LEAFS
45	41030030	1	FRONT SUSPENSION WARRANTY, HENDRICKSON, 2 YEARS
46	41040100	1	FRONT SUSPENSION LOCKING CYLINDERS, AERIALS
47	41040200	1	FRONT SUSPENSION LOCKOUT PLATE
48	41040510	1	STEER ASSIST
49	43010322	1	FRONT TIRES, GOODYEAR, 425/65R22.5 LRL, ARMOR MAX PRO GRADE MSA 22.5 X 12.25 WHEELS
50	14520310	1	REAR AXLE, MERITOR RT-50-180 52,000 LB TANDEM
51	14530010	1	REAR AXLE WARRANTY, MERITOR, 3 YEARS
52	14530158	1	TOP SPEED, 58 MPH
53	14530316	1	DRIVER CONTROLLED INTER-AXLE (FRONT-TO-REAR) DIFFERENTIAL LOCK (TANDEM)
54	42020025	1	REAR SUSPENSION, LINK, AIR LIFT, 52,000 LBS. AIR RIDE
55	42030020	1	REAR SUSPENSION WARRANTY, LINK, 1 YEAR
56	44020285	1	REAR TIRES, GOODYEAR 12R22.5 LRH G622 MUD & SNOW 52,000 GVWR
57	42920200	1	TIRE PRESSURE MONITOR, REAL WHEELS, LED
58	44220220	1	WHEELS, ALUM, ALCOA, DURABLACK (max 58K rear)
59	44270105	1	HUB COVERS, FRONT & REAR, POLISHED STS (Tandem Axle)
60	44270305	1	CHROME LUG NUT CAPS, FRONT & REAR (Tandem Axle)
61	44271100	1	MUD FLAPS, FRONT (PAIR)
62	44271200	1	MUD FLAPS, REAR (PAIR)
63	44088888	1	Black Hub Covers Front and Rear Black Lug Nut Covers Front and Rear

Line	Item #	Qty	Item Description/Comments
64	54010010	1	DATA, SAFETY & WARNING TAGS APPLICATION, ADHESIVE
65	16010275	1	BRAKES STEERTEK DISC PLUS EX225 FRONT, MERITOR DISC PLUS EX225 REAR (TANDEM AXLE)
66	18010046	1	AIR BRAKE SYSTEM 6 TANKS WABCO 1200 DRYER (TANDEM)
67	18015000	1	WABCO ABS BRAKING SYSTEM WARRANTY, 3 YEARS /300,000 MILES
68	18030015	1	AIR BRAKE RELEASE VALVE, HALDEX
69	18020000	1	CENTRAL LOCATION FOR AIR TANK DRAINS
70	18030140	1	AIR INLET CONNECTION W/CHECK VALVE
71	18035120	1	AIR COMPRESSOR, BLUE SEA AIR BRAKE COMPRESSOR, 125PSI
72	18220000	1	ELEC STABILITY CONTROL SYST (TANDEM)
73	18110150	1	WABCO 6 CHANNEL ANTI-LOCK BRAKES W/ASR (TANDEM)
74	18142000	1	ASR DISCONNECT SWITCH ON DASH
75	14530501	1	TIRE CHAINS, ON-SPOT, 6 STRANDS, (1) SET
76	53510000	1	COMPRESSION FITTINGS ON AIR SYSTEM (CHASSIS)
77	54010000	1	MISCELLANEOUS ITEMS ON CHASSIS
78	54010200	1	AERIAL CHASSIS PREP (TANDEM AXLE)
79	10310110	1	CAB
CAB			
80	11024210	1	CAB TSAL4SA 56" 10" RR 1/2
81	11030025	1	CAB CERTIFICATION - STRUCTURAL INTEGRITY
82	11030950	1	CAB LOCKDOWN LATCHES
83	11031025	1	CAB TILT SYSTEM, AIR CONTROL VALVE
84	11031034	1	CAB TILT CONTROL LOCATION, OUTRIGGER SERVICE PANEL, OFFICER'S SIDE
85	11031100	1	MANUAL BACK-UP TILT SYSTEM
86	11031350	1	CAB DOORS, FULL LENGTH (4)
87	11031385	1	CAB STEPS, LOWER GRIP STRUT, INTERMEDIATE DIAMONDPLATE
88	11031390	1	AUXILIARY CAB STEPS, ALUM, GRIP STRUT (SET OF 4)
89	11031399	1	CAB STEP LIGHTING, TECNIQ E45 LED STRIP LIGHTS

Line	Item #	Qty	Item Description/Comments
90	11031421	1	CAB DOOR WINDOWS, POWER (4)
91	11031401	1	CAB SIDE WINDOWS, FIXED, BOTH SIDES
92	11031440	1	TWO SLIDING WINDOWS IN BACK WALL OF CAB APPROX 16.25" X 14.25"
93	52010010	1	ELECTRIC INTERMITTENT WIPERS
94	52030100	1	DEACTIVATE WINDSHIELD WIPERS WITH PARKING BRAKE ENGAGED
95	52030200	1	WINDSHIELD WASHER RESERVOIR
96	38010020	1	MIRRORS LANG MEKRA 300 SERIES HEATED & REMOTE
97	38030210	1	OFFICER'S SIDE OUTRIGGER MIRROR, REAR EXTERIOR WALL OF CAB, 12" CONVEX, TRUCK-LITE
98	11024405	1	UPPER GRILLE, LEVEL STYLE FACADE (X SERIES)
99	11024510	1	FLAMING "S" LOGO, UPPER GRILLE, ILLUMINATED
100	11024615	1	LOWER GRILLE, POLISHED STAINLESS, LASER CUT LETTERING W/ BACKLIGHTING
101	32588888	1	BLACK OUT LOWER & UPPER GRILL
102	32588888	1	FEDERAL Q2B BLACKOUT
103	20012210	1	BUMPER, 18" FORMED STEEL CHANNEL, PAINTED
104	20029830	1	BUMPER SIDES, PAINTED STEEL, W/POCKET (12-24" EXTENSION)
105	20029910	1	BUMPER ANGLES, PAINTED STEEL, FLAT (12-30" EXTENSION)
106	20040105	1	STORAGE WELL, DEEP CENTER, FULL WIDTH (18" BUMPER)
107	20030100	1	STORAGE WELL COVER, TREADPLATE, 2" RAISE
108	20030510	1	CUT-OUT IN STORAGE WELL COVER
109	20042140	1	PROTECTIVE BUMPER COATING, RAPTOR, TOP EDGE OF FRONT BUMPER
110	20088888	1	BLACK OUT FRONT BUMPER TREADPLATE TEXTURED
111	20088888	1	BLACK OUT FRONT BUMPER LID
112	12010500	1	AIR HORNS, DUAL, GROVER #2040 RECTANGULAR, BEHIND PERFORATION
113	12030015	1	AIR HORNS CUTOUTS IN BUMPER, BEHIND PERFORATIONS (X SERIES)
114	12030205	1	AIR HORNS WIRED TO STEERING WHEEL BUTTON
115	12030350	1	LANYARD CONTROL FOR AIR HORNS

Line	Item #	Qty	Item Description/Comments
116	12088888	1	BLACK OUT AIRHORNS
117	12510110	1	ELEC SIREN, WHELEN 295HFS2, REMOTE FLUSH MOUNT
118	12620100	1	SIREN SPEAKER, 100W, CAST PRODUCTS, SA4201-6B-A
119	12670120	1	SIREN SPEAKER(S) INSTALLED IN BUMPER BEHIND PERFORATIONS
120	12710100	1	SIREN, FEDERAL Q2B, GRILLE MOUNT
121	12730305	1	FOOT SWITCH, DRIVER'S SIDE, FOR MECH SIREN
122	12730310	1	FOOT SWITCH, OFFICER'S SIDE, FOR MECH SIREN
123	12730363	1	SIREN BRAKE SWITCH FOR MECH SIREN, DRIVER'S & OFFICER'S SIDE
124	32520520	1	HEADLIGHTS, LED, FIRETECH FT-4X6, DUAL STS HOUSINGS (MIXED UPPER WARNING & TURN SIGNAL)
125	48010300	1	FRONT TURN SIGNALS, WHELEN 400 SERIES LED (4) (MIXED HOUSING)
126	32530754	1	ICC, LED BROW LIGHT INTEGRATED MARKERS
127	32588888	1	SPECIAL ITEM, BLACK OUT UPPER LOWER CASTINGS
128	27022150	1	HANDRAILS, CAB EXTERIOR, HANSEN BACKLIT (2) SIDE & (2) BACK WALL
129	27025000	1	HANDRAILS, CAB INTERIOR, BLACK RUBBER COATED (2) FRONT ENTRY
130	27030120	1	HANDRAILS, REAR CAB INTERIOR DOOR, BLACK RUBBERIZED (2) AND KNURLED STS AT WINDOW (2)
131	27040100	1	INTERIOR DOOR, NYLON STRAP (FRONT & REAR CAB DOORS)
132	11035416	1	RAPTOR REAR EXTERIOR WALL OF CAB, SINGLE TONE (AERIAL OR TOP MOUNT)
133	11035422	1	DIAMONDPLATE CAB ROOF 56" x FULL WIDTH
134	11033202	1	3/16" SMOOTH ALUM BACK WALL & SIDE WALLS, INSIDE CAB
135	31010285	1	INTERIOR, MULTISPEC BLACK SPECKLE PAINT W/GRAY-BLACK DURAWEAR
136	11032929	1	DOOR PANEL, FULL STS
137	31010291	1	CAB INTERIOR FLOOR COVERING, BLACK RUBBERIZED
138	22510100	1	ENGINE ENCLOSURE, FULL LENGTH
139	22510530	1	ENGINE ENCLOSURE COVERING, SCORPION BLACK URETHANE BLEND
140	11031550	1	CENTER CONSOLE EXTENSION
141	11031563	1	TOP OF EXTENSION, CUP HOLDERS (2) AND STORAGE SLOT

Line	Item #	Qty	Item Description/Comments
142	11031570	1	SIDES OF EXTENSION, FLAT
143	22610050	1	ENGINE HOOD LIGHT, LED (1)
144	11031510	1	FLAT WORK SURFACE IN LIEU OF GLOVE BOX
145	11031710	1	UPPER CREW DOOR AREA, SMOOTH PANEL
146	29810100	1	CHASSIS ELECTRICAL DESCRIPTION
147	30010135	1	INSTRUMENTATION, AMETEK W/ CENTER & OVERHEAD CONSOLES (AERIALS)
			Upper Command Console: 
148	30010510	1	LOWER COMMAND CONSOLE, X15
			Lower Command Console (15L engine): 
149	30010720	1	CAB PUMP SHIFTER, AIR, KPS SHIFTER (FOR HALE K-SERIES PUMP TRANSMISSION)
150	30011000	1	PUMP INTERLOCK, NOT CONNECTED WITH ODOMETER
151	30031615	1	DO NOT MOVE LIGHT, WHELEN ION-T LED
152	29930210	1	DELETE MAPBOOK SLOT ON FRONT BREAKER PANEL
153	29910100	1	PROGRAMMABLE LOAD MANAGER, CLASS-1 SUPERNODE II
154	30031100	1	HIGH IDLE SWITCH
155	11040000	1	CAB ACCESSORY FUSE PANEL
156	84541540	1	POWER & GROUND STUDS, UPPER COMMAND CONSOLE
157	30110000	1	VEHICLE DATA RECORDER, AKRON/WELDON

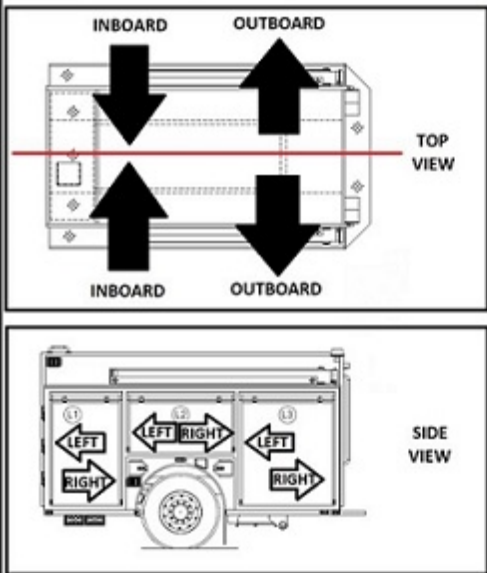
Line	Item #	Qty	Item Description/Comments
158	30031810	1	12V POWER POINT (1)
159	30031830	3	12V DUAL POWER POINT, USB/USBC, POWERWERX (3)
160	33510030	1	INTERIOR CAB LIGHTS, WHELEN 6" ROUND RED/CLEAR LED (2)
161	34010030	1	INTERIOR CREW LIGHTS, WHELEN 6" ROUND RED/CLEAR LED (2)
162	33530654	1	INTERIOR CAB DOOR WARNING LIGHTS, WHELEN ION T-SERIES LED, TLI* (QTY 4)
163	28010750	1	DEFROSTER, HEATER & A/C, SEVERE CLIMATE (TM-31)
164	28020500	1	AIR CONDITIONING WARRANTY, 2 YEARS
165	28090003	1	HEAT TO FEET
166	28030500	1	DEFROSTER DUCTWORK, ENTIRE WINDSHIELD
167	11031687	1	TOP HEAT/AC STORAGE, TOOL MOUNTING PLATE, 25" x 19.5"
168	28031000	1	FAN, 12 VOLT, DRIVER'S SIDE, MOUNTED INBOARD, NEXT TO DEFROSTER
169	28031100	1	FAN, 12 VOLT, OFFICER'S SIDE, MOUNTED INBOARD, NEXT TO DEFROSTER
170	38510104	1	DRIVER'S SEAT, BOSTROM SIERRA HIGH BACK AIR RIDE ABTS (DURAWEAR PLUS, LOW SEAM)
171	38340110	1	PRIMARY SEAT POSITION
172	38350100	1	SEAT BELT CONFIGURATION, PULL FROM LEFT SHOULDER TO BUCKLE AT RIGHT HIP
173	38320000	1	HELMET STORED IN COMPARTMENT
174	39010118	1	OFFICER'S SEAT, BOSTROM TANKER 450, ABTS SCBA (DURAWEAR PLUS, LOW SEAM)
175	38340110	1	PRIMARY SEAT POSITION
176	38350200	1	SEAT BELT CONFIGURATION, PULL FROM RIGHT SHOULDER TO BUCKLE AT LEFT HIP
177	39030010	1	OFFICER'S SEAT COMPT, OPEN FRONT
178	38320000	1	HELMET STORED IN COMPARTMENT
179	39521129	1	CREW SEAT 1, BOSTROM TANKER 450, ABTS SCBA (DURAWEAR PLUS, LOW SEAM)
180	38340110	1	PRIMARY SEAT POSITION
181	38350200	1	SEAT BELT CONFIGURATION, PULL FROM RIGHT SHOULDER TO BUCKLE AT LEFT HIP
182	38320000	1	HELMET STORED IN COMPARTMENT
183	39521130	1	CREW SEAT 2, BOSTROM TANKER 450, ABTS SCBA (DURAWEAR PLUS, LOW SEAM)

Line	Item #	Qty	Item Description/Comments
184	38340110	1	PRIMARY SEAT POSITION
185	38350100	1	SEAT BELT CONFIGURATION, PULL FROM LEFT SHOULDER TO BUCKLE AT RIGHT HIP
186	38320000	1	HELMET STORED IN COMPARTMENT
187	39588888	1	SPECIAL ITEM, REMOVE SEAT RISER
188	39550200	1	SEAT COLOR, BLACK
189	39610115	3	SCBA BRACKETS, IMMI SMART DOCK (3)
190	38410000	1	SEAT BELT WARNING SYSTEM, AKRON / WELDON
191	39710005	1	DOUBLE CREW SEAT COMPT, OPEN SIDES
192	11031745	1	OVERHEAD STORAGE, FRONT OF 10" RR W/DOORS
193	84541700	2	INSTALLATION OF CUSTOMERS 2-WAY RADIO ANTENNA (2)
194	30080150	1	HD STEREO, JENSEN, AM/FM/WB/BT
195	84561010	1	CAMERA SYSTEM, FRC, INVIEW TRUEVIEW, SINGLE CAMERA (WIRED)
196	10310200	1	PUMP & PLUMBING
PUMP & PLUMBING			
197	60012555	1	QMAX-2000 GPM 6" SUCTION SINGLE STAGE PUMP
198	60025210	1	GEARBOX, HALE, K-SERIES, FRONT MOUNTED
199	60026020	1	MECHANICAL PUMP SEAL, HALE
200	60031005	1	ALLOY ANODES, HALE (2)
201	60035123	1	PUMP TEST, THIRD PARTY TESTING
202	61510000	1	AUXILIARY COOLER (HEAT EXCHANGER)
203	62010002	1	STAINLESS STEEL PIPING
204	66020100	1	3" TANK TO PUMP W/CHECK VALVE
205	61720100	1	VALVE, AKRON HEAVY DUTY
206	61770120	1	ACTUATOR, VALVE, PUSH/PULL HANDLE, INNOVATIVE CONTROLS
207	73010100	1	TANK FILL 1.5"
208	61720100	1	VALVE, AKRON HEAVY DUTY
209	61770120	1	ACTUATOR, VALVE, PUSH/PULL HANDLE, INNOVATIVE CONTROLS

Line	Item #	Qty	Item Description/Comments
210	61020007	1	PRESSURE GOVERNOR, FIRE RESEARCH, PUMP BOSS MAX
211	61210000	1	INTAKE PRESSURE CONTROL, ELKHART 40-20
212	63021100	1	6" MAIN SUCTION, LEFT SIDE
213	65030000	1	2.5" LEFT SIDE INLET
214	61720100	1	VALVE, AKRON HEAVY DUTY
215	61770100	1	ACTUATOR, VALVE, SWING HANDLE
216	60036010	1	THREADS, NST
217	63025100	1	6" MAIN SUCTION, RIGHT SIDE
218	64030000	1	2.5" RIGHT SIDE INLET
219	61720100	1	VALVE, AKRON HEAVY DUTY
220	61770100	1	ACTUATOR, VALVE, SWING HANDLE
221	60036010	1	THREADS, NST
222	70525125	1	2.5" DISCHARGE, LEFT - POSITION 1
223	61720100	1	VALVE, AKRON HEAVY DUTY
224	61770110	1	ACTUATOR, VALVE, PUSH/PULL W/RACK& SECTOR
225	77021015	1	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5"
226	61810150	1	DISCHARGE TERMINATION, 30 DEGREE ELBOW
227	60036010	1	THREADS, NST
228	70525125	1	2.5" DISCHARGE, LEFT - POSITION 2
229	61720100	1	VALVE, AKRON HEAVY DUTY
230	61770110	1	ACTUATOR, VALVE, PUSH/PULL W/RACK& SECTOR
231	77021015	1	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5"
232	61810150	1	DISCHARGE TERMINATION, 30 DEGREE ELBOW
233	60036010	1	THREADS, NST
234	71025130	1	3" DISCHARGE, RIGHT - POSITION 3
235	61720100	1	VALVE, AKRON HEAVY DUTY

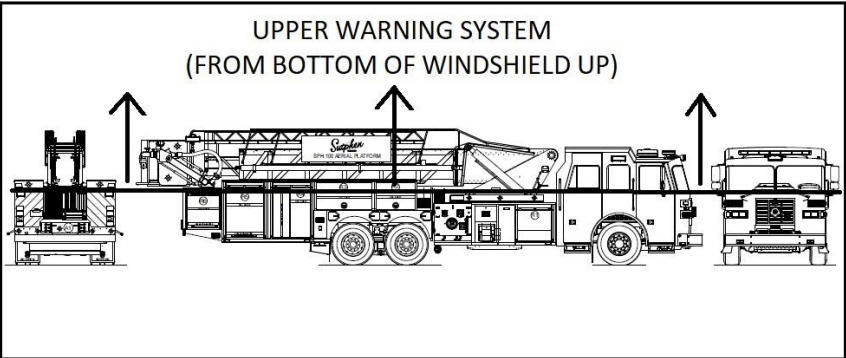
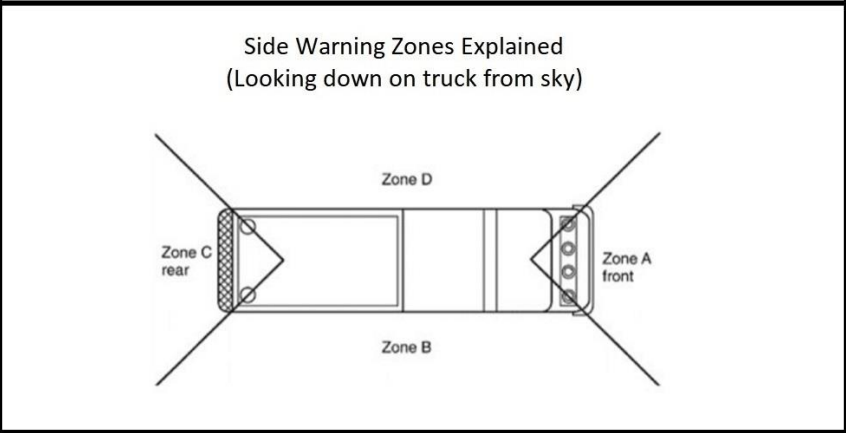
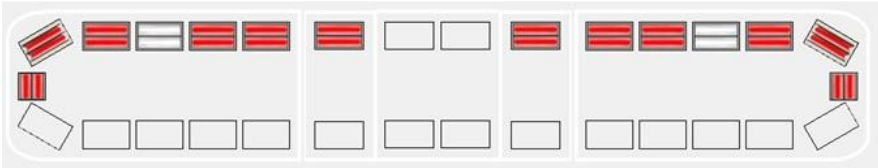
Line	Item #	Qty	Item Description/Comments
236	61770425	1	ACTUATOR, VALVE, ELECTRIC, AKRON 9333
237	77021015	1	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5"
238	61810160	1	DISCHARGE TERMINATION, STRAIGHT
239	60036010	1	THREADS, NST
240	61840267	1	ADAPTER, 3" NST FE X 5" STORZ, 30-DEGREE W/CAP & CHAIN, TFT
241	71025125	1	2.5" DISCHARGE, RIGHT - POSITION 4
242	61720100	1	VALVE, AKRON HEAVY DUTY
243	61770120	1	ACTUATOR, VALVE, PUSH/PULL HANDLE, INNOVATIVE CONTROLS
244	77021015	1	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5"
245	61810150	1	DISCHARGE TERMINATION, 30 DEGREE ELBOW
246	60036010	1	THREADS, NST
247	72230030	1	DISCHARGE 1.5" FRONT BUMPER, 2" PLUMBING, OFFICER'S SIDE (AERIALS)
248	61720100	1	VALVE, AKRON HEAVY DUTY
249	61770425	1	ACTUATOR, VALVE, ELECTRIC, AKRON 9333
250	77021015	1	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5"
251	60036010	1	THREADS, NST
252	72811000	1	ONE 2.5" CROSSLAY, 2.5" SWVL & TWO 2" CROSSLAYS W/1.5" SWIVEL (SPH)
253	61720100	3	VALVE, AKRON HEAVY DUTY (3)
254	61770425	3	ACTUATOR, VALVE, ELECTRIC, AKRON 9333 (3)
255	77021015	3	GAUGE, DISCH, INNOVATIVE CONTROLS TC SERIES, 2.5" (3)
256	60036010	3	THREADS, NST (3)
257	72910520	1	COVER, VINYL FOR CROSSLAYS (SPH)
258	72932210	1	COVER FASTENERS, METAL SNAPS
259	61742000	1	MASTER PUMP DRAIN, MULTIPOINT
260	61730005	8	DRAIN VALVES, INNOVATIVE CONTROLS, LIFT-UP (8)
261	78521445	1	WATERWAY CONTROL, 4" VALVE, AKRON 9335 ELECTRIC ACTUATOR

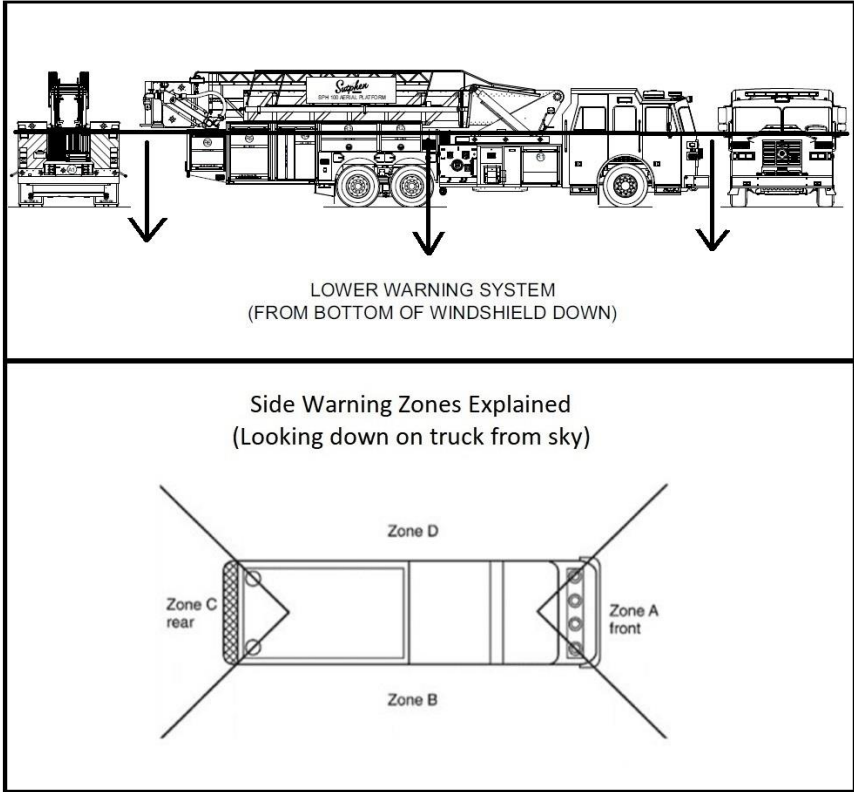
Line	Item #	Qty	Item Description/Comments
262	61910100	1	WATERWAY DRAIN VALVE, AKRON 1.5" PUSH/PULL CONTROL
263	10310210	1	FOAM SYSTEM
FOAM SYSTEM			
264	73570305	1	FOAM SYSTEM, FOAMPRO 2001, 2.6 GPM
265	73572110	1	FOAM SYSTEM WARRANTY, FOAMPRO, 2 YEARS
266	73531350	1	FOAM TANK 20 GALLON BUILT INTO BOOSTER TANK
267	73576720	1	QUARTER TURN VALVE, MANUAL FOAM FLUSH
268	73580024	1	FOAM PLUMBED TO FOUR DISCHARGES (AERIALS)
269	10310220	1	PUMP PANEL
PUMP PANEL			
270	74920210	1	SPH1 - SIDE MOUNT PUMP PANEL
271	74930510	1	PANEL FINISH, BRUSHED STS
272	74931000	1	ESCUTCHEON PLATES
273	74931050	1	COLOR CODING
274	74931210	1	PUMP MODULE FRAMEWORK, NON-PAINTED
275	74931530	1	PLUMBING FINISH, PAINTED BY SUTPHEN
276	75088888	1	PLUMBING AND VALVES NATURAL FINISH
277	75040225	1	FLOATING TROUGH IN RUNNING BOARD, OFFICER'S SIDE
278	75510230	1	PUMP OPERATOR LIGHTS, TECNIQ E44 LED STRIP
279	75530112	1	PUMP PANEL LIGHTS OFFICER'S SIDE, TECNIQ E44 LED STRIP
280	76010105	1	PUMP PANEL GAUGES & CONTROLS
281	60028050	1	PUMP PRIMER, TRIDENT, AIR
282	60028310	1	(1) PRIMER BUTTON - MAIN SUCTION
283	76025100	1	COMPRESSION FITTINGS ON AIR SYSTEM (CTZ PUMP MODULE)
284	76030775	1	PUMP OVERHEAT ALARM, INNOVATIVE CONTROLS
285	76030410	1	INNOVATIVE CONTROLS GAUGE HEATER BOX WITH FOUR TAPES
286	76030411	7	ADDITIONAL IC HEAT TAPES (7)

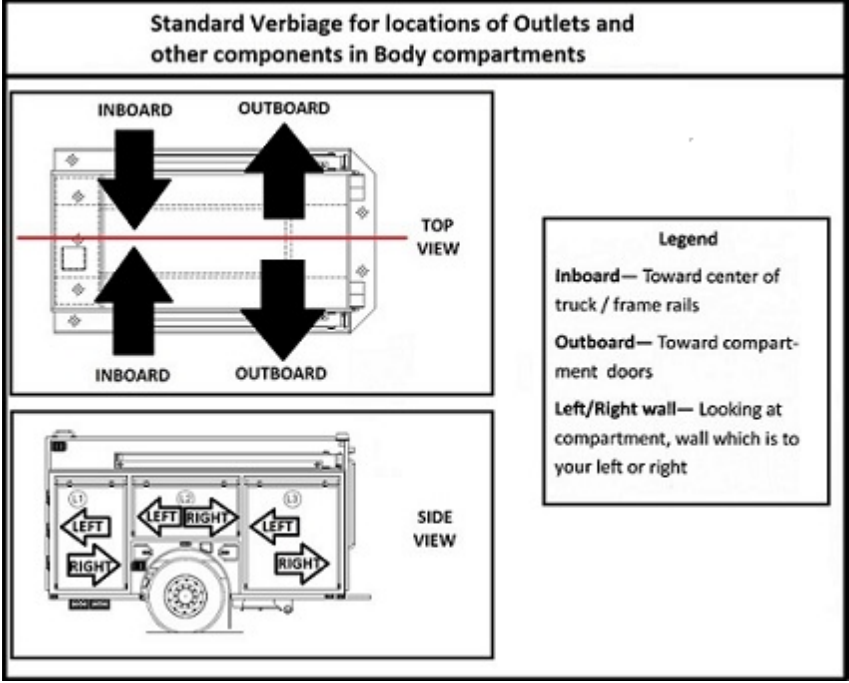
Line	Item #	Qty	Item Description/Comments
287	76031850	1	PUMP COMPARTMENT HEATER WITH 12V FAN (AERIALS)
288	76031900	1	AIR HORN PUSH BUTTON SWITCH ON PUMP PANEL
289	76510065	1	GAUGES, MASTER, INNOVATIVE CONTROLS TC SERIES, 4"
290	77510050	1	GAUGE, WATER LEVEL, INNOVATIVE CONTROLS SL-14
291	77532112	1	GAUGE, WATER LEVEL, WHELEN PSTANK2 LED (2)
292	77540100	1	GAUGE, FOAM LEVEL, INNOVATIVE CONTROLS SL-14
293	10310230	1	WATER TANK
WATER TANK			
294	83525200	1	WATER TANK BRAND, UPF
295	83520205	1	WATER TANK, 300 GAL, POLY (AERIALS)
296	83530130	1	WATER TANK WARRANTY, UPF, LIFETIME
297	10310300	1	BODY
BODY			
298	80029930	1	STAINLESS STEEL SUBFRAME/UNDERCARRIAGE, SPH100
299	80117030	1	BODY SPH-3, LEFT 56" H / RIGHT 56"H
300	10310302	1	BODY COMPARTMENTS
BODY COMPARTMENTS			
			Standard Verbiage for locations of Outlets and other components in Body compartments  Legend Inboard— Toward center of truck / frame rails Outboard— Toward compartment doors Left/Right wall— Looking at compartment, wall which is to your left or right

Line	Item #	Qty	Item Description/Comments
301	80280410	1	3/16" ALUMINUM MOUNTING PLATE (PER WALL) [L3] (1)
302	81130200	2	ADJUSTABLE SHELF [L4] (2)
303	81150305	1	600# SLIDE-MASTER TRAY, 100% SLIDEOUT [L4] (1)
304	81150000	1	250# ADJUSTABLE VERTICAL SLIDE-OUT PANEL [L5] (1)
305	81130200	1	ADJUSTABLE SHELF [L6] (1)
306	81150305	1	600# SLIDE-MASTER TRAY, 100% SLIDEOUT [L6] (1)
307	81130200	1	ADJUSTABLE SHELF [R1] (1)
308	81130200	1	ADJUSTABLE SHELF [R2] (1)
309	81150050	1	250# ADJUSTABLE SWING-OUT TOOL BOARD [R3] (1)
310	80280410	1	3/16" ALUMINUM MOUNTING PLATE (PER WALL) [R3] (1)
311	81130200	2	ADJUSTABLE SHELF [R4] (2)
312	81140100	1	FIXED VERTICAL DIVIDER [R4] (1)
313	81150305	1	600# SLIDE-MASTER TRAY, 100% SLIDEOUT [R4] (1)
314	81130200	1	ADJUSTABLE SHELF [R5] (1)
315	81150305	1	600# SLIDE-MASTER TRAY, 100% SLIDEOUT [R5] (1)
316	81130200	1	ADJUSTABLE SHELF [R6] (1)
317	81150312	1	500# SLIDE-OUT TRAY W/POLY SLIDES, A1 COMPT (SPH100/SL100) [A1] (1)
318	81165705	1	UNISTRUT TRACK IN COMPTS
319	80220240	1	COMPT DOORS, AMDOR ROLL-UP, PAINTED
320	80230920	1	ROLL UP DOORS WARRANTY, AMDOR, 3 YEARS
321	80230003	7	ROLL-UP DOOR DRIP PAN/GUARD (WITH DRAIN) (7)
322	84531110	1	COMPT LIGHTING, AMDOR LED LIGHT STRIPS, 2 PER COMPT
323	10310305	1	BODY EXTERIOR
BODY EXTERIOR			
324	81320205	1	SPH 100 HOSEBED, ALUM FLOORING
325	81410000	1	COVER, VINYL, MAIN HOSE BED

Line	Item #	Qty	Item Description/Comments
326	81431320	1	REAR HOSEBED COVER, SMOOTH ALUM DOOR
327	81431150	1	STAY-OPEN MECHANISM FOR REAR ENCLOSURE DOORS (PAIR)
328	81440210	1	COVER FASTENERS, METAL SNAPS
329	81332115	1	HOSEBED LIGHTING, SIDES, TECNIQ E44 LED LIGHT STRIPS
330	81910500	1	HANDRAILS, KNURLED STS, SPH100
331	82014500	1	STEPS, IC FOLD DOWN W/LIGHT (SPH)
332	82510000	1	RUB RAILS, ANODIZED ALUM
333	83010125	1	ALUMINUM TREADPLATE (SPH)
334	80290101	1	FIBERGLASS WHEEL WELL LINERS (TANDEM AERIALS)
335	80231260	1	7 SCBA CYLINDER COMPTS (TANDEM BODY)
336	80290310	7	DOOR FINISH, SINGLE/DOUBLE SCBA COMPT (7)
337	89988888	1	SCBA DOORS PAINTED PRIMARY JOB COLOR
338	83030605	1	REAR FENDERS, STAINLESS SMOOTH PAINTED (TANDEM AERIALS)
339	89028888	1	DUO-SAFETY 111': 16', 16', 24', 35' AND Two (2) 10'
340	89030605	1	LITTLE GIANT LADDER, MODEL 17 9'-15' (1)
341	89530900	1	MOUNTING OF EXTRA LADDER (EACH) (1)
342	89530910	1	MOUNTING OF ROOF LADDER ON BASE SECTION OF AERIAL (1)
343	89512200	1	LADDERS ENCLOSED IN HOSEBED ON BEAM (SPH)
344	89520220	1	LADDER ENCLOSURE, SMOOTH ALUM DOOR
345	89088888	1	Additional Double roof hooks for 16' and 18' in ladder chute
346	10310310	1	ELECTRICAL
ELECTRICAL			
347	84550110	1	LICENSE PLATE BRACKET W/ LIGHT, LED
348	84511100	1	BODY ELECTRICAL DESCRIPTION
349	84520000	1	BACK UP ALARM, ECCO SA917
350	85010420	1	TAILLIGHTS, WHELEN M6 SERIES, LED STOP/TAI/TURN/REVERSE, QUAD HOUSING (PAIR)
351	85110100	1	ICC LIGHTS, LED

Line	Item #	Qty	Item Description/Comments
352	85130100	1	MARKER LIGHTS, BRITAX, FLEXIBLE, LED, PAIR, ON SIDES OF BODY, REAR CORNERS
353	85510205	1	STEP LIGHTS, LED, REAR BODY & WHELEN 2G AT PUMP PANEL
354	85710037	1	UNDERCARRIAGE GROUND LIGHTS, TECNIQ T44 LED (TANDEM)
355	85730100	1	UNDERCARRIAGE GROUND LIGHTS, INDEPENDENT SWITCH
356	86600105	1	OPTICAL WARNING SYSTEM, UPPER (SPH100)
			UPPER WARNING SYSTEM (FROM BOTTOM OF WINDSHIELD UP)  Side Warning Zones Explained (Looking down on truck from sky) 
357	86610130	1	UPPER WARNING LIGHTS, ZONE A (FRONT), WHELEN FREEDOM IV 72" LED LIGHT BAR, F4N7QLED, 14 MODULES
			
358	86920100	1	UPPER ZONE A LIGHTBAR, STANDARD CONFIGURATION
359	86699999	1	UPPER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), COVERED BY ZONES A & C
360	86710105	1	UPPER WARNING LIGHTS, ZONE C (REAR), WHELEN LED BEACONS, L31 (PAIR)
361	86810200	1	UPPER WARNING LIGHTS, ZONE C (REAR PLATFORM), WHELEN M6 LED, M6* (QTY 1)
362	86899999	1	UPPER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), COVERED BY ZONES A & C

Line	Item #	Qty	Item Description/Comments
363	87100105	1	OPTICAL WARNING SYSTEM, LOWER (SPH100)
			 LOWER WARNING SYSTEM (FROM BOTTOM OF WINDSHIELD DOWN) Side Warning Zones Explained (Looking down on truck from sky) Zone D Zone C rear Zone B Zone A front
364	87110210	1	LOWER WARNING LIGHTS, ZONE A (FRONT), WHELEN M6 LED, M6* (QTY 4)
365	87811130	1	LOWER, ZONE A - MOUNTING LOCATION (DUAL HOUSINGS)
366	87210120	1	LOWER WARNING LIGHTS, ZONE B (OFFICER'S SIDE), WHELEN 600 SUPER LED, 60*02F*R (QTY 4)
367	87812140	1	LOWER, ZONE B - MOUNTING LOCATION (SL100, SLR108, SPH100)
368	87310200	1	LOWER WARNING LIGHTS, ZONE C (REAR), WHELEN M6 LED, M6* (QTY 2)
369	87410220	1	LOWER WARNING LIGHTS, ZONE D (DRIVER'S SIDE), WHELEN M6 LED, M6* (QTY 4)
370	87814140	1	LOWER, ZONE D - MOUNTING LOCATION (SL100, SLR108, SPH100)
371	87537734	2	ADDITIONAL WARNING LIGHTS, WHELEN M6 LED, M6* (PAIR) (2)
372	88390912	2	SCENE LIGHT, FRC SPECTRA 20K, 12V LED, SURFACE MOUNT (2)
373	88390950	2	SCENE LIGHT, FRC SPECTRA 900, 12V LED, SURFACE MOUNT (2)
374	88393000	1	SCENE LIGHTS, FIRETECH 30K LUMENS, 12V LED, 72" 3-PIECE BROW, W/INTEGRATED ICCS FT-B-72-ML-3PKIT-* (1)
375	88393116	2	SCENE LIGHT, FIRETECH MB DOUBLE STACK 30", 12V LED, FIXED, 54 LED, FT-MB-2.27-FT-* (2)
376	88399940	5	ADDITIONAL SWITCH, 3-WAY FOR 12V LIGHTS (EA) (5)

Line	Item #	Qty	Item Description/Comments
377	10310320	1	GENERATOR & ACCESSORIES
GENERATOR & ACCESSORIES			
			Standard Verbiage for locations of Outlets and other components in Body compartments  Legend Inboard— Toward center of truck / frame rails Outboard— Toward compartment doors Left/Right wall— Looking at compartment, wall which is to your left or right
378	88230201	1	GENERATOR, SMART POWER, 6KW ER HYD, AERIALS
379	88238510	1	GENERATOR WARRANTY, SMART POWER, 5 YEARS
380	88250415	1	CIRCUIT BREAKER PANEL, EATON NEMA 3R
381	88251120	1	BREAKER PANEL, STD LOCATION (L2)
382	88250100	1	120 VOLT OUTLET W/WEATHERPROOF COVER - EACH (1)
383	88232025	1	AUTOMATIC TRANSFER SWITCH, PROGRESSIVE DYNAMICS, PD5100
384	88431205	1	HANNAY ECR-1616-17-18 REEL W/150' 10/3 (1)
385	88433040	1	MOUNTING OF ELEC CORD REEL IN OFFICER'S SIDE AREA, REAR OF OUTRIGGER COMPT
386	88432000	1	AKRON FOUR-WAY RECEPTACLE BOX, WIRED TO REEL CABLE (1)
387	88390811	1	LIGHT, FR SPECTRA, LED, SURFACE MNT, 20K LUMENS, 240V, FACE OF PLATFORM (1)
388	88390812	2	LIGHT, FR SPECTRA, LED, SURFACE MNT, 20K LUMENS, 240V, UNDER PLATFORM (2)
389	88390843	2	LIGHT, FR SPECTRA, LED, TELE, 20K LUMENS, 240V, SPH PLATFORM (2)
390	88399959	1	SCUFF PLATES FOR TELE LIGHTS - NOT PROVIDED
391	88399920	4	ADDITIONAL SWITCH, 3-WAY FOR 120/240V LIGHTS (EA) (4)

Line	Item #	Qty	Item Description/Comments
392	10310400	1	AERIAL
AERIAL			
393	10040610	1	MODEL SPH100, AERIAL COMPONENTS
394	94020236	1	AERIAL TOWER ASSEMBLY, SPH100
395	94020315	1	TURNTABLE ACCESS, LOWER LEFT, FIXED STEPS
396	94020320	1	FIXED STEP UNDER TURNTABLE ACCESS STEP
397	94020345	1	TURNTABLE ACCESS, UPPER LEFT, FOLDING STEPS
398	94020360	1	TURNTABLE ACCESS, UPPER RIGHT, FOLDING STEPS
399	94020250	1	INTERLOCK SYSTEM
400	94020260	1	ROTATION LIMITING SYSTEM & SMART BOOM WARNING SYSTEM
401	94020265	1	ROTATION LIMITING ALARM , FLOYD BELL US-09-515-S
402	94020272	1	HYDRAULIC SYSTEM - SPH100
403	94020900	1	12 VOLT AUXILIARY HYDRAULIC POWER
404	94020286	1	PEDESTAL CONTROLS, PROPORTIONAL TYPE, SPH100
405	94021212	1	BOOM ASSEMBLY - SPH100
406	94020465	1	AERIAL SPOT LIGHTS – (2) FIRETECH FT-WL-X-5-S-B, LED (SP95,100,110,SPH)
407	94021327	1	LADDER SPH 100 HIGH RAIL, FULL PROFILE AT TURNTABLE - CABLE TRACK
408	94020490	1	LADDER LIGHTING SYSTEM, FIRETECH FT-WL-2000-S-B, LED (SP95, 100, 110, SPH)
409	94021337	1	HYDRAULIC CYLINDERS - SPH 100
410	94021344	1	AERIAL TOWER WATERWAY - SPH100, SP110
411	94021450	1	WATERWAY WARRANTY, AMITY, 10 YEARS
412	94021027	1	OUTRIGGER GROUND JACKS, MANUAL CONTROL, SPH100
413	94021052	1	OUTRIGGERS, PINLESS
414	94021090	1	AERIAL JACKS ALARM, ECCO DT500
415	94021064	1	OUTRIGGER SPOT LIGHTS, FIRETECH LASER CANON
416	94021110	1	OUTRIGGER DISPLAY PANEL COVER, CLEAR PLEXIGLASS
417	94021160	1	OFFICER'S SIDE AREA, REAR OF OUTRIGGER, CORD REEL COMPARTMENT W/SINGLE HINGED DOOR

Line	Item #	Qty	Item Description/Comments
418	93910288	1	JACK PADS NOT PROVIDED - SPH100
419	94021340	1	OPERATIONAL TEST - AERIAL PLATFORMS
420	94040052	1	LADDER TEST, THIRD PARTY TESTING
421	94088888	1	SPECIAL ITEM, SECONDARY CAMERA SYSTEM FOR JACK PLACEMENT
422	94210016	1	4-DOOR PLATFORM, SPH
423	94210145	1	PLATFORM DOOR SKIN, FORWARD FACING, DIAMONDPLATE (SPH)
424	94210155	1	PLATFORM DOOR SKIN, REARWARD FACING, DIAMONDPLATE (SPH)
425	94210014	1	PLATFORM ACCESS LADDER
426	94210318	1	PLATFORM BOOM CONTROLS, PROPORTIONAL TYPE, SPH/SPI112
427	94210342	1	PLATFORM CONTROL COVER, DIAMONDPLATE
428	94210280	1	DELETE PLATFORM SPOT LIGHT
429	94210295	1	MARKER LIGHTS, BRITAX FLEXIBLE, LED, PAIR, ON SIDES OF YOKE
430	94210350	1	120 VOLT OUTLET IN PLATFORM
431	94210802	1	75 GPM WATER CURTAIN FOR SPH 100 or SPI112
432	94210705	1	YOKE OUTLETS - SPH100
433	94288888	1	BLACK OUT BUCKET SKINS
434	94210512	1	MONITOR, DS AKRON 3482 STREAM MASTER2, ELECTRIC, 1250 GPM W/AKRON 5177 ELECTRIC NOZZLE
435	94210511	1	MONITOR, OS, AKRON 3481 STREAM MASTER2 , MANUAL 1250 GPM
436	94210675	1	NOZZLE, OS, AKRON 2499 & 3488 PIPE
437	94210997	1	INTERCOM SYSTEM, FRC ACT 2-STATION
438	94211100	1	PLATFORM AIR SYSTEM W/ 4500 PSI DOT AIR TANK
439	94212500	1	BREATHING AIR ALARM, FLOYD BELL TUHC-V88R-930-Q
440	94270510	1	BREATHING AIR TANK LOCATION, TURNTABLE, OFFICER'S SIDE
441	94210017	1	PARAPET LADDER, SPH100
442	94280150	1	STOKES ARMS, SPH100 PLATFORM
443	94280101	1	STOKES STORAGE BOX, PAINTED, MOUNTED ON BOOM (1)

Line	Item #	Qty	Item Description/Comments
444	94295001	1	SINGLE LIFTING EYE, 800 LB.
445	10310410	1	PAINT & FINISH
PAINT & FINISH			
446	89910000	1	CORROSION REDUCTION PROGRAM (SPECS)
447	90010030	1	STAINLESS PAINT SCHEME - CORP AERIALS
448	90030007	1	TWO TONE CAB
449	90030002	1	METALLIC PAINT
450	90029950	1	PAINT BREAK #5 - WINDSHIELD SWOOP W/ GRILLE SWOOP
			
451	90030159	1	PAINT FRAME RAILS, FUEL BEAM, BODY REAR DROP & LOWER AERIAL COMPONENTS - BLACK (TANDEM)
452	90030032	1	PAINT, TURNTABLE, SIDE PLATES & LIFT CYLINDER OTHER THAN SILVER
453	90030190	1	TEXTURED FRAME RAIL COATING, PLUMBING AREA
454	90030034	1	PAINT, LADDER SHEAVE BEAMS, EXT CYLINDER & YOKE OTHER THAN SILVER
455	90030183	1	PAINT BREATHING AIR CYLINDER UPPER CAB COLOR (1)
456	90510000	1	3" LETTERING, 22K UP TO 40
457	90530005	20	ADDITIONAL 3" 22KT LETTERS (EACH) (20)
458	90530100	60	HIGHLIGHT COLOR FOR LETTER (EACH) (60)
459	90588888	1	BUCKET UNIT# MOUNT PLATES (3)
460	90600210	1	REFLECTIVE MATERIAL, INTERIOR CAB DOORS, CHEVRONS, SCOTCHLITE
461	90630610	1	1/2" 22KT GOLD STRIPE W/PRINTED EDGES AT CAB PAINT BREAK
462	90610010	1	4" SCOTCHLITE STRIPE (TANDEM)

Line	Item #	Qty	Item Description/Comments
463	90630500	1	ONE PIECE "Z" STRIPE (UNDER 11-3/4")
464	90630110	2	1" SCOTCHLITE STRIPE ABOVE OR BELOW - EACH (TANDEM) (2)
465	90630210	2	1/8" BLACK EDGE ABOVE OR BELOW SCOTCHLITE - EACH (TANDEM) (2)
466	90684120	1	CHEVRON STRIPING, LADDER ENCLOSURE DOOR, REFLEXITE
467	90684320	1	CHEVRON STRIPING, REAR HOSEBED DOOR, REFLEXITE
468	90681120	1	CHEVRON STRIPING, REAR BODY OUTBOARD, REFLEXITE (Aerial Platforms)
469	90681499	1	CHEVRON STRIPING, REAR PLATFORM - NOT PROVIDED
470	90670020	1	CHEVRON STRIPING, FRONT BUMPER, REFLEXITE
471	90710075	1	BOOM SIGN, APPROX 88" X 26"
472	90720140	1	14" LETTERING FOR BOOM SIGN
473	90789100	1	GRAPHICS WARRANTY, AGI, 5 YEARS, MATERIAL ONLY
474	10310420	1	EQUIPMENT
EQUIPMENT			
475	91010000	1	MISC EQUIP - (1) PINT TOUCH-UP PAINT, STAINLESS STEEL NUTS & BOLTS
476	91030702	1	ZIAMATIC SAC-44 FOLDING WHEEL CHOCKS (PAIR) MTD IN REAR LADDER ACCESS AREA (SPH)
477	89050100	1	PIKE POLE STORAGE TUBES, (3) EA SIDE
478	10310600	1	COMPLETION & WARRANTY
COMPLETION & WARRANTY			
479	99010100	1	MANUALS, ELECTRONIC VERSION (2-USB)
480	99031110	1	DELIVERY, AERIAL APPARATUS
481	99520210	1	WARRANTY, ONE YEAR - AERIALS (DUBLIN)
482	99521100	1	WARRANTY, FRAME, LIFETIME
483	99521200	1	WARRANTY, CAB STRUCTURAL, 10 YR.
484	99521300	1	WARRANTY, BODY STRUCTURAL, 10 YR.
485	99521400	1	WARRANTY, PAINT, 10 YR.
486	99521500	1	WARRANTY, AERIAL MECHANICAL, 2 YR.
487	99521600	1	WARRANTY, AERIAL STRUCTURAL, 30 YR.

Line	Item #	Qty	Item Description/Comments
488	99521900	1	WARRANTIES, MAJOR VENDOR COMPONENTS
489	10310500	1	SUPPLIED
SUPPLIED			
490	PDB000573	1	DEALER SUPPLIED - Black Turtle Tile Matting
491	PDB000626	1	DEALER SUPPLIED - EQUIPMENT PACKAGE \$85,000.00 ALLOWANCE
492	120-98	1	DEALER SUPPLIED - CUSTOMER ALLOWANCE \$50,000.00 ALLOWANCE

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INTENT OF SPECIFICATIONS

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

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

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

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

STATEMENT OF EXCEPTIONS TO NFPA 1901

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

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

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

QUALITY AND WORKMANSHIP

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

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

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

PERFORMANCE TESTS AND REQUIREMENTS

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

- a. The apparatus must be capable of accelerating to 30 MPH from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed engine RPM.
- b. The service brakes shall be capable of stopping the fully loaded vehicle within 35 feet from a speed of 25 MPH on a level concrete highway.
- c. The apparatus, fully loaded, shall be capable of obtaining a speed of 50 MPH on a level highway with the engine not exceeding 95% of its governed RPM (full load).
- d. The apparatus shall be tested and approved by a qualified testing agency in accordance with their standard practices for pumping engines.
- e. The contractor shall furnish copies of the Pump Manufacturer's Certification of Hydrostatic Test (if applicable), the Engine Manufacturer's current Certified Brake Horsepower Curve and the Manufacturer's Record of Construction Details.

FAILURE TO MEET TESTS

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

EXCEPTIONS TO SPECIFICATIONS

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

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

GENERAL CONSTRUCTION

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

DELIVERY REQUIREMENTS

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

PURCHASER RIGHTS

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

U.S.A. MANUFACTURER

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

MANUFACTURER'S EXPERIENCE

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

ELIMINATION OF DIVIDED RESPONSIBILITY

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

FAMA COMPLIANCE

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

BID SEQUENCE

For ease of evaluation, all bid proposals shall be submitted in the same order as the fire department's specification. NO EXCEPTIONS.

PROPOSAL DRAWING

A general layout drawing depicting the apparatus layout and appearance shall be provided with the bid. The drawing shall consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, shall have a general layout view of the pump operators panel scaled the same as the elevation views. The drawing shall be a depiction of the actual apparatus proposed and not of a generic similar product.

APPROVAL DRAWING

After the award of bid and pre-construction conference, a detailed layout drawing depicting the apparatus layout and appearance including any changes agreed upon shall be provided for customer review and signature. The drawing will become part of the contract documents. The drawing shall consist of left side, right side, frontal and rear elevation views. Apparatus equipped with a fire pump, shall have a general layout view of the pump operators panel scaled the same as the elevation views.

WIRING SCHEMATIC

Wiring diagrams of the apparatus shall be provided on a USB flash drive at the time of delivery.

PRE-CONSTRUCTION CONFERENCE

After award of the contract, and prior to construction of the apparatus, a pre-construction conference shall be held at the facility of the manufacturer. A provision shall be provided in the bid price for all travel, food and lodging for four (4) fire department members.

INSPECTION TRIPS

An inspection trip shall be provided at the manufacturer's facility, midway through the construction of the apparatus. A provision shall be provided in the bid price for all travel, food and lodging for our (4) fire department members.

INSPECTION TRIPS

An inspection trip shall be provided at the manufacturer's facility, prior to delivery of the completed apparatus. A provision shall be provided in the bid price for all travel, food and lodging for our (4) fire department members.

PERFORMANCE BOND

Within twenty (20) days of notification to the successful bidder by the purchaser, prior to any work commencing on the proposed apparatus, the successful bidder shall, at their own expense, obtain and submit to the purchasing entity a performance bond in the amount of 100% equal to the total contract price.

Additionally, each bidder must disclose the price/amount it pays for bonding, per \$1,000. This is to demonstrate the economic stability and credit worthiness of the bidder. NO EXCEPTIONS.

SEVERE DUTY CUSTOM CHASSIS

A Severe Duty Cab and Chassis system shall be provided. The chassis shall be manufactured in the factory of the bidder. The chassis shall be designed and manufactured for heavy duty service with adequate strength

and capacity of all components for the intended load to be sustained and the type of service required. The cab and chassis system, shall be considered the bidders "Top of the Line". There shall be no divided responsibility in the production of the apparatus.

WHEELBASE

The approximate wheelbase shall be 230".

DOUBLE FRAME RAILS/TANDEM AXLES

The chassis frame shall be of a ladder type design utilizing industry accepted engineering best practices. The frame shall be specifically designed for fire apparatus use.

Each frame rail shall be constructed of two .375" thick-formed channels. The outer channel shall be 10.188" x 3.50" x .375" and the inner channel (liner) shall be 9.31" x 3.13" x .375".

The section modulus shall be 31.8 in.³. The resistance to bending moment (RBM) over the entire rail will be at-least 3,498,000 in./lbs.

The cross-members shall be constructed of minimum 3/8" formed channels and have formed gusseted ends at the frame rail attachment. Tandem suspensions will use a multi-piece bolt assembled "butterfly" cross-member configuration. This cross-member will span the entire rear of the vehicle.

Each rail is media blasted to remove scale, oil, and contaminants. This blasting also ensures paint adhesion. Each rail will be primed with Cathacoat 302HB, a high performance, two component, reinforced inorganic zinc-rich primer with proven cathodic protection of steel structures, prior to assembly.

.625 inch, grade 8 flange, Huck bolt fasteners shall be used on all permanently attached brackets to the frame to eliminate the need for bolt re-tightening.

A lifetime warranty shall be provided, per manufacturer's written statement.

FRONT BUMPER CLIP

The front clip of the subframe shall be designed with a built-in skid plate to protect the engine and chassis components. The front clip shall be painted the same color as the frame.

FRONT TOW EYES, BELOW BUMPER

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

REAR TOW EYES

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

STEERING

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

STEERING GEAR WARRANTY

The Ross steering gear shall have a one-year manufacturer's warranty.

DRIVE LINE

A SPICER LIFE (SPL) Series Model 250 driveline shall be provided with a Meritor universal joint assembly. This configuration provides longer bearing life with the highest power density available. A high-capacity bearing package with larger needle rollers are sealed with a long life double-lip Viton seal and seal guard to keep grease in and allow a better purge capability. The high power density allows transmission of higher torque with a smaller swing diameter, assisting in tight packaging requirements (184mm swing diameter / 130mm tube diameter / 5mm wall). The 110 mm of slip is boot protected. On-highway lubrication intervals, initial at 350,000 miles or 3 years (whichever comes first) and re-lube at 100,000 miles thereafter.

ENGINE

The apparatus shall be powered by a Cummins Diesel X 15 505 HP @ 1800 R.P.M., 1850 ft. lb. torque @ 1000 R.P.M.

Displacement: 14.9 liter displacement.

Cylinders: 6
Bore: 5.39" (137mm)
Stroke: 6.65" (169mm)

AIR COMPRESSOR

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

STARTER

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

EXHAUST SYSTEM

The engine exhaust system shall be horizontal design constructed from heavy-duty truck components.

The engine exhaust system shall include the following components:

STAINLESS STEEL TUBING

Stainless Steel Flexible Bellows mounted at the turbo outlet. Stainless steel piping to the Aftertreatment Unit. Stainless steel piping from the Aftertreatment Unit to the stainless steel heat diffuser outlet.

AFTERTREATMENT UNIT

The single canister Aftertreatment Unit is a self-contained exhaust treatment system which includes:

DPF (diesel particulate filter)

DEF Injector/Reactor

SCR (selective catalytic reducer)

The DEF injector/reactor utilizes the DEF fluid, which consists of urea and purified water, to convert NOx into nitrogen and water. This will meet or exceed 2027 EPA emissions requirements. A heated aftertreatment system shall be provided that is powered from a belt-driven 48V alternator on the engine.

The Stainless Steel Flexible Bellows shall be used to isolate the exhaust system from engine vibrations. The single canister Aftertreatment Unit shall be mounted under the right side frame rail, meeting the specific engine manufacturer's specifications and current emission level requirements. The heat diffuser outlet shall

be directed to the forward side of the rear wheels, exiting the right side with a heavy duty heat diffuser. The heat diffuser shall prevent the exhaust temperature from exceeding 851 deg. F during a regeneration cycle.

INSULATED JACKETS

Heat-absorbing, removable, insulated jackets shall be provided on the exhaust system from the turbo outlet in the engine compartment to the Aftertreatment Unit. The jackets will cover all piping, including the bellows, between the engine and the Aftertreatment Unit per engine manufacturers requirements insuring that the exhaust stream temperature remains elevated to ensure functionality with the Aftertreatment Unit. Additionally, the insulated jackets will protect the engine componentry from excessive heat generated by the exhaust.

ON-BOARD DIAGNOSTIC (OBD) SYSTEM

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

ENGINE WARRANTY

The engine shall have a five (5) year or 100,000 mile warranty and approval by Cummins Diesel for Full Engine Coverage Plan (RVF) – which is their most complete engine coverage plan, which includes EGR components installation in the chassis. There shall be no deductible for the first two years. A one hundred dollar deductible shall apply for service beginning the third year.

AFTERTREATMENT WARRANTY

The engine shall have a five (5) year or 100,000 mile aftertreatment coverage warranty, which covers failures of the Aftertreatment Assembly which result, under normal use and service, from a defect in Cummins material or factory workmanship.

AIR CLEANER/INTAKE

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

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

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

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

PRIMARY FUEL FILTER/WATER SEPARATOR

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

12VDC HEATER

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

SECONDARY FUEL FILTER

A Cummins approved Fleetguard FF825NN fuel filter will be mounted on the driver's side of the engine.

TRANSMISSION

The chassis shall be equipped with a Generation 6 Allison EVS4500 six (6) speed automatic transmission. It shall be programmed five (5) speed, sixth gear locked out, for fire apparatus vocation, in concert with the specified engine.

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

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

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

Mechanical Ratios: 1st – 4.70:1
2nd – 2.21:1
3rd - 1.53:1
4th - 1.00:1
5th - 0.76:1
Reverse - -5.55:1

TRANSMISSION FLUID

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

TRANSMISSION WARRANTY

The Allison transmission shall have a five (5) year manufacturer's warranty.

ENGINE BRAKE

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

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

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

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

TRANSMISSION COOLER

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

TRANSMISSION SHIFTER

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

COOLING SYSTEM

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

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

The cooling system shall be comprised of a charge air cooler to radiator serial flow package that provides the maximum cooling capacity for the specified engine as well as serviceability. The main components shall include a surge tank, a charge air cooler, bolted to the top of the radiator to maximize cooling, recirculation shields, a shroud, a fan, and required tubing. All components shall consist of an individually sealed system.

Integration of the Horton Revolution Fan, variable speed fan hub, Deep Core (200mm thick) radiator and charge air cooler, and a two-piece flexible membrane shroud has enabled Sutphen to meet the rigors of engine cooling while maintaining our current product line.

RADIATOR

The radiator shall be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator shall be bolted to the bottom of the charge air cooler to allow a single depth core (200mm), thus allowing a more efficient and serviceable cooling system.

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

CHARGE AIR COOLER

The charge air cooler shall be of a cross-flow design and constructed completely of aluminum with extruded tanks. The charge air cooler shall be bolted to the top of the radiator to allow a single depth core (200mm).

COOLANT

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

HOSES & CLAMPS

Silicone hoses shall be provided for all engine coolant lines.

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

FAN

The engine cooling system shall incorporate a heavy-duty Aluminum high efficiency hybrid flow centrifugal design fan, providing 20% greater air flow than axial type fans. Better under hood ventilation is achieved by the fan's configuration. Used in conjunction with an electronic/hydraulic variable speed hub, the system provides almost no operating noise. A floating two piece shroud with flexible membrane and recirculation shield system shall be used to ensure air that has passed through the radiator is not drawn through again.

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

FAN CLUTCH

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

SURGE TANK

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

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

FUEL TANK

The chassis shall be equipped with a 65-gallon rear mounted, behind the rear axle, rectangular fuel tank that shall be constructed of steel. The fuel tank shall be certified to meet FMVSS 393.67 tests. It shall also maintain engine manufacturer's recommended expansion room of 5%.

There shall be two (2) tank baffles.

Dual pick-up and return ports shall be provided for diesel generators if required.

The fuel lines shall be nylon braid reinforced fuel hose with brass fittings. The lines shall be carefully routed along the inside of the frame rails. All fuel lines are covered in high temperature rated split plastic loom. Single suction and return fuel lines shall be provided.

The bottom of the fuel tank shall contain a 1/2" drain plug.

FUEL FILL

The fuel tank shall be equipped with a 2-1/4" filler neck assembly with a 3/4" vent located on the driver's side of the truck. A fuel fill cap attached with a lanyard shall be provided.

FUEL COOLER

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

DIESEL EXHAUST FLUID TANK

The exhaust system shall include a molded cross linked polyethylene tank. The tank shall have a capacity of 5 usable gallons and shall be mounted on the left side of the chassis frame.

The DEF tank fill neck shall accept only a 19mm dispensing nozzle versus the standard 22mm diesel fuel dispensing nozzle to prevent cross contamination. The DEF tank cap shall be blue in color to further prevent cross contamination.

A placard shall accompany fill location noting DEF specifications.

ALTERNATOR

A 420 ampere Prestolite/Leece Neville alternator with serpentine belt shall be provided. The alternator shall generate 260 amperes at idle.

LOW VOLTAGE ALARM

A Floyd Bell TXB-V86-515-QF low voltage alarm, audible and visual, shall be provided.

BATTERIES

The battery system shall be a single system consisting of four (4) negative ground, 12 volt Interstate Group 31 MHD batteries, cranking performance of 950 CCA each with total of 3800 amps, 185 minute reserve capacity with 25 ampere draw at 80 degrees Fahrenheit. Each battery shall have 114 plates. The batteries shall include a one-year warranty which shall be accepted nationwide.

The batteries shall be installed in a vented 304 stainless steel battery box with a removable aluminum cover to protect the batteries from road dirt and moisture. The battery cover shall be secured with four "T" handle rubber hold downs to provide easy access for maintenance and inspection. Stainless steel hardware will be used for installation. The batteries are to be placed on dri-deck and secured with a fiberglass hold down. The batteries shall be wired directly to starter motor and alternator.

The battery cables shall be 3/0 gauge. Battery cable terminals shall be soldering dipped, color-coded and labeled on heat shrink tubing with a color-coded rubber boot protecting the terminals from corrosion.

There shall be a 350-ampere fuse protecting the pump primer and a 250-ampere fuse protecting the electric cab tilt pump and other options as required.

BATTERY JUMPER TERMINAL

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

BATTERY CHARGER

A Kussmaul Auto Charge Chief 4012 with remote panel model #091-266-12-40-RCP 40 amp battery charger shall be provided and installed in the cab. The unit shall include a built in touch screen, IP32 rated, and configurable for 3-step or float charging. The charger shall be wired to the 120V shoreline inlet.

120V SHORELINE INLET & AUTO EJECT

The apparatus shall be equipped with a 120V shoreline inlet to provide power to the battery charger from an external source. The inlet shall include a Kussmaul 091-55-120 90 Super 20 Auto Eject featuring a 12 volt solenoid which shall eject the shoreline cord away from vehicle path upon sensing engine start. After ejection, a 180 degree weatherproof cover shall snap into position over inlet.

A 20 amp connector shall be provided and shipped loose for connecting the external shoreline cord to the inlet.

120-VOLTS OUTLET WIRED TO SHORELINE INLET

Five (5) 120-volt outlet shall be provided and wired to the shoreline inlet. The location of the outlet shall be determined during the pre-construction conference.

FRONT AXLE

A Hendrickson STEERTEK NXT non-driving, front steer axle with a capacity of 24,000 pound shall be provided. The axle shall have a 3.74" drop and will have a fabricated boxed shaped cross section, a one piece knuckle, and serviceable king pin. Adjustable Ackerman settings shall be available, and determine based on wheelbase. The axle shall have 10 bolt hub piloted, and furnished with oil seals.

FRONT AXLE WARRANTY

The Hendrickson front axle shall have a five (5) year manufacturer's warranty.

SUSPENSION (FRONT)

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

FRONT SUSPENSION WARRANTY

The Hendrickson front suspension shall have a two (2) year manufacturer's warranty.

FRONT SUSPENSION LOCKING CYLINDERS

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

FRONT SUSPENSION LOCKOUT PLATE

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

STEER ASSIST

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

FRONT TIRES

Front tires shall be Goodyear 425/65R22.5, load range L, Armor Max Pro MSA highway tread, single tubeless type with a GAWR of 23,000 pounds. The rating shall be achieved with the Fire Service Intermittent Service Rating. Wheels shall be disc type, hub piloted, 22.5 x 12.25 10 stud 11.25 bolt circle.

REAR AXLE

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

INTER-AXLE DIFFERENTIAL LOCK

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

REAR AXLE WARRANTY

The Meritor rear axle shall have a three (3) year manufacturer's warranty.

INTER-AXLE CONTROLLED DIFFERENTIAL LOCK

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

SUSPENSION (REAR)

52,000 TANDEM AIR RIDE

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

REAR SUSPENSION WARRANTY

The Link rear suspension shall have a one (1) year manufacturer's warranty.

REAR TIRES

Rear tires shall be Goodyear 12R22.5, load range H, G622 Mud and Snow tread, dual tubeless type with a GAWR up to 52,000 pounds. Wheels shall be disc type, hub piloted, 22.5 x 8.25 10 stud with 11.25" bolt circle.

TIRE PRESSURE MONITOR

A Real Wheels LED tire pressure sensor shall be provided for each wheel. The pressure sensor shall indicate if a particular tire is not properly inflated. A total of ten (10) indicators shall be provided.

WHEELS

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

HUB COVERS

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

LUG NUT CAPS

Chrome plated lug nut caps shall be provided for the front and rear wheels.

FRONT MUD FLAPS

Hard rubber mud flaps shall be provided for front tires.

REAR MUD FLAPS

Hard rubber mud flaps shall be provided for the rear tires.

DATA, SAFETY & WARNING TAGS

All data, safety and warning tags shall be affixed with a commercial grade adhesive.

AIR DISC BRAKES

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

AIR BRAKE SYSTEM

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

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

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

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

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

be required to have a separate on-board electrical air compressor or shoreline hookup to meet this requirement.

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

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

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

AIR BRAKE SYSTEM WARRANTY

The Wabco air brake system shall have a three (3) year, 300,000 mile manufacturer's warranty.

AIR BRAKE SYSTEM RELEASE VALVE

The vehicle shall be equipped with air-operated Haldex air brake release valve located in the cab within an accessible reach to the driver.

CENTRAL LOCATION FOR AIR TANK DRAINS

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

AIR INLET

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

AIR COMPRESSOR

A Blue Sea model 7920 12V air brake compressor shall be provided and installed in the cab. The vehicle mounted air compressor shall ensure that the air brake system is properly pressurized for immediate response of the unit. A pressure switch shall regulate operation and shall automatically turns on at 95 psi and off at 125 psi.

The unit shall have an auto drain which shall be installed on the outlet side of the air compressor and shall automatically purge water from the air discharge output. The water shall be ejected from the water separator bowl every time the compressor cycles off via a 12 volt solenoid.

The compressor shall be wired to the 12V shoreline connection.

AIR BRAKING ABS SYSTEM

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

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

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

ASR SWITCH

An on/off switch for the Acceleration Slip Resistance shall be provided on the dash. This will allow the driver to override the computer and turn the ASR on when at a higher speed for better traction in deep snow or mud.

AUTOMATIC TIRE CHAIN SYSTEM

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

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

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

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

COMPRESSION FITTINGS ON AIR SYSTEM

All air line fittings installed on the chassis shall be compression style fittings.

The following locations shall utilize push-on fittings:

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

MISCELLANEOUS CHASSIS EQUIPMENT

Fluid capacity plate affixed below driver's seat.

Chassis filter part number plate affixed below driver's seat.

Maximum rated tire speed plaque near driver.

Tire pressure label near each wheel location.

Cab occupancy capacity label affixed next to transmission shifter.

Do not wear helmet while riding plaque for each seating position.

NFPA compliant seat belt and standing warning plates provided.

ALUMINUM CAB

The cab shall be a full tilt 6-person cab designed specifically for the fire service and manufactured by the chassis builder. Rear of the cab shall be slanted forward at the top rear for mid-ship aerial use. The outside of the rear cab wall shall be aluminum diamond plate.

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

CAB DESIGN

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

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

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

The cab roof shall utilize 5" x 5" honeycomb re-enforced 6061 T6 aluminum extrusion, with fully radiused outer corner rails with integral drip channel and 6061 T6 ¾" x 2" x 3/16" aluminum box tubing type cross brace supports. Structures that do not include an integral drip channel will not be accepted. The box tubing type cross brace supports shall be installed in a curved fashion beginning from the midline of the apparatus cab and curving toward the exterior corner rails. This curvature will allow for increased strength in the event of a roll over while not allowing for rainwater buildup on the apparatus cab roof.

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

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

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

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

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

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

CAB SUB-FRAME

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

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

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

CAB DIMENSIONS

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

Cab Width (excluding mirrors) 98"

Cab Length (from C/L of front axle)

To front of cab (excluding bumper) 70"

To rear of cab 56"

Total Cab Length (excluding bumper) 126"

ROOF DESIGN

The cab shall be of a flat roof design with side drip rails and shall satisfy the following minimum height dimensions:

Cab Dimensions Interior

Front 59"

Rear 59"

Cab Dimensions Exterior

Front 65"

Rear 65"

FENDER CROWNS

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

CAB INSULATION

The exterior walls, doors, and ceiling of the cab shall be insulated from the heat and cold, and to further reduce noise levels inside the cab. The cab interior sound levels shall not exceed 80 decibels at 45 mph in all cab seat positions. NO EXCEPTIONS

EXTERIOR GLASS

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

SUN VISORS

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

CAB STRUCTURAL INTEGRITY

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

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

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

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

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

SEAT BELT TESTING

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

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

CAB LOCKDOWN LATCHES

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

CAB TILT SYSTEM

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

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

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

MANUAL CAB LIFT

There shall be a manually operated hydraulic pump for tilting the cab in case the main pump should fail. Access to the pump shall be located under the left corner of the front bumper.

CAB DOORS

The cab doorframes shall be constructed from 6061 T6 aluminum extrusions fitted with a 5052 H32 aluminum sheet metal skin and shall be equipped with dual weather seals. The outside cab door window opening shall be framed by a black anodized aluminum trim, to provide a clean appearance. The cab doors shall be equipped with heavy-duty door latching hardware, which complies with FMVSS 206. The door latch mechanism shall utilize control cable linkage for positive operation. A rubber coated nylon web doorstop shall be provided.

The doors shall be lap type with a 10 gauge full-length stainless steel flange and 3/8" diameter hinge pin and shall be fully adjustable.

All openings in the cab shall be grommeted or equipped with rubber boots to seal the cab from extraneous noise and moisture.

The cab doors shall be designed to satisfy the following minimum opening and step area dimensions:

Door Opening:

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

CAB STEPS

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

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

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

AUXILIARY CAB STEPS

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

STEP LIGHTS

A white TecNiq E45 LED strip light shall illuminate each interior cab step. These lights shall illuminate whenever the battery switch is on and the cab door is opened.

POWER WINDOWS

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

SIDE WINDOWS

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

REAR CAB WINDOWS

Two sliding windows approximately 16.25" wide x 14.25" high shall be provided in the back wall of the cab.

WINDSHIELD WIPERS

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

WINDSHIELD WIPERS DEACTIVATED

The windshield wipers shall be deactivated when the parking brake is engaged.

WINDSHIELD WASHER RESERVOIR

A four quart capacity windshield washer reservoir shall be provided. The fill access shall be located in the forward officer's step well area.

MIRRORS

Two (2) Lang Mekra 300 Series smooth chrome plated Aero style main and convex mirrors shall be installed on each side of the vehicle. The main mirror shall be 4-way remote adjustable with heat, 7" x 16" 2nd surface chromed flat glass. The convex shall be 6" x 8" 2nd surface chromed 400 mm radius glass. Each mirror

housing assembly shall be constructed of lightweight textured chrome ABS with on truck glass and housing back cover replacement. In the event the mirror breaks the glass shall be replaceable in (3) minutes or less. The glass shall include a safety adhesive backing to keep broken glass in place. The mirror assembly shall be supported by a "C" loop bracket constructed of polished stainless steel tube utilizing two point mounting reducing vibration of mirror glass during normal vehicle operation. The lower section of the holder shall include a spring loaded single detent position 20 degrees forward with easy return to operating position without refocusing.

OUTRIGGER MIRROR, OFFICER'S SIDE

One (1) Truck-Lite 12" diameter convex mirror shall be provided and mounted on the rear wall of the cab, officer's side, for the purpose of viewing the officer's side outrigger from the outrigger controls in the L1 compartment area.

UPPER GRILLE

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

UPPER GRILLE LOGO

The upper grille shall have a laser cut flaming "S" logo in the upper portion of the grille. The cut out shall be illuminated by LED lights.

LOWER GRILLE

The front of the cab shall be equipped with a polished stainless steel lower grille with custom laser engraved design per customer specifications. The lower grille shall also be backlit with LEDs. Color shall be specified by customer. The design shall allow proper airflow into the cooling system and engine compartment. Plastic chrome plated lower grille shall not be acceptable.

PAINTED STEEL BUMPER

There shall be a 12" high painted formed steel wrap-around (45 degree) bumper provided at the front of the apparatus. The bumper shall be mounted to a reinforcement plate constructed of 1/4" x 12" x 70" carbon steel. The frame rail extension shall be a reinforced four-sided boxed frame rail for superior safety protection. A gravel shield shall be provided, constructed of .188" aluminum diamond plate. The bumper extension shall be approximately 18".

BUMPER SIDES

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

BUMPER ANGLE SIDES

The angled sides of the bumper shall feature a recessed painted steel pocket for any auxiliary lighting option selected. The pocket shall be a welded integral part of the bumper skin.

STORAGE WELL COMPARTMENT

There shall be a hose well compartment located in the center of the front bumper. The compartment shall run the full length of the bumper and measure approximately 75" long x 10" wide x 6" deep at the ends and 12" deep in the center. The compartment shall be constructed of .125" smooth aluminum plate.

DIAMOND PLATE BUMPER LID

There shall be a 1/8" diamond plate cover with latches provided for the front bumper trough. The cover shall have a 2" rise to accommodate the storage well requirements.

The storage well cover lid shall be provided with a cut-out to accommodate the front discharge. Location to be determined at the preconstruction conference.

PROTECTIVE BUMPER COATING

A Raptor texture coating shall be provided along the top edge of the front steel bumper. The color of the coating shall be determined at precon.

AIR HORNS

Two (2) Grover 2040 Stuttertone rectangular, chrome plated, air horns shall be provided.

AIR HORN BUMPER CUT-OUTS

The air horns shall be installed behind perforations in the front bumper.

AIR HORNS WIRED TO STEERING WHEEL

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

LANYARD CONTROL FOR AIR HORNS

The air horns shall be activated by a split "Y" lanyard in cab ceiling.

ELECTRONIC SIREN

One (1) Whelen 295HFS2 electronic siren shall be installed at the cab instrument panel complete with noise canceling microphone. The remote control head shall be flush mounted in a location specified by the fire department.

SIREN SPEAKER

One (1) Cast Products SA4201-5-A 100 watt weatherproof siren speaker shall be provided and wired to the electronic siren.

SPEAKER MOUNTING

The electronic siren speaker(s) shall be installed behind perforations in the front bumper.

FEDERAL Q2B SIREN

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

FOOT SWITCH, DRIVER'S SIDE

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

FOOT SWITCH, OFFICER'S SIDE

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

SIREN BRAKE SWITCH

A brake switch for the mechanical siren shall be provided in the lower command console for both the driver's and officer's position.

CAB EXTERIOR LIGHTING

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

HEADLIGHTS

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

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

HEADLIGHT FINISH

The interior components of the headlights shall have a black finish.

FRONT TURN SIGNALS

There shall be four (4) Whelen 400 Series Model 40A00AAR LED rectangular amber turn signal lights mounted one (1) each side in the front of the headlight housings and one (1) mounted on the side of each warning light housing.

ICC/MARKER LIGHTS

Five (5) ICC, LED marker lights shall be integrated in the brow light mounted on the front of the cab to meet D.O.T. requirements.

EXTERIOR CAB HANDRAILS

There shall be a four (4) handrails provided and installed, one at each cab entrance. All handrails shall be knurled extruded polished aluminum with rubber inserts, to provide a positive gripping surface. Each handrail shall be lit with a LED light integral to the handrail that shall run the full length of the handrail. The handrails shall be activated with the application of the parking brake.

INTERIOR CAB HANDRAILS

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

CAB DOOR HANDRAILS

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

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

INTERIOR DOOR STRAP

A nylon strap shall be provided on the lower hinge of each interior cab door to assist with entry.

CAB REAR WALL COVERING

The rear outside wall of the cab shall be covered with a Raptor texture coating. Color to be determined at preconstruction conference.

DIAMOND PLATE, CAB ROOF

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

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

CAB INTERIOR

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

The front and rear headliners, as well as the rear cab wall, shall be finished in Gray-Black Durawear covered padded panels.

INTERIOR DOOR PANELS

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

CAB FLOOR COVERING

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

ENGINE ENCLOSURE

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

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

Additionally, the underside of the engine enclosure shall be coated in with a ceramic spray on insulation and sound control. This coating is an environmentally-friendly coating that is applied seamlessly and rapidly while

providing superior thermal insulation and protection against vibration and noise, and will prevent future corrosion from forming by sealing the substrate. NO EXCEPTIONS

ENGINE ENCLOSURE COVERING

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

CENTER CONSOLE EXTENSION

There shall be an extension added to the center console area on top the engine enclosure between the driver and officer. The console shall be constructed from smooth aluminum and shall be coated with a durable coating to match the color of the engine hood covering and shall feature surfaces on each side that are contoured to face the driver and the officer for easy viewing and accessibility. The switches and other customer specified electrical items shall be mounted in removable 1/8" smooth aluminum panels with a black wrinkle finish.

TOP OF EXTENSION

There shall be two (2) stainless steel cup holders and a storage slot measuring 11"L x 4"W x 10"D recessed into the top of the center console extension between the driver and officer.

ENGINE HOOD LIGHTS

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

WORK SURFACE

There shall be a flat work surface in front of the officer's seat.

UPPER CREW DOOR AREA

Each upper cab crew door area shall be finished with a smooth aluminum panel, painted to match cab interior.

CHASSIS WIRING

All chassis wiring shall have XL high temperature crosslink insulation. All wiring shall be color-coded, and the function and number stamped at 3" intervals on each wire. All wiring shall be covered with high temperature rated split loom for easy access to wires when trouble shooting. All electrical connectors and main connectors throughout the chassis shall be treated to prevent corrosion.

MASTER ELECTRICAL PANEL

The main chassis breaker panel shall be wired through the master disconnect solenoid and controlled by the three-position ignition rocker switch. The breaker panel shall be located in front of the officer on the interior firewall and shall be protected by a removable aluminum cover. The cover shall have an aluminum notebook holder on the exterior face accessible to the officer. The cover shall be painted with a durable finish to match the interior of the cab and shall be secured with two (2) thumb screws.

The breaker panel shall include up to 22 ground switched relays with circuit breaker protection. An integrated electrical sub-panel shall be provided and interfaced to the body and chassis through an engineered wire harness system.

Twelve (12) 20-ampere relays and one (1) 70-ampere relay shall be provided for cab light bar and other electrical items. If the option for a mechanical siren has been selected two (2) additional relays shall be provided.

Up to two (2) additional relay boards with circuit breaker protection shall be provided for additional loads as required. Each board shall contain four (4) relays. The relay boards shall be configured to trip with input from switch of positive-negative or load manager by moving the connector on the board (no tools required).

All relay boards shall be equipped with a power-on indicator light (red), input indicator light (green) and power output indicator light (red).

Up to twenty-three (23) additional automatic reset circuit breakers for non-switched loads that are remotely switched (ie: heater fans, hood lights, etc.) shall be provided.

All relays and circuit breakers on the relay boards shall be pull-out/push-in replaceable.

All circuit breakers on the relay boards shall be 20 ampere automatic reset which can be doubled or tripled for 40 or 60-ampere capacity.

The system shall utilize Deutsch DRC weather resistant connectors at the breaker panel, toe board and main dash connections.

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

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

All switches shall be ground controlled; no power going through any rocker switch.

Any switch controlling a relay in the breaker panel shall be capable of being set to function only when the parking brake is set. All relays shall be tagged with the function that the relay is controlling.

INSTRUMENT PANEL

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

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

MASTER BATTERY & IGNITION SWITCH

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

DIESEL PARTICULATE FILTER CONTROLS

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

INSTRUMENTATION & CONTROLS

Instrumentation on dash panel in front of the driver:

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

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

Voltmeter

Diesel fuel gauge

DEF (Diesel Exhaust Fluid) gauge

Engine oil pressure

Transmission temperature

Engine temperature

Primary air pressure

Secondary air pressure

Indicators and warning lights in front of the driver:

Parking brake engaged

Low air with buzzer

Antilock brake warning

Check transmission

Transmission temperature

Upper power indicator

Seat belt

Engine temperature

Low oil indicator

Low voltage indicator

Air filter restriction light

Low coolant indicator

High idle indicator

Power on indicator

Check engine

Stop engine

Check engine MIL lamp

DPF indicator

High exhaust temperature

Wait to start

Other indicator and warning lights (if applicable):

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

Controls located on main dash panel in front of the driver:

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

Controls included in steering column:

- Horn button
- Turn signal switch
- Hi-beam low-beam switch
- 4-way flasher switch
- Tilt-telescopic steering wheel controls

CENTER CONTROL CONSOLE

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

Controls located in the console conveniently accessible to the driver:

- Transmission shifter
- Pump shift control with OK TO PUMP and PUMP ENGAGED lights

Remote mirror control

Illuminated rocker switches to control high idle, Jacob's brake, siren/horn, siren brake, master emergency, and other customer specified components

12V power point (if applicable)

Controls located in the console conveniently accessible to the driver and the officer (center):

Parking brake control with a guard to prevent accidental engagement

Controls located in the console conveniently accessible to the officer:

Illuminated rocker switches to control customer specified components that are easily reachable to the officer and do not allow for compromise of the driver's view, and eliminate the need for foot switches

Surface to recess siren head, radio head, or other desired items as space permits

12V power point (if applicable)

Driving compartment warning labels shall include:

HEIGHT OF VEHICLE

OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION

DO NOT USE AUXILIARY BRAKING SYSTEMS ON WET OR SLIPPERY ROADS

EXIT WARNINGS

Additional labels included:

COMPUTER CODE SWITCH

ABS CODE SWITCH

FLUID DATA TAG

CHASSIS DATA TAG

OVERHEAD CONTROL CONSOLE

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

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

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

The center overhead panel shall be designated for up to seven (7) door ajar indicators. Upon releasing the apparatus parking brake, one or more of these lights shall automatically illuminate (flash) when any of the

following conditions occur that may cause damage if the apparatus is moved: cab or compartment door is open; ladder or equipment rack is not stowed; stabilizer system deployed; any other device has not been properly stowed.

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

ENGINE WARNING SYSTEM

An engine warning system shall be provided to monitor engine conditions such as low oil pressure, high engine temperature and low coolant level. Warning indication shall include a STOP ENGINE (red) light with audible buzzer activation and a CHECK ENGINE (amber) light. Note: (Some engine configurations may also include a fluid warning light.)

There shall be a master information light bar with 24 lights located across the center of the dash panel that covers up to 24 functions. These are defined under Indicators and Warning Lights above.

PUMP SHIFT MODULE

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

PUMP INTERLOCK

While the apparatus is in pump gear the odometer shall not be connected so that engine miles are not counted during pumping operations. The user shall still reference the engine RPM and light indicated in the lower console to verify that the unit is in pump gear.

DO NOT MOVE APPARATUS INDICATOR LIGHT

A Whelen ION-T LED light shall be installed in the cab near the driver. The light shall illuminate when the parking brake is released and any cab or body door is open or any other item on the apparatus is not properly stowed that may cause damage.

PROGRAMMABLE LOAD MANAGER

Load manager shall have the ability to sequence loads on and off. The Super Node II has twenty-four (24) inputs and twenty-four (24) outputs. Eighteen (18) are positive polarity outputs and six (6) are ground polarity outputs. It shall also be able to establish a 8 priority levels to shedding loads when the vehicle is stationary, starting at 12.8 volts lowest priority load to be shed, then respectively at 12.7, 12.5, 12.3, 12.1, 11.9, 11.5 and never shed volts DC. An output is shed (turned OFF) when the system voltage drops below the designated priority level's shed voltage for thirty (30) seconds. If the voltage has dropped below multiple priority level shed voltages then each higher priority level will shed before the lower priority levels. An output is unshed (turned back ON) when the system voltage rises above the designated priority level's unshed voltage for ten (10) seconds. If the voltage has risen above multiple priority level unshed voltages then each lower priority level will unshed before the upper priority levels.

MASTER SWITCH

All outputs can be tied or not tied to the stage switch. In fire apparatus this switch is typically referred to as the master switch. The state of the stage switch is controlled by Utility Module output memory space 3. When this output is active the stage switch is active. Any output tied to the stage switch will be OFF if the stage switch is not active regardless of the output's multiplex equation. Set an output to be tied to the stage switch by checking the stage switch box in its "Output Port Load Settings" under the "Settings" tab. The name of the stage switch can be changed from the standard "stage" to anything desired by modifying the text in the "Output Port Load Settings" area.

AUTOMATIC HIGH IDLE ACTIVATION

The Utility Module's high idle request (input memory space 2) is activated when the system voltage drops below the high idle threshold (12.8 volts standard or 25.6 volts if 24 volt load management is enabled) for 8 seconds or longer AND load management has been enabled (Utility Module output memory space 1 is active). The high idle request will remain active as long as the voltage remains below the voltage threshold and for 3 minutes after the system voltage rises above the voltage threshold. High idle can be canceled by activating the Utility Module's high idle cancel (output memory space 0).

HIGH IDLE

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

CAB ACCESSORY FUSE PANEL

A fuse panel shall be located underneath the rear facing seat on the officer's side. The fuse panel shall consist of six (6) battery hot and six (6) ignition switch circuits. Each circuit shall be capable of 10-ampere 12-volt power and total output of 50-amps. The fuse panel shall be capable of powering accessories such as hand held spotlights, radio chargers, hand lantern chargers and other miscellaneous 12-volt electrical components.

POWER & GROUND STUDS, OVERHEAD COMMAND CONSOLE

There shall be a set of four (4) threaded power studs provided in the cab's overhead Command Console for future installation of two-way radios.

The studs shall be wired as follows:

- One (1) 12-volt 60-amp, direct to the battery ignition off.
- One (1) 12-volt 30-amp switched battery first position on ignition switch.
- One (1) 12-volt 30-amp ignition power second position on ignition switch.
- One (1) 12-volt 125-amp ground.

VEHICLE DATA RECORDER

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

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

AUXILIARY POWER POINT

A 12-volt 20-ampere auxiliary lighter socket type plug-in, shall be provided in the cab.

DUAL POWER POINT, USB-USBC

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

LIGHTING CAB INTERIOR

Interior lighting shall be provided inside the front of the cab for passenger safety. Two (2) Whelen 6" round ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens. One light shall be located over each the officer and driver's position. The lights shall also activate from the open door switch located in each cab doorjamb.

LIGHTING CREW CAB INTERIOR

Interior lighting shall be provided inside the crew cab for passenger safety. Two (2) Whelen 6" round ceiling mounted combination red/clear LED dome lights with a push button on/off switch in the light lens shall be provided. The lights shall also activate from the open door switch located in each cab doorjamb.

DOOR LIGHTS

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

HEAVY DUTY HEATER/DEFROSTER/AIR CONDITIONER

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

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

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

HEATER/DEFROSTER/AIR CONDITIONING CONTROLS

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

A/C WARRANTY

The air conditioning unit shall have a two (2) year manufacturer's warranty.

FLOORBOARD HEATING DUCT

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

DEFROSTER DIFFUSER

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

TOOL MOUNTING PLATE

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

AUXILIARY DEFROSTER FAN

There shall be a Red Dot model RD-5-5786-OP 12-volt fan mounted under the upper command console, inboard of console position 2, directed at the driver's side windshield. The fan shall be activated by a 3-position toggle switch located at the base of the fan. The switch positions shall be High, Low and Off.

AUXILIARY DEFROSTER FAN

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

DRIVER'S SEAT

A H.O. Bostrom Sierra high back ABTS seat with air suspension shall be provided for the driver. The seat shall be equipped with a red 3-point shoulder harness with lap belt. The seat shall have fore/aft adjustment and shall be upholstered with heavy duty Low Seam Durawear Plus material.

SEAT BELT CONFIGURATION

The seat belt shall be pulled from the left shoulder to the buckle on the right.

HELMET STORAGE

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

OFFICER'S SEAT

An H.O. Bostrom Tanker 450 ABTS SCBA seat shall be provided for the officer. The seat back shall have a SCBA cavity and auto-pivot-and-return padded headrest. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Durawear Plus material.

SEAT BELT CONFIGURATION

The seat belt shall be pulled from the right shoulder to the buckle on the left.

UNDER SEAT STORAGE COMPARTMENT

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

HELMET STORAGE

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

CREW SEAT – DRIVER'S SIDE, REAR FACING

One (1) H.O. Bostrom Tanker 450 ABTS SCBA fixed base seat shall be installed behind the driver. The seat back shall have a SCBA cavity and auto-pivot-and-return padded headrest. The seat shall be equipped with a

red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Durawear Plus material.

SEAT BELT CONFIGURATION

The seat belt shall be pulled from the right shoulder to the buckle on the left.

HELMET STORAGE

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

CREW SEAT – OFFICER’S SIDE, REAR FACING

One (1) H.O. Bostrom Tanker 450 ABTS SCBA fixed base seat shall be installed behind the officer. The seat back shall have a SCBA cavity and auto-pivot-and-return padded headrest. The seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The seat shall be upholstered with heavy duty Low Seam Durawear Plus material.

SEAT BELT CONFIGURATION

The seat belt shall be pulled from the left shoulder to the buckle on the right.

HELMET STORAGE

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

SEAT UPHOLSTERY COLOR

The cab seat upholstery shall be black in color.

SCBA BRACKETS

Each SCBA seat in the cab shall feature an IMMI SmartDock hands-free self contained breathing apparatus (SCBA) storage bracket within the seat back.

The bracket shall consist of a main vertical support bracket, lower guide plate with valve retaining tabs, top claw assembly with wings, and an integral height adjustment knob. The top claw shall be adjustable for different diameters of SCBA cylinders. The head height shall be adjustable with the integrated adjustment knob for different heights of SCBA cylinders.

The bracket shall feature single-motion SCBA insertion and hands-free release when the fire fighter stands up to exit the seat. In the event of a collision, the top claws lock from inertial forces for a secure hold.

SEAT BELT WARNING SYSTEM

An Akron / Weldon seat belt warning system shall be provided, and shall monitor each seating position. Each seat shall be supplied with a sensor that, in conjunction with the display module located on the dash, shall determine when the seat belt was fastened and if the seat is occupied. An icon shall represent that the seat is properly occupied. An audible and visual alarm shall be activated if the seat is occupied and/or the belt is not fastened in the proper sequence.

CREW SEAT COMPARTMENT

A compartment shall be provided under the forward facing crew seats on the back wall of the cab. The compartment shall be full through, with open access on each side of the crew cab doors. Compartment dimensions are 47"L x 14.75"H x 18.75"W.

IN-CAB OVERHEAD STORAGE AREA

An overhead storage area shall be provided at the front of the raised roof portion inside of the cab above the rear-facing crew seats. The full-width storage area shall be approximately 84" wide x 10.5" high x 17" deep and shall have a Zolatone gray/black rubberized, textured finish to match the cab interior. The storage area shall be equipped with aluminum lift-up doors.

ANTENNA MOUNTING

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

HD STEREO

A Jensen HD AM/FM/WB Bluetooth stereo shall be provided with four speakers. Weather Alert not wired to emergency lights and to be located driver side.

REAR VISION CAMERA SYSTEM, SINGLE CAMERA

A Fire Research inView™ TrueSight™ model BCA111-A00 kit shall include: (1) one 130° camera with 18 infrared illuminators and (1) one 7" digital monitor.

The 130° Camera shall include the following features: 1/3" SONY® Color CCD Sensor, 250,000 pixels for Picture Elements and Gamma Correction with R=0.45 to 1.0. Camera shall have Mirror Image capability. (1) One 66 ft. Extension Cable shall be included for the camera. (1) One Screw Kit shall be provided for camera installation. The camera shall have a built-in high gain microphone. The Image Sensor shall provide 600 TV Lines PAL: 500(H) *582(V), NTSC: 510(H) *492(V). The 2.1MM Lens shall have a 130° Viewing Angle. The Waterproof rating shall be IP69K. The 130° Camera shall include an Internal Synchronization Sync System. Infrared Distance shall be 50 Ft. (18 Infrared IR). The Usable Illumination shall be 0 Lux (with IR ON). The Power Source shall be DC 12V (+/-10%). Signal-to-Noise ratio (S/N Ratio) shall be rated for higher than 48DB. The Electronic Iris rating shall be 1/50, 1/60-1/100,000 seconds. Video Output rating shall be 1VP.P 75 Ω. The IR Switch Control shall have a CDS Automatic Control. Vibration and Impact Rating shall be 20G/100G.

FIRE PUMP HALE QMAX-200

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

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

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

All moving parts in contact with water shall be of high quality bronze or stainless steel. Easily replaceable bronze labyrinth wear rings shall be provided. Discharge passage shall be designed to accomplish uniform pressure readings as the actual pump pressure. The rated capacity of the fire pump shall be 2000 gallons per minute in accordance with NFPA# 1901.

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

PUMP TRANSFER CASE – K SERIES

The drive unit shall be designed of ample capacity for lubricating reserve and to maintain the proper operating temperature. Pump drive unit shall be of sufficient size to withstand up to 18,500 lbs. ft. torque of the engine in both road and pump operating conditions.

The gearbox drive shafts shall be heat treated chrome nickel steel input and output shafts shall be at least 2-3/4" in diameter, on both the input and output shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.

The engagement of the pump transmission shall be of such design so as to permit transfer of power from road to pump operation only after vehicle is completely stopped. The pump shift shall be air actuated from the cab and have both a green "Pump Engaged" light, and a green "O.K.-To-Pump" light. A third green light shall be provided on the pump operator's panel for "Throttle Ready".

The pump drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory.

MECHANICAL PUMP SEAL

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

PUMP ANODE

A Hale pump anode kit shall be provided and installed in the pump body. A minimum of two (2) anodes shall be installed, one (1) in the suction side and one (1) in the discharge side of the pump.

PUMP TEST & CERTIFICATION

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

AUXILIARY COOLER

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

PUMP CONNECTIONS

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

TANK TO PUMP

The booster tank shall be connected to the intake side of the pump with a check valve. The 3" tank to pump line shall run from a bottom sump into the 3" valve. To prevent damage due to chassis flexing or vibration, a short 3" flexible rubber hose coupling shall be used to connect the tank to the intake valve.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Innovative Controls push/pull handle located at the operator's panel.

TANK FILL

A 1.5" tank fill shall be provided, using a quarter turn full flow ball valve controlled from the pump operator's panel.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Innovative Controls push/pull handle located at the operator's panel.

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

Fire Research PumpBoss Max series PBA500-A10 pressure governor and control module kit shall be installed. The kit shall include a control module, discharge pressure sensor, and cables. The control module housing shall be waterproof and have dimensions not to exceed 7 1/2" high by 3 5/8" wide. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 2" from the front of the control module. The control LCD shall be 3.5" in size with a minimum brightness of 1000 nits and optically bonded to 3mm Borofloat Glass. Inputs for monitored engine information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific signal wiring. Inputs from the pump discharge pressure sensor shall be electrical.

The following continuous displays shall be provided:

- Engine RPM; shown on LCD screen
- Check engine and stop engine warning; shown on LCD screen
- Engine oil pressure; shown on LCD screen
- Engine coolant temperature; shown on LCD screen
- Transmission Temperature; shown on LCD screen
- Battery voltage; shown on LCD screen
- Pressure and RPM operating mode LEDs
- Pressure / RPM setting; shown on LCD screen
- Throttle ready / Ok to Pump LEDs.

On screen (LCD) message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. LCD Screen and LED's intensity shall be automatically adjusted for day and nighttime operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

High Battery Voltage

Low Battery Voltage (Engine Off)

Low Battery Voltage (Engine Running)

High Transmission Temperature

Low Engine Oil Pressure

High Engine Coolant Temperature

Out of Water (visual alarm only)

No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

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

The pressure governor control module shall be programmed at installation for a specific engine.

INTAKE RELIEF

There shall be an Elkhart Model 40 intake relief valve installed on the intake side of the pump. The surplus water shall be discharged away from the pump operator and terminate with Male NST hose thread. System is field adjustable.

6" PUMP INLET

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

2.5" LEFT SIDE INLET

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

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

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

THREAD TERMINATION

The above shall terminate with National Standard Threads.

6" PUMP INLET

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

2.5" RIGHT SIDE INLET

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

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

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

THREAD TERMINATION

The above shall terminate with National Standard Threads.

DISCHARGE #1 - LEFT

The discharge in position #1 on the left side of the apparatus shall include the following features.

A 2.5" discharge shall be provided on the left side of the apparatus.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by a rack and sector with an Innovative Controls push pull handle located at the operator's panel.

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

DISCHARGE TERMINATION

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

THREAD TERMINATION

The above shall terminate with National Standard Threads.

DISCHARGE #2 - LEFT

The discharge in position #2 on the left side of the apparatus shall include the following features.

A 2.5" discharge shall be provided on the left side of the apparatus.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by a rack and sector with an Innovative Controls push pull handle located at the operator's panel.

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

DISCHARGE TERMINATION

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

THREAD TERMINATION

The above shall terminate with National Standard Threads.

DISCHARGE #3 - RIGHT

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

A 3" discharge shall be provided on the right side of the apparatus.
ADAPTER There will be a 3" to 5" Stortz with cap and 30 degree elbow.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-

locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

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

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

DISCHARGE TERMINATION

The discharge valve shall be equipped with a straight termination that is capped and chained.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

DISCHARGE ADAPTER

One (1) Task Force Tips 3" NST female x 5" Storz 30-degree adapter with 5" Storz cap and chain shall be provided for the above discharge.

DISCHARGE #4 - RIGHT

The discharge in position #4 on the right side of the apparatus shall include the following features.

A 2.5" discharge shall be provided on the right side of the apparatus.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Innovative Controls push/pull handle located at the operator's panel.

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

DISCHARGE TERMINATION

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

THREAD TERMINATION

The above shall terminate with National Standard Threads.

FRONT BUMPER DISCHARGE

A 1.5" discharge with 2" plumbing shall be provided at the officer's side front bumper. The valve shall be remote controlled at the pump panel.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Akron model 9323 electric controller located at the operator's panel. Valve position will be displayed on the LCD screen incorporated into the control head.

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

CROSSLAYS

Three (3) crosslay hose beds shall be supplied as follows:

One crosslay with 2.5" piping and 2.5" swivel with the capacity of 200' of 2.5" hose.

Two crosslays with 2" piping and 1.5" swivel with the capacity of 200' of 1.75" hose each.

All crosslays shall be equipped with 2" valves. The valves shall be the "drop-out" style and controlled from the pump panel with electric actuators.

VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

VALVE ACTUATOR

The valve shall be controlled by an Akron model 9323 electric controller located at the operator's panel. Valve position will be displayed on the LCD screen incorporated into the control head.

2.5" PRESSURE GAUGE

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pressure gauge shall be provided. The gauge shall be 2.5" in diameter with a white face, and black enhanced lettering. The gauge shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from – 40°F to +160°F. The gauge shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauge shall display a range from 0 to 400 psi with enhanced black markings on a white dial. IC Part Number 3101747-00-01.

THREAD TERMINATION

The above shall terminate with National Standard Threads.

CROSSLAY COVER

A vinyl crosslay cover shall be provided to enclose the top and sides of the crosslays, capable of being secured at the top and sides.

COVER FASTENERS

The crosslay cover shall be secured with metal snaps.

MASTER PUMP DRAIN

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

DRAIN VALVES LIFT UP STYLE

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

WATERWAY VALVE AND ACTUATOR

The waterway valve shall be an Akron 4" electric valve. The valve shall be controlled by an Akron Navigator 9335 electric actuator located at the operator's panel. The actuator shall be connected to both a flow sensor and a pressure sensor. The actuator shall display pressure, flow, and valve position on a full color LDC display.

WATERWAY DRAIN VALVE

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

FOAM SYSTEM

The apparatus shall be equipped with a FoamPro 2001 electric, fully automatic, variable speed, discharge side foam proportioning system. The system shall be capable of handling class A and most types of class B foam. The system shall be equipped with a 12-volt electric motor driven positive displacement foam concentrate pump, rated up to 2.6 gpm, with operating pressures up to 400 psi.

A digital computer control display shall be provided and display shall include the following functions:

- Push-button control of foam proportioning foam
- Current flow-per-minute of water
- Volume of water discharged
- Flow rate simulation
- Set-up and diagnostic functions
- "Low Concentrate" warning light
- "No Concentrate" warning light

FOAM SYSTEM WARRANTY

The FoamPro foam system shall have a two (2) year manufacturer's warranty.

FOAM TANK

There shall be a 20-gallon foam tank. The tank shall be part of the main booster tank. There shall be a 3" PVC fill tower and cap and a tank vent. There shall be a 1-1/2" flanged outlet and drain valve at the lowest point in the tank.

FOAM FLUSH

A manually operated quarter turn flush valve shall be provided and installed.

PUMP AND GAUGE PANELS

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

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

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

PANEL FINISH

The panels shall be constructed of brushed stainless steel for maximum protection against abrasion caused during normal use.

ESCUTCHEON PLATES

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

COLOR CODING

Each discharge valve control, outlet, and corresponding line gauge shall be color-coded. The color-coding shall be (as applicable):

#1 Discharge - Yellow

#2 Discharge – White

#3 Discharge – Navy Blue

#4 Discharge - Black

#5 Discharge - Green

#1 Pre-Connect - Orange

#2 Pre-Connect - Red

#3 Pre-Connect - Brown

#4 Pre-Connect - Magenta

Front Bumper Line - Turquoise

Large Diameter Discharge – Yellow with White Border

Left Hose Bed Pre-Connect - Tan

Right Hose Bed Pre-Connect - Lavender

Left Rear Discharge - Olive

Right Rear Discharge – Light Blue

Deck Gun – Silver

Inlets – Burgundy

Tank Fill - Lime Green

Tank to Pump – Burgundy

PUMP MODULE FRAMEWORK

The pump module framework shall not be painted.

PLUMBING FINISH

The plumbing and valves shall be natural finish.

RUNNING BOARD TROUGH

A floating trough shall be provided in the officer's side running board to hold a 15-foot length of 5" hose.

PUMP PANEL LIGHTING, LED

The driver's side pump panel controls and gauges shall be illuminated by a full width white TecNiq E44 LED light strip, controlled at the pump panel.

PUMP PANEL LIGHTING, LED

The officer's side pump panel shall be illuminated by a full width white TecNiq E44 LED light strip, controlled at the pump panel.

PUMP PANEL GAUGES AND CONTROLS

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

- Two (2) certified laboratory test gauge outlets.
- Pump primer control.
- Master drain control and additional drains as needed.
- Tank-fill and pump cooler valve controls.
- Tank to pump valve control.
- Pump capacity rating plate.
- All discharge controls.
- Two (2) master pump gauges.
- Gauges on all 1-1/2" and larger discharge lines.

PRIMING SYSTEM

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

(1) PRIMER BUTTON - MAIN SUCTION

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

COMPRESSION FITTINGS ON AIR SYSTEM

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

PUMP OVERHEAT INDICATOR

An Innovative Controls pump overheat alarm, audible and visual, shall be provided.

GAUGE HEATER

An Innovative Controls gauge heater with four (4) heat tapes shall be provided.

An additional heat tape shall be provided.

PUMP COMPARTMENT HEATER

A heater shall be provided to heat the in the pump compartment. The heater shall use water from the water manifold located on the right side of the engine. The manifold shall have a dedicated valve to turn the water on or off for maintenance or during warm weather conditions. Hot air radiated from the unit shall be distributed through the pump compartment by a 12-volt fan activated by a switch located on the pump operator's panel.

AIR HORN BUTTON

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

4" MASTER GAUGES

An Innovative Controls TC Series glass-filled nylon case, a clear scratch-resistant lens, and a highly-polished stainless steel bezel pump pressure and vacuum gauges shall be provided. The gauges shall be 4" in diameter with a white face, and black enhanced lettering. The gauges shall be fully-filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F. The gauges shall also include a KEM-X Socket Saver diaphragm in the stem to eliminate freeze-up and contain a low temperature instrument oil that fills and protects the socket and bourdon tube. The gauges shall display a range from -30 to 400 psi with enhanced black markings on a white dial.

WATER TANK GAUGE

An Innovative Controls SL-14 weather proof encapsulated (14) super bright LED light indicator shall monitor the water tank level and shall be mounted on the pump operator's panel. The fourteen LED lights are arranged in a "V" pattern for easy identification of liquid level. When the liquid level reaches less than a 1/4 full the refill level begins to flash. The tank-sensing probe shall be chemical resistant PVC with stainless steel sensing wires. The cover plate shall be aluminum sub-plate, black background and blue graphics, with an outdoor exposure rated composite overlay.

WATER TANK GAUGES

Two (2) Whelen PSTANK2 LED strip lights shall be provided. The lights shall be steady burn green, blue, amber and flashing red to indicate water level in the booster tank.

FOAM TANK GAUGE

An Innovative Controls SL-14 weather proof encapsulated (14) super bright LED light indicator shall monitor the foam tank level and shall be mounted on the pump operator's panel. The fourteen LED lights are arranged in a "V" pattern for easy identification of liquid level. When the liquid level reaches less than a 1/4 full the refill level begins to flash. The tank-sensing probe shall be chemical resistant PVC with stainless steel sensing wires. The cover plate shall be aluminum sub-plate, black background and red graphics, with an outdoor exposure rated composite overlay.

WATER TANK

The tank shall be constructed of PT3™ polypropylene material by United Plastic Fabricating (UPF). This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1" as required. Internal baffles are generally 3/8" in thickness.

The tank shall be of a specific configuration and shall be designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank shall be fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" PT3™ polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions shall interlock with one another and completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™.

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

The tank cover shall be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall accommodate the necessary lifting hardware.

There shall be one (1) sump constructed of a minimum of 1/2" PT3™ polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" N.P.T. threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

There shall be two (2) standard tank outlets: one for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and, one for tank fill line, which shall be sized according to the

NFPA minimum size chart for booster tanks. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 G.P.M. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

The UPF Poly-Tank® III shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4" x 1". The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

The tank shall be completely removable without disturbing or dismantling the apparatus structure.

The tank shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. The tank shall be delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification. A center of gravity and weight calculation for both empty and full conditions shall be required with each tank.

The tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from UPF. In applications where the tank will be subject to severe conditions, the tank may have a warranty unique to the application that is clearly defined for each such application.

WATER TANK SIZE

The water tank shall have a capacity of 480 U.S. gallons.

WATER TANK WARRANTY

The UPF water tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from UPF. In applications where the tank will be subject to severe conditions, the tank may have a warranty unique to the application that is clearly defined for each such application.

AERIAL BODY SUB-FRAME

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

APPARATUS BODY

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

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

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

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

Each compartment shall be properly vented with louvers.

REAR COMPARTMENT BELOW HOSE BED

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

COMPARTMENTATION LEFT SIDE

There shall be a compartment below the turntable as follows:

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

There shall be two compartments above the rear wheels:

L2- Approximately 41-5/8" wide x 27-1/2" high x 12" deep. This compartment shall have a pan type lift up door equipped with "D" ring latch and gas door stay.

L3- Approximately 58" wide x 27-1/2" high x 12" deep. This compartment shall have a pan type lift up door equipped with "D" ring latch and gas door stay.

There shall be three compartments behind the rear wheels:

L4- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep.

L5- Approximately 22" wide x 48-1/2" high x 26-1/2" deep.

L6- Approximately 34-3/4" wide x 40-1/8" high x 26-1/2" deep.

COMPARTMENTATION RIGHT SIDE

There shall be a compartment below the turntable as follows:

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

There shall be two compartments above the rear wheels:

R2- Approximately 41-5/8" wide x 27-1/2" high x 26-1/2" deep. This compartment shall have a pan type lift up door equipped with "D" ring latch and gas door stay.

R3- Approximately 58" wide x 27-1/2" high x 26-1/2" deep. This compartment shall have a pan type lift up door equipped with "D" ring latch and gas door stay.

There shall be three compartments behind the rear wheels:

R4- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep.

R5- Approximately 45-3/4" wide x 56-1/2" high x 26-1/2" deep.

R6- Approximately 34-3/4" wide x 40-1/8" high x 26-1/2" deep.

COMPARTMENT INTERIOR - L1

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

No compartment options were selected for L1.

COMPARTMENT INTERIOR - L2

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

No compartment options were selected for L2.

COMPARTMENT INTERIOR - L3

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

ALUMINUM TOOL MOUNTING PLATE

A 3/16" aluminum plate shall be provided in the compartment for mounting tools.

COMPARTMENT INTERIOR - L4

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

ADJUSTABLE SHELF

There shall be two (2) adjustable shelves provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

600# SLIDE-MASTER TRAY

There shall be a Slide-Master pullout drawer provided and installed. The drawer shall have a distributed load capacity of 600 lbs. and be capable of extending 100% of its depth. The tray shall be fabricated of .188" aluminum plate and have a formed lip that measures 2".

COMPARTMENT INTERIOR - L5

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

ADJUSTABLE VERTICAL SLIDE-OUT PANEL

There shall be an adjustable vertical slide-out tool board with a 250 lb. capacity supplied and mounted on unistrut tracks. Extra compartment lights shall be provided and located as needed to properly illuminate the compartment.

COMPARTMENT INTERIOR - L6

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

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

600# SLIDE-MASTER TRAY

There shall be a Slide-Master pullout drawer provided and installed. The drawer shall have a distributed load capacity of 600 lbs. and be capable of extending 100% of its depth. The tray shall be fabricated of .188" aluminum plate and have a formed lip that measures 2".

COMPARTMENT INTERIOR - R1

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

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

COMPARTMENT INTERIOR - R2

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

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

COMPARTMENT INTERIOR - R3

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

250# ADJUSTABLE SWING-OUT TOOL BOARD

A swing-out tool board with 250# rating shall be provided and mounted in a compartment. The tool board shall be constructed of a 1" square aluminum tubing framework with a 3/16" aluminum mounting surface on each side. The tool board shall be adjustable within the depth of the compartment. It shall be held in the open position with a pneumatic strut and in the closed position with a positive latching mechanism.

ALUMINUM TOOL MOUNTING PLATE

A 3/16" aluminum plate shall be provided in the compartment for mounting tools.

COMPARTMENT INTERIOR - R4

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

ADJUSTABLE SHELF

There shall be two (2) adjustable shelves provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

COMPARTMENT DIVIDER

There shall be a vertical divider/partition provided in a compartment as specified. The divider shall be constructed of .188" thick smooth aluminum plate. The top and bottom of the divider shall have a formed flange bolted to the interior of the compartment.

600# SLIDE-MASTER TRAY

There shall be a Slide-Master pullout drawer provided and installed. The drawer shall have a distributed load capacity of 600 lbs. and be capable of extending 100% of its depth. The tray shall be fabricated of .188" aluminum plate and have a formed lip that measures 2".

COMPARTMENT INTERIOR - R5

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

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

600# SLIDE-MASTER TRAY

There shall be a Slide-Master pullout drawer provided and installed. The drawer shall have a distributed load capacity of 600 lbs. and be capable of extending 100% of its depth. The tray shall be fabricated of .188" aluminum plate and have a formed lip that measures 2".

COMPARTMENT INTERIOR - R6

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

ADJUSTABLE SHELF

There shall be an adjustable shelf provided and installed in the compartment. The shelf shall be fabricated of .188" aluminum plate.

COMPARTMENT INTERIOR - A1

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

SLIDE-OUT TRAY

There shall be a slide-out tray provided and installed in the rear compartment. The tray shall have a distributed load capacity of 500 lbs. utilizing UHMW slides and shall be capable of extending 75% of its depth. The tray shall be fabricated of .188" aluminum plate and measure approximately 85" deep x 24" wide with 8.75" sides and a 2.75" front lip.

UNISTRUT

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

ROLL-UP COMPARTMENT DOORS

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

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

PAINTED ROLL-UP DOORS

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

ROLL-UP DOOR WARRANTY

The Amdor roll-up doors shall have a three (3) year manufacturer's warranty. Exceptions may apply to wet paint adhesion. Consult the manufacturer's warranty for complete details.

ROLL UP DOOR DRIP PAN/SPLASHGUARD

The specified roll-up door(s) shall be equipped with a drip pan with built in splashguard. The drip pan shall attach to the pennant plate with spring pins to allow for easy removal and cleaning. The construction of the pan shall be of a corrosion resistant material. The drip pan shall have a drainage tube that shall route water that collects inside the pan to the exterior of the compartment.

COMPARTMENT LIGHTING

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

HOSE BED

The rear hose bed shall be completely wide open to allow for quick and easy loading and unloading of hose thus preventing hose and hose couplings from being caught or tangled.

Rear opening of the rear hose bed shall be a minimum of 19" wide x 30" high x 150" deep and shall be no more than 44" from the ground. Any rear hose bed opening(s) requiring hose chutes shall not be acceptable. A side stacker hose bed is not acceptable.

Hose bed flooring shall be removable slatted aluminum.

HOSE BED COVER

There shall be a nylon/vinyl hose bed cover for the main hose bed. The cover shall be capable of being securely fastened at the front, sides and rear.

REAR HOSE BED COVER

A smooth aluminum door shall be provided and installed on the rear of the hose bed only prevent the hose from unintentional deployment.

COVER FASTENERS

The hose bed cover shall be secured with metal snaps.

SIDE HOSEBED LIGHTING

TecNiq E44 LED light strips shall be provided on the interior hosebed walls, one each side.

BODY HANDRAILS

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

The rails shall be located in the following areas:

(Note: These are in addition to those previously mentioned in the cab section):

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

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

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

STEPS

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

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

RUB RAILS

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

ALUMINUM TREADPLATE

All load bearing aluminum treadplate running boards shall be .155 thick bright annealed with a serrated embossed finish. Running boards and rear step edges shall be flanged down for added strength. Running boards shall also be flanged up to form kick plates. All non-load bearing aluminum shall be .125" thick bright annealed finish. In areas where aluminum treadplate shall function as a load-bearing surface, there shall be a heavy steel sub-structure. This structure shall consist of 3" channel and 1-1/2" angle welded support. This

shall assure that there shall be no flexing or cracking of running boards. The aluminum shall be insulated from the steel by closed cell foam body barrier material.

Treadplate locations:

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

WHEEL LINERS

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

SCBA CYLINDER COMPARTMENTS

There shall be seven (7) spare breathing air cylinder compartments recessed in the rear fender wells, three (3) left and four (4) right. The interior compartment shall be constructed of a high-density polyethylene plastic.

DOORS WILL BE PAINTED PRIMARY JOB COLOR

DOOR FINISH

The single or double SCBA compartments shall have a brushed stainless door equipped with a weather resistant flush fitting thumb latch. The interior of the door shall incorporate a rubber seal to keep the compartment free of road debris and moisture.

FENDER PANELS

The rear side fenders shall be removable smooth stainless panels, painted truck color.

GROUND LADDERS

The following ground ladders will be installed enclosed in a chute in the rear of the apparatus.

The following ladders will be provided and installed as described.

35' in chute

24' in chute

16' Roof Double Hooks on boom.

16' Roof Double Hooks in ladder chute.

Two (2) 10' Attic Ladder on truck and one in boom.

LADDER

One (1) Little Giant ladder, Model 17 shall be provided with a range of 9' to 15'. The following location will be determined at pre construction.

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

LADDER ENCLOSURE

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

LADDER CHUTE DOOR

A smooth aluminum door shall enclose the ladders at the rear.

LICENSE PLATE BRACKET

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

BODY ELECTRIC SYSTEM

All body electrical wiring in the chassis will be XLP cross link-insulated type. Wiring is to be color-coded and include function codes every three (3) inches. Wiring harnesses will be routed in protective, heat resistant loom, securely and neatly installed. Two power distribution centers will be provided in central locations for greater accessibility. The power distribution centers contain automatic thermal self-resetting breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays are utilized in circuits which amp loads are substantially lower than the

respective component rating thus ensuring long component life. Power distribution centers will be composed of a system of interlocking plastic modules for ease in custom construction. The power distribution centers are function oriented. The first is to control major truck function and the second controls overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers also have accessory breakers and relays for future installations. All harnesses and power distribution centers will be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces will be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points will be mounted in accessible locations. Complete chassis wiring schematics will be supplied with the apparatus.

The wiring harness contained on the chassis shall be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for which the circuit is protected without exceeding 10% voltage drop across the circuit. The wiring shall be uniquely identified by color code or circuit function code, labeled at a minimum of every three (3) inches. The identification of the wiring shall be referenced on a wiring diagram. All wires conform to SAEJ1127 (Battery Cable), SAEJ1128 (Low Tension Primary Cable), SAEJ1560 (Low Tension Thin Wall Primary Cable).

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

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

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

BACK-UP ALARM

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

STOP/TAIL/TURN/REVERSE LIGHTS

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

LED ICC/MARKER LIGHTS

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

FLEXIBLE MARKER LIGHTS

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

STEP LIGHTS

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

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

GROUND LIGHTING

The apparatus shall be equipped with lighting capable of illumination to meet NFPA requirements. Lighting shall be provided at areas under the driver and crew riding area exits and shall be automatically activated when the exit doors are opened. The ground lights shall be TecNiq T44 LED. Lighting required in other areas such as work areas, steps and walkways shall be activated when the parking brake is applied, provided the ICC lights are on.

GROUND LIGHTS INDEPENDENT SWITCH

A switch shall be provided in the cab to activate/deactivate the undercarriage lighting.

OPTICAL WARNING SYSTEM

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

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

UPPER LEVEL WARNING DEVICES

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

Zone A (front) shall have one (1) Whelen Freedom IV 72" Model F4N7QLED light bar, with fourteen (14) LED modules. The light bar shall have two (2) end red LED modules, two (2) corner red LED modules, eight (8) forward-facing red LED modules and two (2) forward-facing white LED modules. The light bar shall have all clear outer lenses. The light bar shall be installed on the cab roof as far forward as possible with two (2) MK8H 5" cast aluminum risers.

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

Zone C (rear) shall have two (2) Whelen Model L31 LED beacons installed one (1) each side on the upper rear of the apparatus.

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

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

LOWER LEVEL WARNING DEVICES

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

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

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

Zone B (officer's side) shall have four (4) Whelen 600 series model 60*02F*R Super LED warning lights.

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

Zone C (rear) shall have two (2) Whelen 600 series model 60*02F*R Super LED warning lights installed one (1) each side on the lower rear of the apparatus.

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

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

ADDITIONAL WARNING LIGHTS

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

SURFACE MOUNTED LED SCENE LIGHT

Two (2) Fire Research Spectra SPA260-Q20 surface mounted LED scene light shall be provided. The lamp head shall operate at 12 volts DC, draw 14 amps, and generate 20,000 lumens of light. The light shall be mounted at a fire department specified location and shall be controlled from a switch in the cab.

SURFACE MOUNTED LED SCENE LIGHT

Two (2) Fire Research Spectra SPA900-Q70 surface mounted LED scene light shall be provided. The lamp head shall operate at 12 volts DC, draw 6 amps, and generate 7,000 lumens of light. The light shall be mounted at a fire department specified location and shall be controlled from a switch in the cab.

BROW MOUNTED LED SCENE LIGHT

One (1) FireTech 72" 3-piece FT-B-72-ML-3PKIT-* brow mounted LED scene lights shall be provided. The lamp head shall operate at 12 volts DC, draw 23.8 amps, and generate over 30,000 lumens of light. The light shall be mounted at the front brow of the cab and shall be controlled from a switch in the cab. All custom mounting brackets shall be supplied by OEM.

SCENE LIGHTS

Two (2) FireTech Mini-Brow FT-MB-2.27-FT-* scene light shall be provided. The fixture shall have two (2) rows of 27 LEDs (54 LEDs total). The overall length should be 30". The fixture shall operate from 9-32v DC, shall draw 22.5 amps @ 12v DC, and shall produce 38,016 equivalent lumens. The fixture will have a combination of spot and flood optics and shall be wired to a switch above the driver. The light shall be

mounted using an adjustable captive rail with detachable mounting feet. The device manufacturer shall warrant the fixture against defects in materials or workmanship for the life of the apparatus.

There will be two (2) located centered on the left and right side of the body.

ADDITIONAL 3-WAY SWITCH

An additional 3-way switch shall be provided per the customer's location.

GENERATOR

The apparatus shall be equipped with a complete electrical power generation system. A Smart Power hydraulic 6.0KW generator shall be provided and installed. The generator and wiring shall conform to present National Electric Codes as outlined in the National Fire Protection Association Standards.

The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output. The generator shall be powered by a transmission power take off unit, through a hydraulic pump and motor. The generator shall be operable anytime that the apparatus engine is running and meeting the minimum range of 950 RPM's.

GENERATOR WARRANTY

The Smart Power generator shall have a five (5) year manufacturer's warranty.

BREAKER BOX

A circuit breaker box shall be provided with twelve (12) spaces for breakers which shall be provided as needed. All wiring shall be installed in liquid tight conduit.

BREAKER PANEL

The breaker panel shall be located in the L2 Compartment and shall meet all requirements set forth by the National Electrical Code and NFPA guidelines.

120-VOLT OUTLET

120-volt outlet with weatherproof cover shall be provided. All 120 volt wiring shall be installed in liquid tight conduit.

AUTOMATIC TRANSFER SWITCH

A Progressive Dynamics PD5100 30 amp automatic transfer switch shall be installed to automatically switch on board loads from shoreline power to generator power.

CORD REEL

There shall be a Hannay Model ECR1616-17-18 electric rewind cable reel furnished and mounted in a compartment. The reel shall come complete with 150 feet of 10/3 Seoprene Water-resistant (SOW) yellow jacketed cable. A Hannay Type "C" roller assembly and HS-3 cable stop ball shall be provided.

REEL MOUNTING

The reel shall be mounted in the officer's side area, rear of the outrigger compartment. The specific mounting location shall be determined at the preconstruction conference.

FOUR WAY RECEPTACLE

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

SURFACE MOUNTED LED SCENE LIGHT

One (1) Fire Research Spectra SPA260-J20 surface mounted LED scene light shall be provided. The lamp head shall operate at 240 volts AC, draw 1 amp, and generate 20,000 lumens of light. The light shall be mounted on the front face of the aerial platform and shall be controlled from a switch inside the platform.

SURFACE MOUNTED LED SCENE LIGHT

One (1) Fire Research Spectra SPA260-J20 surface mounted LED scene light shall be provided. The lamp head shall operate at 240 volts AC, draw 1 amp, and generate 20,000 lumens of light. The light shall be mounted under the aerial platform and shall be controlled from a switch inside the platform.

TELESCOPIC LED SCENE LIGHT

One (1) Fire Research Spectra SPA547-J20-ON telescopic LED scene light shall be provided. The lamp head shall operate at 240 volts AC, draw 1 amp, and generate 20,000 lumens of light. The light shall be installed on the rear of the aerial platform and shall be controlled from a switch located on the lamp head.

ADDITIONAL 3-WAY SWITCH

An additional 3-way switch shall be provided per the customer's location.

MID-MOUNT AERIAL

AERIAL LOWER MAIN FRAME ASSEMBLY

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

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

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

TURNTABLE BEARING

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

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

UPPER TURNTABLE

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

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

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

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

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

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

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

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

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

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

show correct alignment for bedding of the ladder from the turntable control station and the platform station.

LEFT LOWER TURNTABLE ACCESS LADDER

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

LOWER FIXED STEP

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

LEFT UPPER TURNTABLE ACCESS LADDER

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

RIGHT UPPER TURNTABLE ACCESS FOLDING STEPS

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

INTERLOCK

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

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

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

ROTATION LIMITING SYSTEM

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

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

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

SMART BOOM WARNING SYSTEM

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

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

ROTATION LIMITING ALARM

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

HYDRAULIC SYSTEM

A flange mounted 30 GPM hydraulic pump shall be driven by a power take off unit that is connected to the chassis transmission to provide the power required for operating the aerial. The hydraulic system shall have a minimum hydraulic reservoir for 65 gallons of special hydraulic fluid. The hydraulic reservoir shall be located at the left side of the lower mainframe assembly. The hydraulic fluid must be discharged through a fine mesh stainless steel strainer. Within the system, pilot operated check valves shall be incorporated so

that all valves hold in their respective function(s). A ten (10) micron return filter of 40 gpm capacity, with replaceable cartridge, shall be provided.

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

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

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

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

AUXILIARY HYDRAULIC POWER

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

CONTROL PEDESTAL

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

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

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

electrical controls mounted in the platform for aerial boom operation. The lower pedestal control station shall be situated so the operator can easily observe the platform while operating the controls.

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

- a] Automatic panel light to illuminate controls for nighttime operation
- b] On/Off control switch for boom lights (one light mounted on each side of the boom)
- c] Three-way switching with the Platform for optional ladder lighting
- d] Three-way switching with the Platform or on/off control switch for other optional lighting
- e] Three-way switching with the Platform for the rear bucket scene light
- f] On/Off control foot switch for high speed control of the hydraulic system
- g] Three-way switching with the Platform for "creep mode" for aerial control functions and indicator LED
- h] Illuminated emergency push button to deactivate the platform controls with the turntable electric controls remaining operable.
- i] Low breathing air system pressure warning LED indicator
- j] Pedestal control power LED indicator
- k] Platform control power Led indicator
- l] Intercom communication system
- m] Tag displaying functions for each pedestal boom operation
- n] Tag displaying rated load capacity for the platform
- o] LED indicators for cab and body damage (crush zones), jacks status, rungs aligned, tower aligned, rotation interlock, light tower (if truck is equipped with a light tower)
- p] Audible alarm for cab or body damage (crush zones), rotation interlock stop (when short-jacked) and low breathing air
- q] Interlock override button

INCLINOMETER

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

BOOM ASSEMBLY

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

The five sections produce a compact retracted length, allowing the platform to be positioned in tight or confined spaces at lower degrees of elevation. All sections shall be of the lightweight open lattice, non-crossing enclosed box design of truss type construction to obtain optimal stability at full horizontal reach. The telescoping sections shall be constructed from heat-treated 6061-T6 aluminum alloy material fastened by Aircraft type Huck bolts. There shall be no welding on the boom so as not to lower the yield strength of the material and cause torsional fracture, grain distortions and unequal conductivity. There shall be a minimum of 500 Aircraft type Huck bolts per section of boom. The base section of the boom shall have a

section modulus of 468 in.³ and a resisting bending moment of 16,000,000 in. lb. The base section shall also consist of two heavy-duty steel side plates; one mounted each side of the boom. The steel side plates shall be Huck bolted into place and shall function to tie the boom, turntable, and lift cylinders together. There shall be trailing beams attached to the side plates that shall function to position and anchor lift cylinders into place and to distribute shock loads imposed by water hammer or hose breakage.

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

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

AERIAL SPOT LIGHTS

Two (2) FireTech FT-WL-X-5-S-B LED spot lights shall be provided. One (1) shall be mounted on each side of the aerial base section to illuminate the aerial device for night time operation. The lights shall be activated by a switch at the pedestal.

AERIAL PLATFORM DEVICE

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

CLIMBING LADDER

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

LOAD CAPACITIES

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

35 MPH WIND CONDITION (DRY)

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

35 MPH WIND CONDITION (WET)

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

LADDER LIGHTING SYSTEM

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

LIFTING CYLINDERS

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

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

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

EXTENSION AND RETRACTION

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

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

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

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

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

WATER SYSTEM TO THE PLATFORM

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

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

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

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

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

AERIAL WATERWAY WARRANTY

The aerial waterway shall have a ten (10) year warranty provided by Amity Industries. The swivel is excluded in this warranty. See manufacturer's warranty for details.

OUTRIGGER GROUND JACKS WITH INTEGRATED JACK PADS

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

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

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

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

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

- a] on/off switch for auxiliary hydraulic motor
- b] high speed control for the hydraulic system
- c] on/off switch for electrical power to pedestal and platform.

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

The extendable outrigger stabilizers, when fully extended, shall have a spread of 20 feet. The stabilizer sections shall have a minimum overlap of 43" for safety and stability. The stabilizers shall be operated independently or simultaneously and may be positioned to accommodate obstructions such as curbs, pavement depressions, parked vehicles, or any other hindrance. The extendable portion of the outrigger stabilizers and the support in the mainframe shall be constructed of reinforced structural tubing, Type A500

Grade B or equivalent. Poly wear pads shall be installed between inner and outer tubes. The extendable portion of the outrigger shall ride on UHMW (ultra high molecular weight) slideblocks.

Each mid-ship outrigger shall be incorporated with a integrated jack foot that measures 36.75" x 12.5" x .5" and shall be made from 110K PSI Domex Steel.

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

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

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

OUTRIGGERS, PINLESS

Each outrigger shall incorporate pressure and proximity sensors to display outrigger position at the operators panel during initial setup or final stow position.

AERIAL JACKS ALARM

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

OUTRIGGER SPOT LIGHTS

Two (2) FireTech FT-LZC2-4-B Laser Cannon lights shall be provided. One shall be mounted on each side on the apparatus to illuminate the area of the outriggers at full extension. The lights shall be activated by a switch inside the cab near the driver or when the parking brake is activated.

OUTRIGGER DISPLAY PANEL COVER

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

OFFICER'S SIDE OUTRIGGER COMPARTMENT

A compartment shall be located between the officer's side outrigger and pump panel. The opening shall have 4 rollers to allow easy deployment of the cord from the reel, and be covered with a stainless steel single hinged door with push button locks.

OPERATIONAL TEST

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

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

AERIAL DEVICE TEST & CERTIFICATION

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

SECONDARY CAMERA

There will be a monitor located in the hydraulic jack compartment and the camera placed to view jack placement.

PLATFORM AND EQUIPMENT

The platform shall be constructed of heat reflecting reinforced aluminum to protect occupants against flash fires and freezing weather. The platform shall have a minimum floor area of 19.5 sq. ft. and shall be provided with closed sides, 42" high all around. The platform shall be completely enclosed along the floorboard to protect occupants. There shall be four doors in the platform, two in the front and two in the rear, each of which shall be provided with a suitable safety latch. All doors shall latch and open inward to avoid accidentally falling from the platform.

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

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

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

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

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

PLATFORM BOOM OR SECTION BED LOCK

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

LOAD LIMITATIONS

Load instruction plates shall be located at the turntable pedestal control station and the platform control station indicating the safe load of the platform. The platform shall carry the rated load capacity indicated in

the following manner: raise, extend, rotate, retract and lower without exceeding the hydraulic pressures prescribed by the manufacturer. Extensions, retraction, and elevation functions can be operated simultaneously.

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

DOOR SKINS, FORWARD

From the stowed position, each forward facing exterior door skin shall be covered with diamondplate material. Each door skin shall be attached with rivets.

DOOR SKINS, REARWARD

From the stowed position, each rearward facing exterior door skin shall be covered with diamondplate material. Each door skin shall be attached with rivets.

PLATFORM ACCESS LADDER

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

PLATFORM CONTROLS FOR BOOM OPERATION

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

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

- a] On/off control switch for light to illuminate controls for nighttime operation.
- b] Foot operated switch for high-speed control of the hydraulic system.
- c] A button to activate "creep mode" of the aerial operation.
- d] Slave intercom station allowing "hands free" operation of the intercom.
- e] A "rungs aligned for climbing" for all high-handrail aerial ladder platforms.

- f] On/Off control for Platform Control Power
- g] Three-way switching with the Pedestal for optional ladder lighting
- h] Three-way switching with the Pedestal or on/off control switch for other optional lighting
- i] Three-way switching with the Pedestal for the rear bucket scene light
- j] On/Off control foot switch for high speed control of the hydraulic system
- k] Three-way switching with the Platform for “creep mode” for aerial control functions and indicator LED
- l] Low breathing air system pressure warning LED indicator
- m] LED indicators for cab and body damage (crush zones), jacks status, rungs aligned, tower aligned, rotation interlock, light tower (if truck is equipped with a light tower)
- n] Audible alarm for cab or body damage (crush zones), rotation interlock stop (when short-jacked) and low breathing air

INCLINOMETER

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

PLATFORM CONTROL COVER

A diamondplate cover shall be provided over the control panel in the aerial platform. The cover shall be secured with a hinge at the top and latched at the bottom.

LIGHT GUIDE RODS

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

120 VOLT CIRCUIT TO PLATFORM

One (1) 15 amp electrical circuit utilizing 12 gauge 3 conductor electric cable shall be provided to the tip of the ladder. The circuit shall be wired from an enclosed terminal strip below the turntable through the collector ring assembly.

One (1) (NEMA-L5-20) female, three-prong, twist lock receptacle, with environmental cover, shall be located below the aerial platform controls.

WATER CURTAIN

A water spray system shall be provided beneath the platform and controlled by a hand operated valve inside the platform. The spray system shall provide 75 GPM of water in a 25 ft. diameter water curtain below the platform. As a safety factor, one or both turret nozzles may be directed straight down for large volumes of water directly below.

AUXILIARY YOKE OUTLETS

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

DRIVERS SIDE PLATFORM MONITOR

The driver's side platform monitor shall be an Akron Stream Master2 style 3482. The monitor shall be constructed of lightweight Pyrolite® and have a flow capacity of 1250 GPM. The monitor shall be directly attached to the platform supporting yoke with a 4" manually operated butterfly valve to control the flow of water. The monitor shall have a 4" flange with a 2.5" outlet and at full flow of the aerial waterway it will flow 1250 GPM. The monitor shall be controlled by two (2) model #6041 toggle station. One (1) shall be installed at the pedestal and one (1) shall be installed inside the aerial platform. A model #3600 hand held wireless controller shall be installed in a location specified by the fire department.

DRIVERS SIDE MONITOR NOZZLE

The driver's side monitor shall be equipped with an Akron style 5177 electric remote control nozzle with a flow rating of 250-1250 GPM.

OFFICER'S SIDE PLATFORM MONITOR

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

OFFICER'S SIDE MONITOR NOZZLE

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

INTERCOM

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

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

BREATHING AIR SYSTEM

A breathing air system to the platform shall be provided.

One 4500-psi DOT cylinder, with pressure regulator, relief valve, and low air warning alarm, shall be provided. The system shall terminate in the platform with a three place manifold, ready to accept the customer supplied air fittings.

All valves, pressure regulators and gauges shall be protected from accidental damage.

BREATHING MASK STORAGE

Storage shall be provided for breathing masks in the platform.

AIR BOTTLE REFILL

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

BREATHING AIR ALARM

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

BREATHING AIR TANK LOCATION

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

PARAPET LADDER

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

STOKES ARMS

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

STOKES STORAGE BOX

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

LIFTING EYE

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

CORROSION REDUCTION POLICY

The manufacturer shall have in place a formal corrosion reduction program and assembly procedures designed for reducing and eliminating the possibility of corrosion. It is understood that fire apparatus will operate in harsh environments. At the time of the bid the apparatus manufacturer shall show proof of a corrosion policy. Failure to submit this information could be grounds for rejection. If a formal policy is not in place explain in your bid how your firm will take the necessary steps for corrosion reduction. There will be no exception to this requirement.

In addition to a formal program the manufacture shall show proof of testing corrosion reduction processes to ASTM B117. A copy of recent test shall be included in the bid.

Frame Rails

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

Electro Plating

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

Fasteners

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

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

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

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

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

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

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

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

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

Barrier Tape

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

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

Gaskets

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

Mounting with Threadlocker coating shall be used.

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

Rollup Doors

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

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

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

Hinged Doors

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

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

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

Painting Steel

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

Mounting Emergency Lights and Options

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

Electrical Grounding

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

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

From the alternator to the right side frame rail

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

Aerials: from the hydraulic and pump module framework.

From the pump mount to the truck frame rail.

From the body module to the right side truck frame.

Proper grounding will help eliminate ground loop problems throughout the truck, reducing the possibility for electrolysis and corrosion to occur. Provide clean connection points on all ground connections, (remove paint where applicable), and spray or brush on electrical sealer as necessary.

When installing foam system pump wiring the power must come from a dedicated breaker to a power solenoid, and then to the power terminal provided by FoamLogix or FoamPro. Pay particular attention to the grounding detail for wire size and good grounding practice, including removing the paint at the point of ground attachment to the chassis. Keep the length of ground wire as short as practically possible.

SALT SPRAY TESTING

Salt spray test shall be used to confirm the relative resistance to corrosion of coated and uncoated metallic specimens, when exposed to a salt spray climate at an elevated temperature. Test specimens shall be placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0 ml/80cm²/hour, in a chamber temperature of +35C. This climate shall be maintained under constant steady state conditions.

Method

Salt fog testing shall be performed by placing samples in a test cabinet that has been designed in accordance with Paragraph 4 (Apparatus) of ASTM B117 and operated in accordance with Paragraph 10 (Conditions) of ASTM B117.

A 5% salt solution, prepared by dissolving sodium chloride into water that meets the requirements of ASTM D1193 Specification for Reagent Water, Type IV is supplied to the chamber. At the time the samples are placed into test, the cabinet should be pre-conditioned to the operating temperature of 35°C and fogging a 5% salt solution at the specified rate. The fog collection rate is determined by placing a minimum of two 80 sq. cm. funnels inserted into measuring cylinders graduated in ml. inside the chamber. One collection device shall be located nearest the nozzle and one in the farthest corner.

Orientation

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

Test durations

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

PAINTING

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

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

Utilizing the stainless steel body fabrication, the interior of all compartments, inside hose bed and surrounding areas adjacent to compartments doors shall remain a #4 brushed stainless steel finish. This practice shall eliminate the possibility of paint chipping, and electrolysis of aluminum, which can cause

corrosive action between dissimilar metals. The chassis, compartment doors, front and rear jack doors, and rear fender panels shall be painted the color indicated.

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

The following paint process shall be utilized:

Surface Preparation:

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

Substrate treatment:

1. Use a Metal Conditioner followed with a Conversion Coating product.

Priming:

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

Color Coat:

1. Apply polyurethane base coat 1-2 mil dft minimum.

Clear coat:

1. Apply polyurethane clear coat 2 mil dft minimum.

PAINT TWO TONE CAB

The cab exterior surfaces shall be two (2) colors.

METALLIC PAINT

The paint color shall be metallic.

CAB PAINT BREAK LOCATION

The paint break line shall be at the bottom of the side windows with a swoop design below the front windshield that is even with the top of the grille. Another swoop style design shall be located on either side of the front grille.

PAINTED FRAME AND LOWER AERIAL COMPONENTS

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

TURNTABLE PAINT

The turntable, side plates and lift cylinders shall be painted the same color as the apparatus.

TEXTURED FRAME RAIL COATING

The area of the frame rails where the pump module shall be located. Shall be applied with a textured coating that matches the frame rail color.

ADDITIONAL PAINT PACKAGE

The ladder sheave beams, extension cylinder and yoke shall be painted the same color as the apparatus.

BREATHING AIR CYLINDERS

The breathing air cylinders shall be painted the same color as the upper cab roof.

LETTERING

The lettering scheme shall match the City of Ashland current scheme on apparatus.

REFLECTIVE MATERIAL, CHEVRON STRIPING, INTERIOR CAB DOORS, 3M SCOTCHLITE

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

A 1/2" 22KT gold stripe with printed edges stripe shall be provided along the cab paint break.

STRIPING

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

"Z" STRIPE

The Scotchlite stripe shall be a one-piece "Z" type on the cab sides and continuing straight along each side of the apparatus.

An additional 1" Scotchlite stripe shall be provided above and below primary.

STRIPE EDGING

A 1/8" black edge shall be provided above and below Scotchlite stripe.

CHEVRON STRIPING, LADDER CHUTE DOOR, ORAFOL REFLEXITE

The ladder chute door shall have 6" red and yellow reflective Reflexite Chevron style striping affixed to it. The striping will be set in a manner to have the effect of an inverted "V" shape. The stripe will travel low to high from the outside to the inside.

CHEVRON STRIPING, REAR HOSEBED DOOR, ORAFOL REFLEXITE

The rear hosebed door shall have 6" red and yellow reflective Reflexite Chevron style striping affixed to it. The striping will be set in a manner to have the effect of an inverted "V" shape. The stripe will travel low to high from the outside to the inside.

CHEVRON STRIPING, REAR BODY OUTBOARD, ORAFOL REFLEXITE

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

CHEVRON STRIPING, FRONT BUMPER, ORAFOL REFLEXITE

The apparatus shall have 6" red and yellow reflective Orafol Reflexite Chevron style striping affixed to the front bumper. The striping will be set in a manner to have the effect of an inverted "V" shape.

BOOM SIGN

A boom sign, approximately 88" x 26", shall be provided on each side of the boom. There shall be a lettering scheme match to current fleet.

-

GRAPHICS WARRANTY

Graphics supplied by Associated Graphics, Inc. shall have a five (5) year warranty against defects in material. Additional terms and conditions may apply.

MISCELLANEOUS EQUIPMENT FURNISHED

1 pt. touch-up paint

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

WHEEL CHOCKS

Two (2) Ziamatic #SAC-44 folding wheel chocks shall be provided. The wheel chocks shall be stored in the rear ladder access area.

PIKE POLE STORAGE

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

OPERATION AND SERVICE MANUALS

Complete "Operation and Service" manuals shall be supplied on two (2) USB flash drives with the completed apparatus. Service manual instructions shall include service, maintenance and troubleshooting for major and minor components of the truck. The apparatus manufacturer shall supply part numbers for major components (i.e. Engine, Axles, Transmission, Pump, etc.). A table of contents, hydraulic, air brake and overall apparatus wiring schematics shall be included.

A video demonstration on the operation of the truck shall be supplied on the flash drive.

DELIVERY

The custom built fire apparatus shall be driven from the manufacturing facility to the community by a factory trained delivery engineer who shall thoroughly demonstrate the complete apparatus operation and maintenance to the fire department designated personnel.

WARRANTIES

The following warranties shall be supplied. See warranty documents for complete coverage details of each warranty provided.

The apparatus shall be warranted to be free from mechanical defects in workmanship for a period of one (1) year. The apparatus shall be covered for parts and labor costs associated with repairs for a period one (1) year.

Life-time warranty on the frame.

Ten (10) year cab structural warranty.

Ten (10) body structural warranty.

Ten (10) year warranty on paint.

Two (2) year aerial mechanical warranty.

Thirty (30) year aerial structural warranty.

The OEM warranties shall be applied for all major components.

MANUFACTURING & LOCATIONS

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

TURTLE TILE

There will be black turtle tile matting on all the compartment floors and trays.

EQUIPMENT PACKAGE

Equipment Allowance of \$85,000.00

Charlevoix City Council

All Other Actions and Requests

Title: Council Appointment

Date: April 21, 2025

Presented By: Janet Kalbfell-1st Ward Council Member

Background:

Council Member Kalbfell requested consideration of Dan Reed for appointment to the Zoning Board of Appeals as a member. Dan is currently serving on the ZBA as an alternate member.

Recommendation:

Motion to appoint XXX to the Zoning Board of Appeals for a term to expire on December 31, 2027.

Attachments:

1. Reed ZBA

Online Form Submittal: Volunteer Boards and Committees Application

From noreply@civicplus.com <noreply@civicplus.com>

Date Fri 2/28/2025 6:21 PM

To Sarah Dvoracek <clerk@charlevoixmi.gov>

Volunteer Boards and Committees Application

Thank you for your interest in serving on a volunteer board, commission or committee. The purpose of this form is to provide the Mayor and City Council members with some information about residents considered for appointment. Your application will be kept active for six months and you will be contacted if you are chosen to serve.

Committees and Boards to Apply For	Zoning Board of Appeals
------------------------------------	-------------------------

Name	Robert D Reed
------	---------------

Email Address	R.daniel.reed@sbcglobal.net
---------------	-----------------------------

Address	402 Sherman St
---------	----------------

Home Phone	5868548235
------------	------------

Cell Phone	<i>Field not completed.</i>
------------	-----------------------------

Are you a registered voter in the City?	Yes
---	-----

How long have you lived in the City?	Charlevoix
--------------------------------------	------------

Educational Background	BS Mechanical Engineering, MBA, BA Music Performance
------------------------	--

Professional Qualifications and / or Work Experience	27 years as a Mechanical, Manufacturing Engineer in aerospace and defense industry
--	--

Community Activities and / or Other Experience	Current Board member of Charlevoix Mariners, Former Board member and soccer coach with Charlevoix Youth Soccer 2018-2022, Volunteer with Dorothy Gerber String Program, Member of Christ Episcopal Church.
Have you served on a board / committee or held a civic position in the past?	Yes
If yes, please explain.	ZBA alternate for 2 years
Do you foresee any potential conflicts of interest while executing the duties of this position?	No
Reason(s) You Wish to Serve	I wish to serve my community by leveraging my technical skills, experiences, and attention to detail in the adjudication of appeals.
Have you reviewed the current meeting schedule of the board / committee and can commit to regular meeting attendance?	Yes
Electronic Signature Agreement	I agree.
Electronic Signature	Robert D. Reed
Date	2/28/2025

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Charlevoix City Council

All Other Actions and Requests

Title: Mayoral Appointments

Date: April 21, 2025

Presented By: Mayor Lyle Gennett

Background:

Mayor Gennett requested consideration for the following appointments:

- Annie Oosthuizen and Maureen Owens to the Downtown Development Authority for terms to expire April 30, 2029.
- Robert Miller to the Housing Commission for a term to expire April 30, 2030.

Recommendation:

Motion to confirm the Mayor's appointments of Maureen Owens and Annie Oosthuizen to the Downtown Development Authority Board for terms to expire on April 30, 2029.

Motion to confirm the Mayor's appointment of Robert Miller to the Housing Commission for a term to expire April 30, 2030.

Attachments:

1. Oosthuizen DDA
2. Owens DDA
3. Miller Housing Commission
4. Charlevoix Farmers Market Advisory Committee

Online Form Submittal: Volunteer Boards and Committees Application

From noreply@civicplus.com <noreply@civicplus.com>

Date Tue 4/15/2025 1:14 PM

To Sarah Dvoracek <clerk@charlevoixmi.gov>

Volunteer Boards and Committees Application

Thank you for your interest in serving on a volunteer board, commission or committee. The purpose of this form is to provide the Mayor and City Council members with some information about residents considered for appointment. Your application will be kept active for six months and you will be contacted if you are chosen to serve.

Committees and Boards to Apply For	DDA Board
Name	Annie Dipert Oosthuizen
Email Address	anne.m.dipert@gmail.com
Address	314 West Hurlbut Street
Home Phone	2316223068
Cell Phone	<i>Field not completed.</i>
Are you a registered voter in the City?	Yes
How long have you lived in the City?	6 years
Educational Background	Charlevoix Public Schools and BA in Graphic Arts from North Central College in Naperville, IL.
Professional Qualifications and / or Work Experience	Graphic Designer at LLT Group in Naperville, IL (2016-2018) Started at The Clothing Company in 2018, became owner in 2023.
Community Activities and / or Other Experience	Current Vice-chair on DDA board, Member of Charlevoix Housing Commission Board, co-leader of Downtown Merchant Meetings, and regularly volunteer as an Election Inspector.
Have you served on a board / committee or held a civic position in the past?	Yes

If yes, please explain.	DDA and CHC.
Do you foresee any potential conflicts of interest while executing the duties of this position?	No
Reason(s) You Wish to Serve	During my previous term on the DDA board, I learned a lot about the major and minor details of maintaining a thriving Downtown District. When traveling for work or pleasure, I always find that I'm taking note of what other communities are doing to stay current and vibrant, especially considering our upcoming TIF renewal. If I'm re-elected I look forward to offering my prospective as a business owner and City resident in the coming term. I'm committed to my volunteer position on the board, and take my attendance seriously.
Have you reviewed the current meeting schedule of the board / committee and can commit to regular meeting attendance?	Yes
Electronic Signature Agreement	I agree.
Electronic Signature	Anne D Oosthuizen
Date	4/15/2025

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Online Form Submittal: Volunteer Boards and Committees Application

From noreply@civicplus.com <noreply@civicplus.com>

Date Fri 4/11/2025 2:19 PM

To Sarah Dvoracek <clerk@charlevoixmi.gov>

Volunteer Boards and Committees Application

Thank you for your interest in serving on a volunteer board, commission or committee. The purpose of this form is to provide the Mayor and City Council members with some information about residents considered for appointment. Your application will be kept active for six months and you will be contacted if you are chosen to serve.

Committees and Boards to Apply For	DDA Board
Name	Maureen Owens
Email Address	maureen-owens@hotmail.com
Address	206 E. Upright
Home Phone	2316223238
Cell Phone	2316223238
Are you a registered voter in the City?	Yes
How long have you lived in the City?	Charlevoix
Educational Background	<i>Field not completed.</i>
Professional Qualifications and / or Work Experience	<i>Field not completed.</i>
Community Activities and / or Other Experience	<i>Field not completed.</i>
Have you served on a board / committee or held a civic position in the past?	Yes
If yes, please explain.	<i>Field not completed.</i>

Do you foresee any potential conflicts of interest while executing the duties of this position?	No
Reason(s) You Wish to Serve	I would appreciate the honor of continuing to serve the Charlevoix Community on the Downtown Development Authority Board.
Have you reviewed the current meeting schedule of the board / committee and can commit to regular meeting attendance?	Yes
Electronic Signature Agreement	I agree.
Electronic Signature	Maureen B. Owens
Date	4/11/2025

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CITY OF CHARLEVOIX
VOLUNTEER BOARDS AND COMMITTEES APPLICATION

Thank you for your interest in serving on a volunteer board, commission or committee. The purpose of this form is to provide the Mayor and City Council members with some information about residents considered for appointment. Your application will be kept active for six months and you will be contacted if you are chosen to serve.

- ☐ BOARD OF REVIEW
☐ COMPENSATION COMMISSION
☒ DDA/MAIN STREET BOARD
☐ HISTORIC DISTRICT COMMISSION

- ☒ HOUSING COMMISSION
☒ PLANNING COMMISSION
☐ RECREATION ADVISORY COMMITTEE
☐ SHADE TREE & PARK COMMISSION

- ☐ ZONING BOARD OF APPEALS
☐ OTHER _____
☐ NO PREFERENCE

PLEASE PRINT

NAME: Robert (Rob) Miller
ADDRESS: 302 Crowter St.
HOME PHONE: _____ CELL PHONE: 248-770-2157
EMAIL: Charlevoix Rob 30@gmail.com
ARE YOU A REGISTERED VOTER IN THE CITY? yes HOW LONG HAVE YOU LIVED IN THE CITY? 3 yrs (in area since 1974)
EDUCATIONAL BACKGROUND: B.S. - Business

PROFESSIONAL QUALIFICATIONS AND/OR WORK EXPERIENCE: District Mgr. \$55 million managed volume. Also, Commercial Real Estate experience. 40 yrs. food service experience.

COMMUNITY ACTIVITIES AND/OR OTHER EXPERIENCE: Worked in local retail shops

HAVE YOU SERVED ON A BOARD/COMMITTEE OR HELD A CIVIC POSITION IN THE PAST? IF YES, PLEASE EXPLAIN:

contract negotiations committee, customer service initiatives, new sight business evaluations,

DO YOU FORESEE ANY POTENTIAL CONFLICTS OF INTEREST WHILE EXECUTING THE DUTIES OF THIS POSITION? IF YES, PLEASE EXPLAIN:

no

REASON(S) YOU WISH TO SERVE:

My desire is to see Charlevoix continue as vibrant community with knowledge of past and a focus on the future. I understand the need for all members of the community, whether in housing, retail or job opportunities, to ensure Charlevoix remains sustainable and rewarding for all.

HAVE YOU REVIEWED THE CURRENT MEETING SCHEDULE OF THE BOARD/COMMITTEE AND CAN COMMIT TO REGULAR MEETING ATTENDANCE?

yes

SIGNATURE: _____

DATE: 3/26/2025

RETURN APPLICATION TO THE CITY CLERK'S OFFICE: 210 STATE STREET CHARLEVOIX, MI 49720 - EMAIL clerk@charlevoixmi.gov

Charlevoix Farmers Market Advisory Committee

Purpose

The Farmers Market Advisory Committee serves as a guiding body that supports the successful operation, growth, and integrity of the Charlevoix Farmers Market. It provides recommendations, oversight, and guidance to ensure the market operates fairly, efficiently, and in alignment with its mission.

Obligation

1. **Vendor Application Review** – Evaluate and approve new vendor applications based on market guidelines, product diversity, and community needs.
2. **Market Grievance Resolution & Compliance Oversight** – Review and address complaints or disputes from vendors, and/or customers, ensuring fair resolutions. Support the Market Manager to ensure that all vendors adhere to market rules, local regulations, and health and safety standards.
3. **Policy and Procedure Updates** – Regularly assess and update market policies, ensuring they remain relevant and effective.
4. **Market Development & Improvement** – Provide input on market growth, vendor recruitment, and operational enhancements, when appropriate.
5. **Community Engagement** – Act as a liaison between vendors, customers, and local stakeholders to promote a positive market experience.

Meetings

The Charlevoix Farmers Market Advisory Committee will meet once in the spring, once in the fall, and as needed to resolve grievances. Meeting times TBD.

Membership

Six members consisting of three vendors, a downtown business representative, a city resident, and a member of the Recreation Advisory Committee.

Appointment

Mayor, confirmed by City Council (for vendors, downtown business representative, and city resident)

The Recreation Advisory Committee shall appoint one of their own members annually to serve automatically.

Term

Three Year Term

Recreation Advisory Committee representative shall serve a one-year, renewable term so long as they remain a member of the RAC.

Compensation

None

Staff Liaison/Department

Beth Anzell, Market Manager, Recreation Department

Charlevoix City Council

Reports and Communications

Title: City Manager's Comments

Date: April 21, 2025

Presented By:

Background:

A. DDA Payment to the Library

When the Charlevoix Public Schools was preparing to sell the current library, back in the early 2000s, the DDA stepped in to purchase it for the benefit of the library and pledged further revenue to support the location of the library within the district. In the mid 2010s, the DDA's declining revenue coupled with increased debt service costs impaired their ability to maintain the pledged support for the library. Around 2017, they returned to normal payments. In the amended budget for FY 2024 and the budget for the current fiscal year, the DDA allocated funds to full pay and complete their obligation to the library in the amount of \$185,000. You'll find a transaction for this amount in the payables this week. This will allow both the DDA and the library to close their books on this agreement with both parties having fully fulfilled their obligations. I'm happy to discuss this further if there are questions.

B. EPA Superfund Clean-up Project

As you know, the EPA and US Army Corps of Engineers are undertaking remediation efforts at several sites around town. In the past couple of weeks, they have been very forthcoming about their work and the steps upcoming. I appreciate this level of communication with them. They are doing final sampling and waiting for results now. They are also closing off testing wells and preparing some of the buildings for demolition and soil removals. They expect this low-level of activity to continue over the next couple of weeks. They are aware of the importance of communicating plans--especially for demolition to us as it relates to road closures. When we know more, we'll continue to keep you updated.

C. BIBCO Future Planning

I met this week with Tim McQueer of Beaver Island Boat Company. Their current lease with the City expires in 2028. They are currently exploring the design and acquisition of a new boat. They are interested in retaining their current location downtown at the expiration of this lease and understand that a lease longer than five years will require a public referendum in some capacity. We are discussed how design changes at the dock--as a result of the optimization study several years ago--can inform the future of their downtown lease.

D. Pinebridge Place Development

Jane MacKenzie and Northern Homes are continuing to make progress on their plans to construct Pinebridge Place at 1522 Bridge Street. I signed the final quit claim deed this week and she anticipates construction to begin in June.

E. McSauba Playground Construction

In partnership with the Rotary Club of Charlevoix, the Recreation Department will be hosting a Community Playground Build on May 9th and 10th. This community playground build represents hard

work and generous donations from the Charlevoix Community over the past year. Over \$230,000 has been raised to date. This state-of-the-art, one-of-a-kind playground will be unlike any other in the area. Not only will it serve the children who attend Camp McSaubia, but it will also become a popular destination for families throughout the Charlevoix community. To sign up for the playground build go to: Rotary Club of Charlevoix: [Rotary Club Of Charlevoix Community Playground Build-Mt. McSaubia](#)

F. Pickleball/Tennis Complex

We have been working with Beckett & Raeder on conceptual designs for a combined pickleball and tennis complex that might replace the current adult softball field. This field has not been used in several years and the recreational use of adult softball has significantly declined from its historic peak. The Recreation Advisory Committee reviewed a conceptual plan earlier this month and we expect to bring a presentation to you next month showing what this may include, how much it might cost, and what the effort might be to gather funds. This would expand pickleball, improve the tennis facility and add in other community recreation components in a complex that fits well with the neighboring uses.

Recommendation:

Attachments:

1. Planning Commission Meeting Minutes 03/10/2025

City of Charlevoix
Planning Commission Regular Meeting Minutes
Monday, March 10, 2025 - 6:00 PM
Council Chambers, 210 State Street, Charlevoix, MI

A. Call to Order/Pledge of Allegiance

The meeting was called to order at 6:00 p.m. by Chair Muladore followed by the Pledge of Allegiance.

B. Roll Call

Chair: Jennifer Muladore

Members Present: Scott Beatty, Shelley Boehmer, Sherm Chamberlain, Toni Felter, John Kurtz, Maureen Radke

Members Absent: None

Staff Present: Jonathan Scheel, Director of Planning and Zoning

C. Inquiry into Potential Conflicts of Interest

D. Approval of Agenda

Motion by Member Chamberlain, seconded by Member Boehmer to approve the agenda as presented.

Motion carried by unanimous voice vote.

E. Approval of the Minutes

1. Approval of Draft Minutes January 13, 2025

Member Boehmer stated in the minutes the Commission discussed the Accessory Building Height changes. Member Boehmer stated the minutes didn't reflect everything that was discussed before the vote. Member Boehmer referenced page 129 from the packet and stated the Commission's discussion included 20' from the edge of an alleyway and that they had added some new language, but she did not see that in their motion. Director Scheel stated that the motion stated "with changes as discussed" but that it would be good to have those changes included in the minutes.

Motion by Member Felter, seconded by Member Boehmer to approve the minutes of January 13, 2025, with the request for changes to Item H-1., 153.116 Accessory Buildings/Height.

Motion carried by unanimous voice vote.

F. Call for Public Comment Not Related to Agenda Items

G. New Business

1. 153.171 Landscaping

Director Scheel explained the changes he recommended and those potential changes for the Commission to discuss.

The following changes the Commission concurred to are as follows:

- Change the references from Planning Commission to Zoning Administrator as highlighted in (B)(1); (B), (11), (12) & (13);
- (C)(9)(c) 2 - delete "2. A screen wall or fence shall be located at least two feet from the property line."
- Eliminate (C)(9)(c) 4.
- Chair Muladore referenced (B)(4) "All plants shall be hardy per climatic conditions in the City", and asked if there was a list of plants available to include with this language as a reference and Mr. Scheel stated he would do some research.
- Chair Muladore referenced (B)(6) "The overall landscape plan shall not contain more than 25% of any one plant species." Mr. Scheel stated he would look at the language for possible changes for the next meeting.
- (E)(1)(a) to read: "one canopy tree shall be planted between the right-of-way line and the street per Shade Tree and Park Commission rules, Chapter 152, Trees."
- (E)(1)(b): "Trees shall meet Residential Guidelines except where site conditions warrant otherwise."
- (E)(2): Mr. Scheel stated he did not know where the 4,500 sq. ft. reference came from for a canopy tree. Mr. Scheel stated the average residential lot size was 6,000 sq. ft. and they had a 50% lot coverage of permeable surfaces. Mr. Scheel stated that a 60' x 100' lot would require three trees, and he stated that more density on a multi-family lot would be needed. Mr. Scheel stated he would do further research.
- (E)(3): Director Scheel stated he would go out in the field and look at how this regulation has been applied, i.e. May Street development.
- (F) Non-residential and mixed-use districts and non-residential uses in residential districts. After discussion, staff will look to re-write (F)(a) and add a definition for "evergreen".
- (G) Outdoor storage areas - instead of being repetitive and contradictory, the language will read, "The buffer area shall meet 153.153 Outdoor Storage."
- (H)(2)(b): ~~No~~ Changes to the proposed language in subsections 1. and 4. to read as follows:
 - 1. All islands and peninsulas shall be protected by raised curbs; non-raised curbs are permitted to facilitate drainage, except in instances where the grading and drainage plan demonstrates storm water runoff can be managed without the use of raised curbs.
 - 4. Trees shall be planted at least centered on islands from the edge of the curb or pavement.
- (I) "Fencing, screening and walls." Mr. Scheel stated the special land use screening is going to be very important, and screening specifications were included in Section 153.173, so the language could be removed from this section.
- (K)(2): Changed to read: "Destruction or removal of healthy trees". In the event healthy plants that are intended to meet the requirements of this section are cut down, damaged, or destroyed, shall be replaced in accordance with Shade Tree & Park Commission requirements.

Director Scheel stated he would make the changes and bring the language back to the Commission at the next meeting.

H. Old Business

1. Annual Report

Director Scheel stated he prepared the Annual Report with input from the Commission. Member Chamberlain stated he sent an email regarding the training he attended and Mr. Scheel stated he would add the information to the report. Member Boehmer asked Mr. Scheel to look at the formatting on page 22 of the report.

Motion by Member Boehmer, seconded by Member Chamberlain to send the Annual Report to City Council as amended.

Motion carried by unanimous voice vote.

I. Staff Updates

1. Zoning Administrator's Report January 2025

Member Chamberlain stated Charlevoix Township did have to do a site plan review for Walstrom Marine for a substantial addition and also the old American Mobile property is in the process of being sold.

Director Scheel stated he was working on the Redevelopment Ready Community Program requirements. Mr. Scheel reported the licensing, permitting, and enforcement software is online and live.

Mr. Scheel stated the Historic Commission's National Nomination for Downtown Charlevoix was approved. The nomination does not add more regulations to the properties, but it does allow any private landowners be eligible for potential grants.

Director Scheel stated he sent the Networks Northwest Report to Charlevoix Township and requested a joint meeting, but he has not heard back from them.

Discussion followed regarding a request from Zach Sompels of Housing North to present a Housing Report to the Commission. The Commission concurred to ask Mr. Sompels in his presentation not to fall back to general numbers and to be more specific to the City and Township of Charlevoix.

Member Boehmer stated if a Commission Member was not going to be at a meeting, she asked that they notify Mr. Scheel or Chair Muladore.

Member ~~Boehmer~~ Radke stated she would like to see the recycling services improve in the City. Director Scheel stated he was just added to the County's Material Handling Committee, which is about recycling, and their first meeting is set for late March.

J. Requests For Next Months Agenda or Research Items

K. Adjournment by 8:00 p.m. unless extended by a motion

The meeting was adjourned by Chair Muladore at 7:35 p.m.

Sarah J. Dvoracek/fgm City Clerk

Jennifer Muladore Chair

Charlevoix City Council

Reports and Communications

Title: Mayor and Council Comments

Date: April 21, 2025

Presented By:

Background:

Recommendation:

Attachments:

None

Charlevoix City Council

Other Council Business

Title: Closed Session: Annual City Manager Performance Review (MCL 15.268(1a))

Date: April 21, 2025

Presented By: Mark Heydlauff, City Manager

Background:

I request my annual performance review be conducted in closed session pursuant to my right under Michigan law.

Recommendation:

Motion to enter Closed Session for the purpose of conducting the City Manager's performance evaluation pursuant to MCL 15.268(1a).

Attachments:

None