

Milford Town Library

2017-2022 Capital Plan

Milford Town Library Capital Plan							
2018-2022							
			Updated as of 1/17/2017				
Project	2017	2018		2019	2020	2021	2022
Technology	\$9,999.99			\$10,000	\$13,000	\$6,000	
	Add HVAC duct/ventilated door to server closet			Upgrade server/virtual environment & 3 staff workstations	Upgrade public workstations replace 3 staff workstations	Upgrade Firewall & 4 staff workstations	
Heating System		\$33,000	*				
		Replace control software per ENE					
Parking Lots		\$40,000	*				
		repaving & additional parking spots via S. Cristafulli					
Childrens Room				\$25,000			\$30,000
				Carpeting			New/Additional Furniture
Historical Room				\$10,000			
				Archival Shelving			
Total	\$9,999.99	\$73,000		\$45,000	\$13,000	\$6,000	\$30,000
To be Added:	Review of renovation files to determine status of major building systems						
	Effect of Curran Room Upgrades on Annual Budget/Line Items/Financials						
Bold/Red indicates items that are assumed on prior budgets but may NOT be necessary due to IT Dept. Restructuring							

Status of Milford Town Library Special Articles-June 13, 2017 –Changes In Red

Special Article	Amount Remaining	Status
A20-Electrical Grid-10/14	\$2,682	<ul style="list-style-type: none"> • Use for upgrade for Wireless AP • Quote from C/WMARS Library Network –older technology -2 AP -\$1,200. • Worldband compatible with Milford IT Department-3 API-\$4,065 <ul style="list-style-type: none"> ◦ Consulted Milford IT and Worldband for improved coverage • C/WMARS Library Network upgraded technology and no new SonicWALL is needed. Three access points for 60 simultaneous users now available. • <u>Upgrade completed 6-8-17. Cost \$2551</u>
A-20 New Computers/Signage-10/14	\$6,336.00	<ul style="list-style-type: none"> • Met with Signs Plus for signage needs May 26th. • <u>Quote pending</u>
A-25 Upgrades to Library 10/15	\$23,000	<ul style="list-style-type: none"> • Procuring revised quotes for people counter, camera security system & self-checkout • Finalizing quote for self-checkout system • MeeScan approved contract reviewed by Town Counsel. <ul style="list-style-type: none"> ◦ Working with C/WMARS Library Network to activate the self-checkout devices. Devices use the W-Fi Network. • <u>Self-checkout cost-\$9,623</u> <ul style="list-style-type: none"> ◦ <u>Installation to be complete 6/24/2017</u> • People Counter devices have arrived. The current people counter is a repurposed in the YA Room. Two Devices have been purchased they will be located at the Main Doors and at the Children's Rooms need cabling. Worldband is providing a cabling quote. • <u>People Counters -\$3,250 (+ ~\$500.00 for cabling)</u> • Contacted Stanley Security Systems for additional camera quote

A-26 Fence Replacement 10/15	\$12,000	<ul style="list-style-type: none"> Sr. Custodian and Board of Library Trustees working together on how to use the funding. Current funding not sufficient to do the project properly. Trustees will to return the article money to Town of Milford and request again in FY2019
A-11 AC System 10/16	\$10,000	<ul style="list-style-type: none"> Contacted New England School Services-3 quotes for half, full louvered doors. Quotes range from \$1,745-\$1,761. Fires resistant door -\$1,968 Door Installed 4-4-17. Temperature average 77 degrees. Thomas Fricker Heating selected for project. Planning meeting scheduled 6-6-17- Project bid \$5,140. <u>Installation scheduled for June 24, 2017</u>

Status of Milford Town Library Capital Plan –June 13, 2017 –Changes in Red

Capital Request	Amount Requested	Status
FY-2018 Heating System	\$33,000	<ul style="list-style-type: none"> • ENE revised quote to \$34,535 for extensive upgrade of system <ul style="list-style-type: none"> ◦ ENE decided not to provide a quote for only upgrading the Johnson Control software • Northern Energy Services quote for \$11,180. Only replace software and Johnson controller box. No replacement of thermostats or other hardware <ul style="list-style-type: none"> ◦ Northern Energies is providing a quote to match the ENE quote ◦ Quote arrived 6-13-17(In review ~\$39,000) • World Energies submitted preliminary numbers (matching NES original quote) <ul style="list-style-type: none"> ◦ \$21,594 to upgrade JohnsonSFX40 to SX80 and replace 10 thermostats. Price can be reduced with incentives from utility companies. • Scheduling meeting with ENE to review submitted quote • New/Additional quotes and detailed answers to questions will be reviewed at July Trustee meeting and with the HVAC project sub-committee.
FY-2018- Parking Lots	\$40,000	<ul style="list-style-type: none"> • Contacted Scott Crisafulli for clarification on amount for submittal • Scott Crisafulli confirmed \$40,000 is needed to pave both driveways. Includes the \$10,000 for Highway to pave the staff parking lot • Library directly pays paving company and Highway invoices the library for the paving.
FY-2019- Carpeting	\$25,000	<ul style="list-style-type: none"> • 2 quotes from Car-Leo \$19,000 and Business Floors \$23,000-
FY2019- Archival Shelving	\$10,000	<ul style="list-style-type: none"> • Reviewing quotes

Milford Town Library FY2018 Capital Requests

HVAC Upgrade

- Need
The HVAC control software is more than ten years old. There are issues with temperature regulation and the current Johnson control software is at end of life. The existing air handlers and associated equipment was installed during the 1986 construction of the current Milford Town Library.
- Proposal
Temperature fluctuations and aging equipment effects the building environment, patron and staff comfort as well as contributing to potential damage to the Collection and the Library Building.
- Alternatives
The entire HVAC system is aging. A certain temperature level needs to be maintained for comfort and prevent deterioration of the library materials. The Johnson Controls software currently being using is several versions out of date and only works with the also outdated Microsoft XP operating system.
- Steps Taken
HVAC vendors have been contacted to review the current status of hardware and software used by the Library. Two vendors ENE and Northern Energy Services (NES) have provided quotes. A third vendor World Energies has only recently supplied a preliminary quote for the requested upgrades needed.
- Background Data
 - ENE Quote
 - NES Quote
 - World Energies Preliminary email for quote

Paving Library Parking Lots

- Need
The public and staff parking lots have not been paved in nearly 30 years and have become uneven. The staff parking lot is small, and does not provide enough parking spaces. We are adding 6 staff parking spaces (which will also be available for the use by Memorial Hall.) They will be paved the same way as the existing spots being repaved are.
- Proposal
Working with the Milford Highway Department to add additional staff parking. Highway Department will pave and stripe the staff parking lot and invoice the Library for the cost. Braza Construction will be paving and restriping the public parking lot. The quote received for the public parking paving portion of the project is from Braza Construction and is with the current Highway Department contract.

- Alternatives
Both parking lots are severely cracked and worn. Numerous patches have been made over the years to but the surface has becoming uneven, and unsafe for both patrons and staff. To avoid future safety issues, the parking lots need to be repaired.
- Steps Taken
Quotes have been submitted by Braza Construction and we have received an email confirmation from Highway Surveyor Scott Crisafulli for the cost of paving the staff parking lot.

Background data such as competitive quotes and cut sheets.

- Braza Construction Quote 1-12-2017
- Email Scott Crisafulli dated 3-27-2017

January 25, 2017

Ms. Susan Edmonds
Milford Town Library
80 Spruce Street
Milford, MA 01757

RE: BMS Replacement

Dear Ms. Edmonds:

ENE Systems is pleased to furnish you a proposal to replace existing Johnson Control system at the above reference location. Our proposal will include the following scope:

Scope of work:

- Remove and discard existing DDC system
- Provide, Install and Wire all necessary Hardware and Software for a fully functional Building Automation System Front End and Graphical User Interface. This includes, new PC Workstation, Network Equipment and User Licenses.
- Furnish and install new BMS application software
- Furnish (1) new operator workstation with 22" LCD monitor
- New graphics package will be done per building standards
- Field commissioning of graphical interface and checkout.
- Replace all existing room thermostats
- Provide 4 hrs. of training
- Furnish and install new BACnet DDC Controllers for the following systems:
 - Air handling unit #1
 - Air handling unit #2
 - Hot water system (boiler and pumps)
 - Chilled water system (chiller and pumps)
- Includes new BACnet communication wiring (MSTP) for new proposed system
- All labor, electrical wiring, project management, engineering, drawings, startup, checkout, training and as built drawings as necessary for a complete installation

Budget Price: \$34,535.00

ENE SYSTEMS, INC.

480 NEPONSET STREET, SUITE 11D ■ CANTON, MA 02021 ■ TEL. (781) 828-6770 ■ FAX (781) 821-5523 ■ WWW.ENESYSTEMS.COM

MA LICENSE: 1548C ■ S-LICENSE: SSCO 000970 ■ RI LICENSE: 4983TSC



Proud member of



Clarifications:

- All work to be performed Monday-Friday 7:00am – 3:30 pm
- All wiring shall be in conduit in mechanical rooms. All other areas shall be plenum rated cable.
- The installation of all control valves, flow meters, and provision of pipe taps for sensors will be by others.
- ENE Systems will provide our standard point to point checkout procedure for systems start up.

Excluded from this proposal:

- Excludes balancing of existing system
- Field devices (valves and actuators)
- Excludes payment and performance bond
- Excludes labor to work with a commissioning agent

Thank you for the opportunity to offer our services to you. If you have any questions, please feel free to call me at (781) 828-6770 extension 226 or e-mail jfontes@enesystems.com

Sincerely,
ENE Systems, Inc.

Jose Fontes
Sr. Account Executive
(781) 828-6770 ext. 226
jfontes@enesystems.com

ENE Systems will act on the above proposal with a written Authorization to Proceed. Please sign and return this document to Jose Fontes at ENE Systems 480 Neponset Street, Canton, Massachusetts, 02021 or Fax to 781 821-5523. We appreciate your business.

Authorization to Proceed:

Print Full Name

Signature

Date

Purchase Order Number

Date



Susan Edmonds

Director, Milford Town Library

80 Spruce Street

Milford, MA 01757

Job Number 17-G-OOE-033

June 7, 2017

Northern Energy Services, Inc.

78 West Main Street

Northborough, MA 01532

Phone: (508)393-7500

Fax: (508)393-7552

www.northernenergy.net

Re: Milford Public Library Energy Management System Upgrade

Dear Ms. Edmonds,

Per our site visits and discussions, please find enclosed audit report and project proposal to upgrade the library's existing Johnson Controls Facility Explorer energy management system (EMS). Data, conclusions and recommendations included are drawn from the results of our **ASHRAE Level 1 audit** (see audit types below).

Audit Types

Type of Audit	Brief Description
Level 1	<ul style="list-style-type: none">▪ Brief on-site survey of the building▪ Savings and cost analysis of most obvious/advantageous Energy Conservation Measures (ECMs)▪ Identification of potential capital improvements meriting further consideration
Level 2	<ul style="list-style-type: none">▪ More detailed building survey▪ Spot readings and metering▪ Breakdown of energy use▪ Savings and cost analysis of all ECMs▪ Identification of ECMs requiring more thorough data collection and analysis (Level 3)
Level 3	<ul style="list-style-type: none">▪ Attention to capital-intensive projects▪ More detailed field analysis▪ Data logging/longitudinal data collection▪ More rigorous engineering analysis▪ Cost and savings calculations with a high level of accuracy



Current Building Conditions

At the request of facility owners/operators, Northern Energy Services performed an **ASHRAE Level 1** energy audit on May 15, 2017, and a follow-up site visit by installation technicians. We identified an aged EMS controlling existing building HVAC systems. The EMS platform (Johnson Controls Facility Explorer) is an excellent open source program, but the version installed is lacking in graphical user interface, remote access to equipment status and scheduling, and any form of equipment alarms.

Furthermore, the existing hot water pumping systems and the central, custom multizone air handler both contain opportunities for energy-efficiency improvements.

The central air-handler was originally a stand-alone multizone unit with both a hot deck and a cold deck and (8) zones. At some point, this system was converted to a variable-air-volume configuration. It is unknown at this time exactly how the VAV boxes are configured, as none were available for inspection due to location. Replacement of this unit was considered, but ultimately rejected as a viable measure due to the construction of the building. The library proper was built around the AHU, and there is no practical method to either remove the existing unit and/or install a new one in the mechanical space. Correction of this situation would engender project costs far outweighing any possible benefit such modifications could reasonably be expected to generate.

We are currently investigating the status and potential upgrade of the existing air handler (AHU) serving the majority of library spaces. Given the placement of the AHU within the building and high cost of a replacement, replacement of the existing AHU with a new high efficiency unit would run very high installation costs with a limited return via energy savings. As an alternate energy savings measure, we are investigating the potential of HW pump modulation via variable speed drives and retrofitted control valves on the unit coils.

Several subsequent site visits have yielded the current version of project scope, that endeavors to maximize the efficiency of this facility and hopefully improve the operation of its various mechanical systems.

Proposed Case

Northern Energy recommends upgrading the existing EMS to a new web-based Facility Explorer system. The upgrade would include graphics for ease of use and navigation for users, remote access to scheduling and equipment, equipment use data, and equipment alarms with email alarm notification.

An upgraded EMS will allow significantly easier operation for the end-user. Modern graphics and navigation, remote (secure) web-based access from any location with a computer, alarming and email alarm notification, and data trending will increase the facility's ability to manage HVAC energy use.

NES also proposes to convert the existing hot water loop to a variable flow system, which will allow the pumps to match pumping energy to actual building loads.

Finally, as the existing AHU ostensibly operates through VAV boxes that have no discernable bypass, NES proposes to integrate variable frequency drives to the AHU supply fan motor.

Scope of Work

We propose the installation of:

Energy Management System Upgrade:

- 1. One (1) JCI FX80 Network Controller**
- 2. One (1) Johnson Controls Factory Expansion Control Panel**
- 3. One (1) Dell Optiplex Workstation**



4. Controller database programming
5. Graphics
6. Start-up, alarming, trending, scheduling, and 4-hour end-user training
7. One year parts and programming warranty

This scope of work includes:

1. Wiring/connection for new panel and controller
2. Labor required to wire, program and configure upgrade.

(Library will need to provide outward-looking IP and internet connection for remote access)

Hot water loop conversion:

1. Furnish and install new hot water and chilled water control valves.
2. Furnish and install DanFoss VFDs for main loop pumps
3. Integrate existing N2 controllers into the FX80 controller (from EMS Scope)

AHU VFD

1. Furnish and install one DanFoss VFD for main supply fan.
2. Integrate existing controls to FX80 controller from EMS Scope.

Project Costs

Turn-key cost to execute this project:

ECM #	Cost/Benefit Analysis for Energy Conservation Measures	Estimated Energy Saved	Total Estimated Savings	Measure	Estimated Incentive	Customer	ROI	Simple
		\$/yr	\$/yr	Cost	\$	Cost		Payback
1	EMS - Upgrade	\$2,588	\$2,588	\$31,650	\$4,500	\$27,150	9.5%	10.5
2	VFD on AHU Fans	\$2,070	\$2,070	\$10,367	\$1,000	\$9,367	22.1%	4.5
3	Heating/Cooling Pump VFD	\$689	\$689	\$6,150	\$3,000	\$3,150	21.9%	4.6
TOTALS		\$5,348	\$5,348	\$48,167	\$8,500	\$39,667	13.5%	7.4

Utility incentives are estimated based upon 2017 MassSave prescriptive levels.

Should you wish to proceed with the installation, all we would need to begin is your signature under "Authorized Signature" below. Upon receipt, we can immediately begin project scheduling. Please don't hesitate to call or email with any questions or concerns.

Sincerely,
 Andrew Vaillencourt
 VP Engineering
availlencourt@northernenergy.net



Project Authorization

I have read and understand this Scope of Work and the Qualifications and Exclusions listed below. By signing, I authorize Northern Energy Services, Inc. to execute the Scope of Work as described herein:

Authorized Signature: _____

Date: _____

General Clarifications and Exclusions

This report is not for general use and is the intellectual property of Northern Energy Services.

Any and all savings estimates and rebates must be considered estimated until reviewed and approved by the utility. ***These qualifications and exclusions apply to this proposal in its entirety.***

Items not included in this proposal include (but not limited to):

- Asbestos abatement or removal – In the event asbestos is found, customer is responsible for abatement and/or removal.
- Hazardous waste disposal not specified.
- Change orders or additional items required by customer or inspectors.
- Engineered drawings, as-builts, submittals, or similar.
- Costs to repair or update any existing equipment not specified.
 - All scope items are subject to the limitations of audit type specified in “Baseline” section of this proposal. Northern Energy Services is not responsible for deficiencies in the existing equipment not identified during audit.
 - In the event defective or deficient equipment is found, Northern Energy Services will generate a price to correct the deficiency.
 - Customer is **not obligated** to have Northern Energy effect any non-specified repair.
- Overtime, non-first-shift, or premium time labor hours. All work to be performed during regular business hours, Monday – Friday, 7am – 3 pm.
- Structural, carpentry, painting, patching, and/or finish work for interior, exterior, and/or roofing surfaces.

Other Qualifications:

- Electrical installation to be performed by an open shop electrical installer.
- Existing power feed is to be reused to power the new control panel.
- Pricing in this proposal is guaranteed for **sixty (60) days** from proposal date.
- Northern Energy Services, Inc. and subcontractors are not responsible for unforeseen conditions (**force majeure** events) including climate conditions, civil unrest, and/or natural disasters.
- This proposal includes pricing for only the items specified in the “Scope of Work” section. No additional items (parts, material, or labor) are expressed or implied to be part of this proposal.

From: Susan Edmonds <sedmonds@cwmars.org>
Sent: Tuesday, June 13, 2017 12:25 PM
To: Jennifer DeManche
Subject: Fwd: Energy Management System

----- Forwarded message -----

From: Ellie Kowal <ellie.kowal@worldenergy.com>
Date: Thu, Jun 8, 2017 at 3:59 PM
Subject: RE: Energy Management System
To: Susan Edmonds <sedmonds@cwmars.org>

Hi Susan,

Thanks for your phone call earlier today! Per our discussion, the total cost of the project is \$21,594.00, without incentives. The scope of work is turnkey and includes all material and labor. I've included my estimated incentive calculations below, and if they are approved 100% by both National Grid and EverSource (which I completely expect them to be) your incentive will be \$7,326, reducing the library's total out of pocket cost \$14,268.00. Also, because the EMS system is web based, it can be accessed from any computer, tablet or smart phone. You won't have to necessarily upgrade your computer's operating system. I hope this helps, let me know if you have any other questions for me!

- Electric (kWh) - National Grid Incentive = \$300/per point of control (aka thermostats)
 - 10 thermostats x \$300/ea = \$3000 incentive

- Gas (therm) - EverSource Incentive = \$1.75 per therm saved
 - 2,472 therms saved x \$1.75/therm = \$4,326

- \$3000 (Nat'l Grid) + \$4,326 (EverSource) = \$7,326 total estimated incentive dollars

EEM #	PROPOSED MEASURES	Total Energy Savings	O&M Savings	Pre-Tax Price	Es In
		\$/yr	\$/yr	\$	
1	Energy Management System	\$5,441.34	\$0.00	\$21,594.00	
	Total	\$5,441.34	\$0.00	\$21,594.00	

Savings Analysis

EEM #	PROPOSED MEASURES	Electric Savings			TI
		kW	kWh/yr	\$/yr	
1	Energy Management System	0.000	15,123	\$2,722.14	
	Total	0.000	15,123	\$2,722.14	



Ellie Kowal / Energy Specialist
Ellie.Kowal@WorldEnergyES.com / +1.508.320.7964

World Energy Efficiency Services
Office: +1.774.420.2764 / Fax: +1.774.420.2768
24 Rockdale Street, Worcester, MA 01606
www.WorldEnergyES.com

This e-mail is intended only for the named recipient(s) and may contain information that is privileged, confidential and/or exempt from disclosure under applicable law. No waiver of privilege, confidence or otherwise is intended by virtue of communication via the internet. Any unauthorized use, dissemination or copying is strictly prohibited. If you have received this e-mail in error, or are not named as a recipient, please immediately notify the sender and destroy all copies of this e-mail. Thank you.

From: Ellie Kowal
Sent: Wednesday, May 31, 2017 4:34 PM
To: 'Susan Edmonds'
Subject: RE: Energy Management System

Hi Susan,

I'm sorry... Below are the correct, estimated financials. My apologies, I had a formula error on the initial set of financials I sent you below. Your estimated out of pocket cost is the Net Price listed below, \$14,861.40.

EEM #	PROPOSED MEASURES	Total Energy Savings	O&M Savings	Pre-Tax Price	Es In
		\$/yr	\$/yr	\$	
1	Energy Management System	\$5,441.34	\$0.00	\$21,594.00	
	Total	\$5,441.34	\$0.00	\$21,594.00	

Savings Analysis

EEM #	PROPOSED MEASURES	Electric Savings			TI
		kW	kWh/yr	\$/yr	
1	Energy Management System	0.000	15,123	\$2,722.14	
	Total	0.000	15,123	\$2,722.14	



Ellie Kowal / Energy Specialist
Ellie.Kowal@WorldEnergyES.com / +1.508.320.7964

World Energy Efficiency Services
 Office: +1.774.420.2764 / Fax: +1.774.420.2768
 24 Rockdale Street, Worcester, MA 01606
www.WorldEnergyES.com

This e-mail is intended only for the named recipient(s) and may contain information that is privileged, confidential and/or exempt from disclosure under applicable law. No waiver of privilege, confidence or otherwise is intended by virtue of communication via the internet. Any unauthorized use, dissemination or copying is strictly prohibited. If you have received this e-mail in error, or are not named as a recipient, please immediately notify the sender and destroy all copies of this e-mail. Thank you.

From: Ellie Kowal
Sent: Wednesday, May 31, 2017 4:27 PM
To: 'Susan Edmonds'
Subject: Energy Management System
Importance: High

Hi Sue,

Sorry for my delay. We spoke last week regarding the Milford Public Library and the opportunity to upgrade its existing energy management system. I do not believe you need to replace your existing Air Handler Unit (AHU).

World Energy recommends implementing a JCI FX80 building automation system. This BACnet system will enable opportunities to improve the library's efficiency. World Energy will provide a graphical interface and web access. The new JCI system will include a JCI FX80 supervisory controller and 10 new thermostats, one for each zone on the AHU. They are not wireless, but a few thermostats located in office spaces will have occupancy sensors to change the HVAC system to 'occupied mode' when someone is in the space outside of normal, scheduled hours. The end result will be a web enabled, fully integrated building that will provide effective and efficient operations.

That being said, I have provided some estimated financials below. I am working with both National Grid (electric) and EverSource (gas) for incentives and each utility offers rebates in a different way. National Grid offers a \$300 rebate per point of control (i.e. thermostats) and EverSource offers \$1.75 per therm saved. I'm estimating a \$3,000 incentive from National Grid and a \$4,326 incentive from EverSource, for a total of \$7,326.00. In order for me to get a firm incentive number for you, I have to submit my energy savings calculations to both utilities so they can vet my calculations. In order to submit my calculations, I will need to submit each of the attached applications along with my calculations. I will need you to sign each of the attached applications – The EMS Application is for National Grid and the Custom Application is for EverSource. Please complete the applications in the following areas, page 3 of the EMS app and page 2 on the custom, both areas that need to be completed are the same on each application. Signing the application does not bind the town or Library to move forward with these efficiency projects, it simply allows me to submit my calculations on your behalf.

- **Payment Method**

- please write in your FID #
- Select company type

- **Customer Acceptance of Terms – Pre-Installation Section**

- Select the box that you certify all statements are correct
- Date, print & sign

EEM #	PROPOSED MEASURES	Total Energy Savings	O&M Savings	Pre-Tax Price	Es In
		\$/yr	\$/yr	\$	
1	Energy Management System	\$5,441.34	\$0.00	\$23,600.00	
	Total	\$5,441.34	\$0.00	\$23,600.00	

Savings Analysis

EEM #	PROPOSED MEASURES	Electric Savings			TI
		kV	kWh/gr	\$/gr	
1	Energy Management System	0.000	15,123	\$2,722.14	
	Total	0.000	15,123	\$2,722.14	

I hope this makes sense, I know this process can be confusing so if you have any questions, please just let me know!

Regards,



Ellie Kowal / Energy Specialist
Ellie.Kowal@WorldEnergyES.com / +1.508.320.7964

World Energy Efficiency Services
 Office: +1.774.420.2764 / Fax: +1.774.420.2768
 24 Rockdale Street, Worcester, MA 01606
www.WorldEnergyES.com

This e-mail is intended only for the named recipient(s) and may contain information that is privileged, confidential and/or exempt from disclosure under applicable law. No waiver of privilege, confidence or otherwise is intended by virtue of communication via the internet. Any unauthorized use, dissemination or copying is strictly prohibited. If you have received this e-mail in error, or are not named as a recipient, please immediately notify the sender and destroy all copies of this e-mail. Thank you.

--
 Susan L. Edmonds
 Director Milford Town Library
 80 Spruce St, MA 01757
 508-473-2145 ext.210
sedmond@cwmar.org
 Fax: 508 473 8651

FX80 Supervisory Controller Product Bulletin

Code No. LIT-12012250

Issued January 2017

Refer to the [QuickLIT Web site](#) for the most up-to-date version of this document.

Overview

The FX80 Supervisory Controller is a web-based supervisory-class controller in the Facility Explorer product family. The FX80 controller manages networks of field controllers using open communication protocols, such as BACnet®, LonWorks®, and N2 protocols. The FX80 controller supports a full set of building automation features, such as scheduling, alarming, historical data collection and management, data sharing, energy management, totalization, customized control routines, tagging, templates, search, and hierarchies, which are specifically designed for commercial facilities.

Each FX80 controller includes a graphical system user interface with an HTML5 web profile, a configuration tool that you can access with the web browser, and robust security. Remote access is easily achieved using a wired or wireless connection from the Internet or intranet. Multiple users can concurrently connect to the FX80 controller. You can manage security and presentation preferences through user profiles, login IDs, and passwords.

The FX80 Supervisory Controller is a compact DIN rail mountable controller with the capability for remote external input and output points.

In addition, the FX80 controller's hardware and software design is modular, so you can plug in accessories, such as communications option modules, if needed. Device and point licensing options allow you to select the device and point capacity most appropriate for the size of your facility and those options best needed to control it. And, in many cases, future expansions do not require the replacement of hardware.

Figure 1: FX80 Supervisory Controller



FX80 Features and Benefits

- **Fully Commissioned and Licensed Out of the Box**—Power up, connect to a web browser, change default passwords, set up network parameters, and start adding your field controllers.
- **Web-Based User Interface**—Provides rich, graphical displays for system operation and analysis.
- **Adoption of Industry Standard Communication Protocols**—Allows for the integration of a wide variety of field controllers, including Facility Explorer field controllers and controllers provided by others without intermediate gateways or translators.
- **Embedded Configuration Tool**—Requires no proprietary or desktop software to configure the FX80 controller. You only need a web browser for basic configuration and monitoring.
- **Modular Design**—Allows you to select only those components needed to meet specific project requirements.
- **Small, Compact Design**—Installs easily.
- **FX Workbench**—Reduces engineering and installation time by easily and quickly creating the FX80 database from field controller configurations offline.
- **Niagara® Analytics**—Allows you to apply a variety of analytic algorithms and diagnostics to both historical and real-time data.

FX80 Supervisory Controller

The FX80 Supervisory Controller provides integrated control supervision and network management services for one or more local networks of field controllers, and provides direct control over inputs and outputs. The FX80 controller uses these interfaces to monitor and control HVAC, lighting, and other electrical systems to:

- provide system-wide coordination
- improve occupant comfort
- annunciate off-normal and alarm conditions
- reduce energy usage
- optimize operating efficiencies

Each FX80 controller includes a user interface with an HTML5 web profile, a configuration tool that you can access with the web browser, and robust security. Remote access is easily achieved using a wired or wireless connection.

The FX80 controller organizes system information into displays, reports, and graphics that you can access by using a web browser.

The FX80 controller is housed in compact, DIN rail mount enclosures. Its controller capacity and performance requirements make it ideally suited for:

- supervisory control of small- to large-sized facilities
- distributed supervisory control within larger facilities or between facilities

Communication Interfaces

The FX80 controller supports multiple onboard and optional communication interfaces, which enable the FX80 controller to integrate many different types of field controllers, as well as provide different methods of remote user access.

The FX80 controller includes the following onboard communication hardware interfaces:

- Wi-Fi (for use as a Client or an Access Point)
 - IEEE802.11a/b/g/n
 - IEEE802.11n HT20 at 2.4GHz
 - IEEE802.11n HT20/HT40 at 5GHz
 - Configurable radio (Off, Wireless Application Protocol [WAP], or Client)
 - WPA2PSK/WPA2PSK supported
- Two 10/100 MB Ethernet ports
- Two isolated RS-485 ports with selectable bias and termination
- USB Type A (for backup and restore)
- Micro USB (for serial debug connection)

The FX80 controller also provides the ability for you to separately order and install optional modules to obtain additional communication hardware interfaces, including the following:

- Dual port, isolated RS-485 communication module (up to 2 maximum)
- LONWORKS FTT-10A communication module (up to 4 maximum)
- RS-232 communication module (up to 4 maximum)

Figure 2: Optional Communication Module Positions

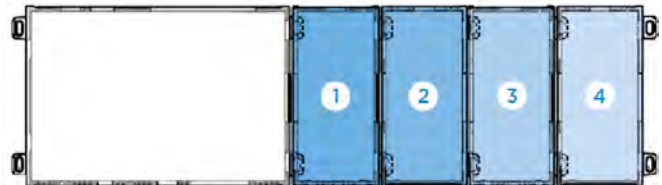


Table 1: Maximum Combinations of Optional Communication Modules

Optional Communication Module Position				
Maximum Configuration Option	1	2	3	4
A	RS-232 or LONWORKS protocol	RS-232 or LONWORKS protocol	RS-232 or LONWORKS protocol	RS-232 or LONWORKS protocol
B	Dual port RS-485	RS-232 or LONWORKS protocol	RS-232 or LONWORKS protocol	RS-232 or LONWORKS protocol
C	Dual port RS-485	Dual port RS-485	RS-232 or LONWORKS protocol	NA
D	Dual port RS-485	Dual port RS-485	NA	NA

Support Networking Protocols

The FX80 controller can use network protocol driver software to obtain and model external device data. The FX80 controller licenses include the following network driver features enabled as standard:

- Johnson Controls N2 (exclusive to FX80)
- BACnet Master-Slave/Token-Passing (MS/TP)
- BACnet IP Client and Server
- Modbus® Remote Terminal Unit (RTU) Client and Server
- Modbus Transmission Control Protocol (TCP) Client and Server
- LONWORKS FTT-10A (requires LONWORKS communication module)

- LONWORKS over IP
- M-Bus
- EIB/KNX
- Simple Network Management Protocol (SNMP)

You can purchase the optional **Carrier CCN** network protocol driver feature and add it to the FX80 controller license. Also available for purchase is an AX license, which allows the FX80 controller to run Niagara AX software. This is typically required if you want to use an FX80 to replace other types of FX Supervisory Controllers on an existing site.

Inputs/Outputs (I/O)

In addition to obtaining data from field devices using network communication services, the FX80 controller also supports obtaining information, using remote inputs and outputs.

Remote I/O (RIO16)

All FX Supervisory Controllers support the optional Remote I/O (RIO) module. The RIO communicates to the FX Supervisory Controller through RS-485 and contains the following I/O:

- 8 universal inputs
- 4 relay outputs
- 4 analog outputs

Building Automation Control Features

The FX80 Supervisory Controllers transform data obtained from network device integrations and direct I/O into a common set of data types, allowing you to apply the FX80 controller's full set of building automation control features (including scheduling, alarming, histories, energy management, totalization, and custom control logic) consistently to all data points, regardless of their source.

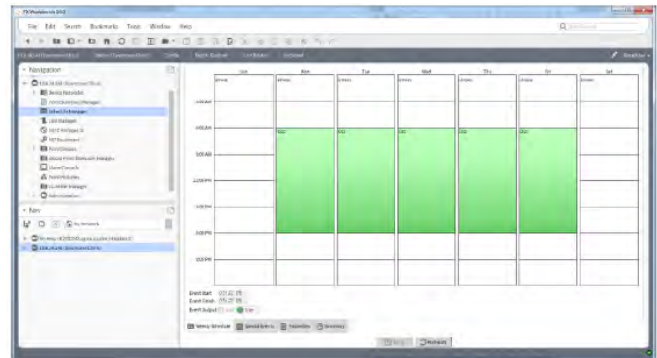
Scheduling

You can configure the FX80 controller to automate various functions within a facility based on a time schedule. Some examples include:

- determining the expected occupancy periods
- starting or stopping HVAC equipment
- turning lights on and off

You can link any writable point in the FX80 controller system database to a schedule. The scheduler interface provides a visually intuitive method for you to configure the daily, weekly, and exception (holiday) schedules.

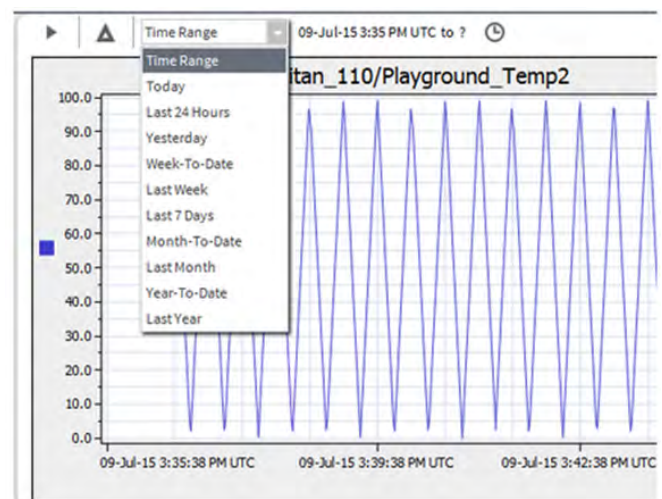
Figure 3: Scheduler



Histories

The Histories feature allows the FX80 controller to collect, store, and display pertinent system data for analysis, such as control performance indication, energy consumption, and system troubleshooting. You can configure the FX80 controller to create a history on any data point in its system database. Histories are presented either graphically or in a sortable table, and you can export the data in a TXT, PDF, or CSV format.

Figure 4: Histories



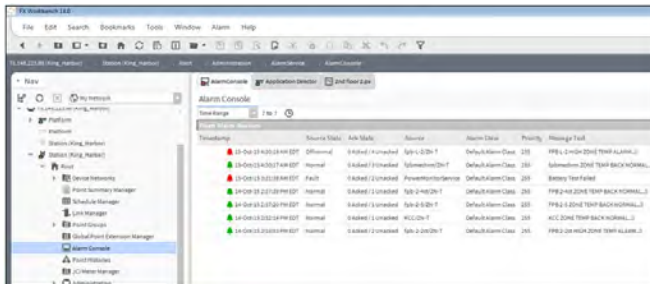
Alarming

The Alarming feature enables the FX80 controller to initiate, route, and manage alarms and events according to user-defined criteria. You can configure the FX80 controller to generate alarms on any data point in its system database. Each alarm record contains valuable information, including the alarm and return-to-normal time and date, time duration in current state, text description, and alarm class.

You can classify alarms so that alarms with similar characteristics are routed to common recipients. You can also create multiple alarm classes to provide a variety of alarm routing options, such as to the browser-based Alarm Console or to an email address. Alarm recipients have a variety of options to manage alarms, including sorting, acknowledging, silencing, and tagging.

You can route alarms to the people who need them based on schedules and on-call lists. These lists can be prioritized and escalated based on the recipient's actions. These actions include delivery and acknowledgment through email and SMS.

Figure 5: Alarm Console



Energy Management

The FX80 controller features several energy management functions, which you can enable and configure, including:

- electrical demand limiting/load shedding
- optimized start/stop
- free cooling determination

Totalization

The Totalization feature enables the FX Supervisory Controller to accumulate data over a period of time. You can add a totalization extension to any data point in the FX Supervisory Controller system database to summarize runtime, accumulate change of state counts, or summarize dynamic analog data. Totalized data is presented in a sortable table, and you can export it in a TXT, PDF, or CSV file format.

Tagging and Templating

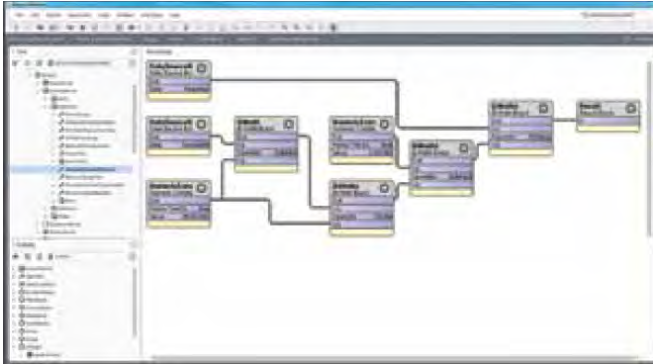
Metadata tagging provides ways for you to find data, through search and navigation hierarchies, as well as providing ways to narrow results by filtering the data. Similarly, creating templates using pre-tagged devices results in built-in reusability which translates to shorter integration time.

Niagara Analytics

Niagara Analytics is a data analytics extension to the Niagara Framework® available on FX Supervisory Software. Niagara Analytics gives FX80 users the ability to apply a variety of analytic algorithms and diagnostics to both historical and real-time data available. At FX Supervisory Software Release 14.2, every FX80 is licensed for 25 analytic objects.

- **Algorithm Library**—The algorithm library has a group of predefined algorithms that you can customize and extend to meet the specific needs of the site. Also provided are more than 40 functional and mathematical blocks to help you design and create your own custom algorithms. Use your algorithm to evaluate a single piece of equipment or all pieces of equipment in your enterprise, then save your entire analytics operation as a template and redeploy as often as needed.
- **Intuitive Programming**—You can drag and drop algorithms onto the wiresheet from the Analytics palette.
- **Real-time, On-Premise Analytics Control**—You can run on-site analytics directly on the FX80 Supervisory Controller to identify a situation and make a change in real time, which enables you to make faster decisions while conserving computing power. Results can then be pushed up to the server to make changes across the enterprise.
- **Automated-Control Strategies**—Advanced alarming can collect data from multiple real-time data sources, and can make intelligent decisions based on custom algorithms and therefore provide a more sophisticated analysis. This process eliminates many end-user nuisance alarms.

Figure 6: Analytics



Customized Control Logic

The FX80 controller includes a library of control logic modules that you can enable, configure, and link together to create your own customized control routines. Some examples of the available control logic modules include the following:

- Boolean logic (AND, OR, XOR, NOT)
- comparative (greater than, less than, equal, not equal)
- mathematical (add, subtract, multiply, divide, average, negative)
- sequencers
- Proportional-Integral-Derivative (PID) control
- on/off control

Web-Based User Interface

The FX Supervisory Controller's web-based user interface (Web UI) provides system-wide monitoring and control capability using a web browser. The Web UI capability is embedded in every FX Supervisory Controller, allowing users to access the system using a web browser over an Ethernet LAN, Internet.

When you create your Web UI pages, you can choose from a full library of colorful, graphical symbols including:

- HVAC equipment
- duct work
- coils
- piping
- control devices (for example, dampers or valves)
- widgets (for example, buttons, tables, or hyperlinks)

In addition, you can import your own digital images (for example, a floorplan JPEG) and incorporate them into your Web UI.

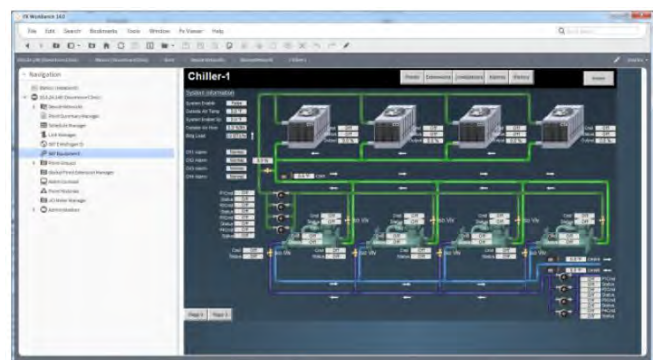
FX Workbench provides you with two sets of factory designed, standard application graphics to include in your Web UI. One set is designed for viewing with a full-sized computer screen, and the other set is optimized for viewing with a smartphone-sized device like an iPhone®, iPod touch®, or an iPad® (and most other similarly sized) handheld device. When you import a controller with a standard application, both sets of graphics can be **automatically generated**.

You can view devices, points, schedules, alarms, and graphics with the convenience of a wireless handheld device. You can also acknowledge alarms, command points, and modify schedules. The user interface updates dynamically, so that when changes are made to the FX Supervisor configuration, these changes automatically appear. An automated configuration assistant is available to help set the correct screen size for many handheld devices.

Figure 7: Mobile Web UI



Figure 8: Full Size Web UI



FX Workbench

FX Workbench is a software application that allows users to configure the FX80 controller. FX Workbench is embedded in every FX80 controller and is served up to web browsers of authorized users. In addition, you can purchase FX Workbench as a separate software application residing on a computer.

Users can configure the FX80 controller online while directly or remotely connected with FX Workbench.

FX Workbench includes many labor-saving configuration features, such as:

- importing of FX-PC Series configuration files to create the point database, graphics, point and alarm summaries, Histories, and Trend graphs
- online discovery of LONWORKS and BACnet devices and points
- online discovery of N2 devices with assisted importing of N2 points
- a check box method to enable and disable points and create point extensions, such as alarms, histories, and totalizations
- intuitive managers for grouping points, creating master schedules, and linking points
- a library of predefined systems, with associated graphics, points list, and default features
- automated graphic page creation

Figure 9: Example of a Facility Explorer Configuration

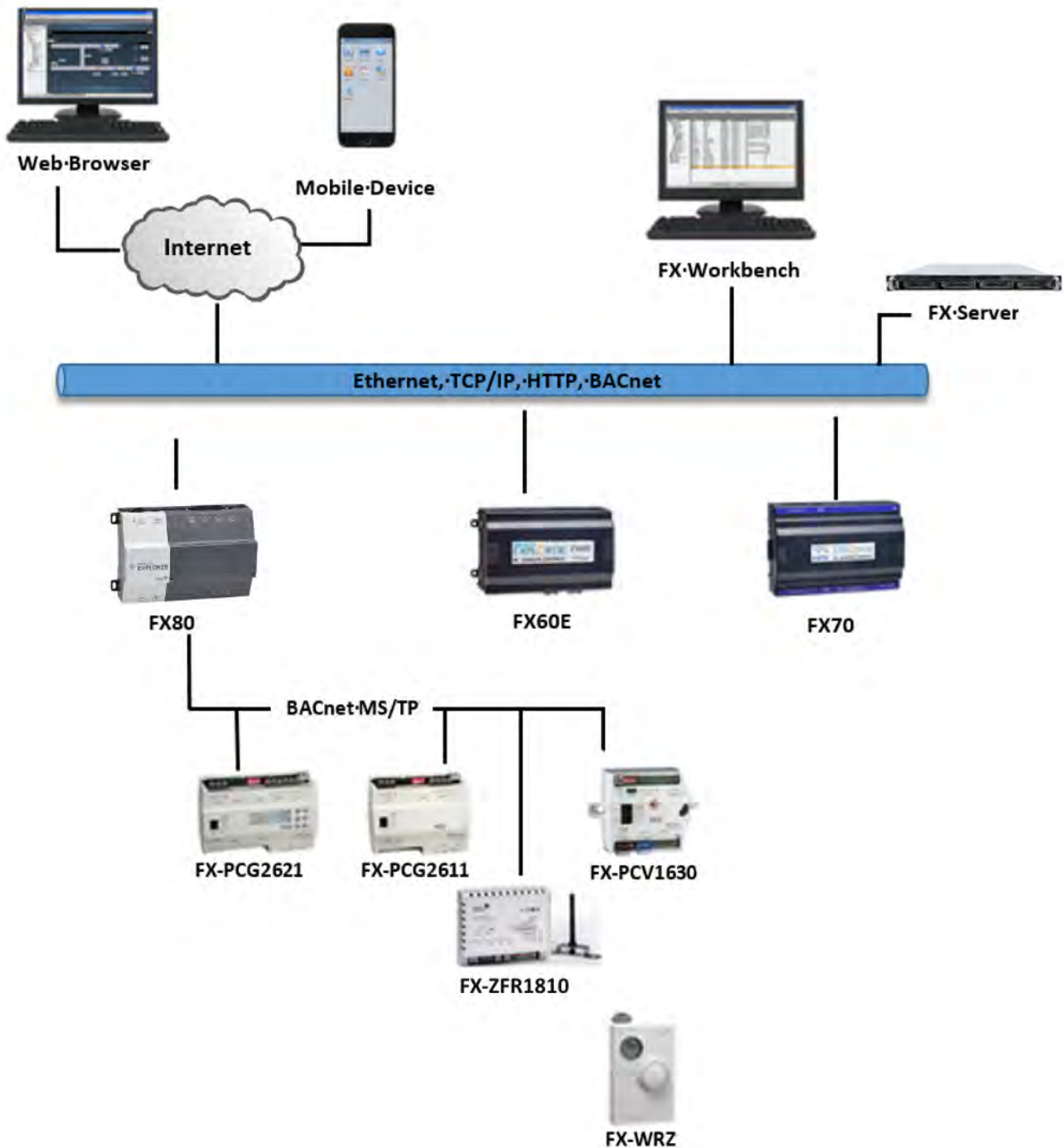


Table 2: FX80 Supervisory Controller Ordering Information

Product Code Number	Description
FX-SC8BASE-0	FX80 Supervisory Controller and micro Secure Digital (SD) card, licensing required and purchased separately
FX-SC8BASE-700	Replacement FX80 Supervisory Controller, no micro SD card, no licenses
FX-SC8BWW-0¹	FX80 Supervisory Controller Case, World Wide WLAN
FX-SC8BDWIFI-0	FX80 Supervisory Controller Case, Disabled WLAN

¹ The FX80 World Wide Controller is intended and only orderable outside of North America.

Table 3: FX80 Core Device Licenses Ordering Information

Product Code Number ¹	Description ²
FX-SC8CL005-0	FX80 Supervisory Controller core device license, 5 field devices, 250 points
FX-SC8CL010-0	FX80 Supervisory Controller core device license, 10 field devices, 500 points
FX-SC8CL025-0	FX80 Supervisory Controller core device license, 25 field devices, 1,250 points
FX-SC8CL100-0	FX80 Supervisory Controller core device license, 100 field devices, 5,000 points
FX-SC8CL200-0	FX80 Supervisory Controller core device license, 200 field devices, 10,000 points
FX-SC8CLDEMO-0	FX80 Supervisory Controller demo license, 500 field devices, 25,000 points. Enables all features needed to engineer and demonstrate FX Supervisory Controllers and FX Server stations. Intended for installing contractors. Requires annual support fee. Expires yearly.

¹ Each FX80 controller requires the purchase of a single core device license.

² Device licenses are also dependent on point (proxy) counts. For each device that is licensed, 50 points are licensed. A 5-device core license also licenses 250 points. This could satisfy five devices with 25 points each or three devices with 80 points each. For three devices with 90 points each, you need to purchase the 10-device core license (or add a 5-device additional license to the 5-device core license).

Table 4: New FX80 Controller Software Maintenance Ordering Information

Product Code Number	Description ¹
FX-SC8D005M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D010M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D025M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D100M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D200M1-0	Initial 1 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity

Table 4: New FX80 Controller Software Maintenance Ordering Information

Product Code Number	Description ¹
FX-SC8D200M3-0	Initial 3 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M5-0	Initial 5 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity

1 Device capacity is equal to the sum of the core device license and any additional device license applied to the FX80 controller. Select the device capacity that is equal or lesser than the sum.

Table 5: FX80 Controller Software Maintenance (Post Initial) Ordering Information

Product Code Number	Description ¹
FX-SC8D005M1-6	1 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M3-6	3 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D005M5-6	5 year software maintenance for FX80 Supervisory Controller with 5–9 field device capacity
FX-SC8D010M1-6	1 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M3-6	3 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D010M5-6	5 year software maintenance for FX80 Supervisory Controller with 10–24 field device capacity
FX-SC8D025M1-6	1 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M3-6	3 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D025M5-6	5 year software maintenance for FX80 Supervisory Controller with 25–99 field device capacity
FX-SC8D100M1-6	1 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M3-6	3 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D100M5-6	5 year software maintenance for FX80 Supervisory Controller with 100–199 field device capacity
FX-SC8D200M1-6	1 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M3-6	3 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity
FX-SC8D200M5-6	5 year software maintenance for FX80 Supervisory Controller with 200 and up field device capacity.

1 Device capacity is equal to the sum of the core device license and any additional device applied to the FX80 controller. Select the device capacity that is equal or lesser than the sum.

Table 6: FX80 Controller Additional Field Device Licenses Ordering Information

Product Code Number ¹	Description
Initial Purchase	
FX-SC8DL10-0	License enabling an additional 10 field devices, 500 points for one FX80, initial purchase only
FX-SC8DL25-0	License enabling an additional 25 field devices, 1,250 points for one FX80, initial purchase only
FX-SC8DL50-0	License enabling an additional 50 field devices, 2,500 points for one FX80, initial purchase only
After Initial Purchase	
FX-SC8DL10-6	License enabling an additional 10 field devices, 500 points for one FX80. Upgrade after initial purchase.
FX-SC8DL25-6	License enabling an additional 25 field devices, 1,250 points for one FX80. Upgrade after initial purchase.
FX-SC8DL50-6	License enabling an additional 50 field devices, 2,500 points for one FX80. Upgrade after initial purchase.

1 Additional devices are used to expand capacity from the core device license. For example, you can order the FX-SC8DL25-0 with the FX-SC8CL025-0 for a total of 50 devices, 2500 points.

Table 7: Niagara Analytics Licenses Ordering Information

Product Code Number ¹	Description
FX-ASCL100-0	License enabling 100 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL250-0	License enabling 250 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL500-0	License enabling 500 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater
FX-ASCL1000-0	License enabling 1,000 analytic points for Niagara Analytics on an FX80 Supervisory Controller at FX Supervisory Family Software Release 14.2 or greater

1 Niagara Analytics products require Niagara Analytics N4 certification. Niagara Analytics certification training requires Niagara 4 TCP Certification.

Table 8: FX80 Supporting Software Ordering Information

Product Code Number	Description
FX-WBALM-0	License enabling Alarm Portal Client for FX Supervisory Family Software Release 14.2 or greater

Table 9: FX80 Controller Software Accessories Ordering Information

Product Code Number	Description
FX-SC8LCCN-0	License enabling Carrier® Communication/Comfort Network (CCN) driver for one FX80 Supervisory Controller; initial purchase
FX-SC8LAX-0	License enabling AX 3.8 downgrade for one FX80; initial purchase
FX-SC8LCCN-6	License enabling Carrier CCN driver for one FX80. Upgrade after initial purchase
FX-SC8LAX-6	License enabling AX 3.8 downgrade for one FX80. Upgrade after initial purchase
FX-SC8LAC-6¹	License enabling AC256 over RS-232 or RS-485 driver
FX-SC8LAINF-6	License enabling Andover® Infinity driver
FX-SC8LAPHP-6	License enabling American Auto-Matrix™ PHP over RS-232 or RS-485 driver
FX-SC8LAPUP-6	License enabling American Auto-Matrix™ PUP over RS-232 or RS-485 driver
FX-SC8LFLEX-6	License enabling Flex driver over RS-232 or RS-485
FX-SC8LGlob-6²	License enabling control of IR AV equipment through an RS-232 to Global Cache FC module
FX-SC8LHELV-6²	License enabling Helvar lighting control driver
FX-SC8LHORT-6²	License enabling European Hortsmann meter driver
FX-SC8LJOS-6²	License enabling Josam® grease trap sensor driver
FX-SC8LLANG-6²	License enabling Lang Oven RS-232 or RS-485 driver
FX-SC8LMCQ-6	License enabling McQuay® driver to OPM driver
FX-SC8LSMS-6²	License enabling SMS alarms through Global System for Mobile Communication (GSM)/General Packet Radio Services (GPRS) modem to RS-232 serial port driver
FX-SC8LVDRT-6²	License enabling Veeder-Root® RS-232 or RS-485 driver

1 Available in Beta version only.

2 Drivers supported at **FX Supervisory Family Software Release 6.3 only**. These drivers are **not** supported at FX Supervisory Family Software Release 14.x.

Table 10: FX80 Controller Hardware Accessories Ordering Information

Product Code Number	Description
FX-SC8SD-700	FX80 micro SD replacement (micro SD only). No licenses.
FX-SC8XLON-0	LONWORKS FX80 expansion module for the FX80 Supervisory Controller
FX-SC8XD485-0	Dual port isolated RS-485 expansion module for the FX80 Supervisory Controller
FX-SC8X232-0	RS-232 expansion module for the FX80 Supervisory Controller
LP-FXRIO16-0	Remote input/output module for the FX Supervisory Controllers. Includes 8 universal inputs, 4 relay outputs, and four 0-10 V analog outputs
FX-SC8AKIT-700	FX80 accessory kit Including replacement connectors
FX-SC8XKIT-700	FX80 expansion module kit including one size fits all replacement connector
FX-SC8XPS-0	FX80 universal wall mount power supply 100–240 VAC/24 V includes United States, Europe, United Kingdom, and Australia style plugs.
FX-SC8WKIT-700	Extension cable and bracket for FX80 WLAN

Technical Specifications

Table 11: FX80 Supervisory Controller

Enclosure/ Mounting	Plastic/DIN Rail
Dimension	8.5 x 6 x 2.625 in. (216 x 152 x 68 mm)
Power Supply	24VAC/DC
Processor	TI AM3352: 1000MHz ARM® Cortex™ A8
RAM Memory	1 GB DDR3 SD RAM
Flash Memory	Removable micro-SD card with 4GB flash total storage, 2 GB user storage
Environment	Operating Temperature: -4 to 140°F (-20 to 60°C) Storage Temperature: -40 to 185°F (-40 to 85°C) Relative Humidity: 5 to 95%, noncondensing
Onboard	2 Ethernet 10/100 Mbps; 2 RS-485 (Isolated); 1 USB, 1 Micro USB, Fast USB Bus; Wi-Fi
	Plug-in options: Dual port RS-485 (Isolated) ; LON FT/TP-10; RS-232
Network Drivers	
Embedded	N2, BACnet, Niagara
Direct I/O	
Onboard	None
Optional	Up to 256 by using 16 Remote I/O Modules (FXRIO16)
Local (NDIO)	None
Remote I/O	Up to 256 I/O by using 16 Remote I/O Modules (FXRIO16)
Compliance CE	United States UL Listed, File E107041, CCN PAZX, under UL 916, Energy Management Equipment FCC compliant to CFR 47, part 15, subpart C, Class B
	Canada UL Listed, File E107041, CCN PAZX7, under CSA C22.2 No. 205, Signal Equipment Industry Canada compliant to ICES-003
	Europe CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.

United States Emissions Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Emissions Compliance

This Class (B) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la Classe (B) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Table 12: Remote Input Output Modules

Product Codes	LP-FXRIO16-0: 8 universal inputs, 4 relay outputs, 4 analog outputs
Dimensions	4 x 3.625 x 2.625 in. (10.16 x 9.2 x 6.7 cm)
Universal Input Types Supported	<p>10k ohm Type 3 thermistors. Thermistor Sensor Range: -10 to 240° F (-23.3 to 115.5° C). Input accuracy is in the range of $\pm 1\%$ of span. Characteristic curve is customizable.</p> <p>0–10 V; accuracy is $\pm 2\%$ of span, without user calibration; uses an external resistor for current input (four provided, mounted by installer on terminal connections)</p> <p>4–20 mA current loop; accuracy is $\pm 2\%$ of span, without user calibration; self-powered or board-powered sensors accepted</p> <p>Dry contact: V open circuit, 300- μA short-circuit current</p> <p>Pulsing dry contact at a rate of up to 20 Hz; 50% duty cycle</p>
Digital Outputs	<p>Form A relay contacts suitable for on/off control only; floating control not supported</p> <p>Maximum voltage 30 volts AC or DC, 1/2 A maximum current rating</p>
Analog Outputs	<p>0–10 V DC</p> <p>Minimum load supported per output is 2,500 ohms minimum or 4 mA drain maximum</p>

Table 13: FX Workbench Requirements

Processor¹	<p>Intel® Pentium® 4, 1 GHz or higher</p> <p>4 x 3.625 x 2.625 in. (10.16 x 9.2 x 6.7 cm)</p>
Operating System	<p>32-bit: Windows® 10 Pro or Enterprise, Windows 8 Pro or Enterprise, Windows 7 Professional, Enterprise, or Ultimate, or Windows XP® Professional</p> <p>64-bit: Windows® 10 Pro or Enterprise, Windows 8.1 Pro or Enterprise, Windows 8 Pro or Enterprise, Windows 7 Professional, Enterprise, or Ultimate, Windows Server 2012 Standard or Enterprise with SP2, or Windows Server® 2012 R2 Standard or Enterprise with SP2</p>
Memory	1 GB minimum, 4 GB or more recommended for larger systems
Hard Disk	4 GB minimum, more recommended depending on archiving requirements
Network Support	Ethernet 10/100 Mbps with RJ-45 connector

¹ The information in this table applies to both the FX Supervisory Software Release 14.1 and FX Supervisory Software Release 6.x **if** using the AX license



Building Technologies & Solutions
507 E. Michigan Street, Milwaukee, WI 53202

*Johnson Controls® is a registered trademark of Johnson Controls.
All other marks herein are the marks of their respective owners. © 2017 Johnson Controls*

Jennifer.M.DeManche@hotmail.com

From: Susan Edmonds <sedmonds@cwmars.org>
Sent: Tuesday, June 13, 2017 10:33 AM
To: Jennifer DeManche
Subject: Fwd: Bids For The Paving Of The Library Parking Lots
Attachments: winmail.dat

Scott Email and Brazza Quote

----- Forwarded message -----

From: Scott Crisafulli <SCrisafulli@townofmilford.com>
Date: Mon, Mar 27, 2017 at 1:18 PM
Subject: Re: Bids For The Paving Of The Library Parking Lots
To: Susan Edmonds <sedmonds@cwmars.org>

Hi Susan,

There is no need for other quotes. Braza has a contract with the town for all grinding and repaving during the FY17 season. If need Zach has the signed contracts and we do also. The curbs are part of Brazas quote. We will need up to \$10,000 for the hot top and materials to complete the staff Parking lot. The \$10,000 will cover the line painting also. We have a yearly bid for line painting also.

Add the \$10,000 to the \$29,000 and you should be all set. We are hoping to start in your staff parking lot ASAP.

Regards,
Scott J. Crisafulli
Highway Surveyor

On Mar 27, 2017, at 11:30 AM, Susan Edmonds <sedmonds@cwmars.org<<mailto:sedmonds@cwmars.org>>> wrote:

Good Morning Scott:

I would like to finalize the paving of the library's parking lots. The library is meeting with the Capital Planning subcommittee in early May and 2 more quotes are need for the project.

The quote from Brazza Paving is \$29,000 for the patron parking lot. Does the quote include:

- * Is striping included in the quote. If not will Highway stripe the parking lots?
- * Replacement of curbing. Four curbs are missing in the public parking lot, who will replace the curbing
- * Additional quotes needed needed

The email dated 1/17/17 states the Highway Department Budget will cover the \$10,000 for the paving of the staff parking lot. The library Finance subcommittee would like to know if an additional \$10,000 needs to be added to the Highway Department budget or is a capital expense. If the \$10,000 is considered a capital expense, the amount requested is \$40,000 and numerous bids must be done.

Can you please suggest other vendors to contact for 2 additional quotes for the patron parking lot. Also please send

another email clarifying the status of the \$10,000 being used for the staff parking lot paving project.

Thank you for your help.

Sue

Hi Sue,

I will have the striping done under the town bid, that will be included in the \$10,000 for the other parking lot. The \$10,000 for pavement is off Brazas yearly contract for paving along with the line painting contract from our painting contractor. I can give you the measurements and the sq yd price? I cannot give you an accurate quote until we actually do the regrading for the new section however \$10,000 is enough to complete the job.

Regards,
Scott J. Crisafulli
Highway Surveyor

--

Susan L. Edmonds
Director Milford Town Library
80 Spruce St, MA 01757
508-473-2145 ext.210
sedmond@cwmmars.org<<mailto:sedmond@cwmmars.org>>
Fax: 508 473 8651

<Brazza Quote 1-12-16.pdf>

--

Susan L. Edmonds
Director Milford Town Library
80 Spruce St, MA 01757
508-473-2145 ext.210
sedmond@cwmmars.org
Fax: 508 473 8651

BRAZA CONSTRUCTION INC.

**132 Central Street
2nd Floor
Milford, MA 01757
508-473-6053**

Estimate

DATE	ESTIMATE NO.
1/12/2017	1195

NAME / ADDRESS
Town Of Milford Highway 30 Front Street Milford, MA 01757

			PROJECT
DESCRIPTION	QTY	COST	TOTAL
MILFORD TOWN LIBRARY Excavate, remove and dispose of existing section of asphalt. Supply and install 3/4" processed gravel. Grade, compact and pave area @ 2 1/2" base coat and 1 1/2" top coat, total of 6900 square feet	180	165.00	29,700.00
NOTE: Dig Safe to Mark Work Area			
		TOTAL	\$29,700.00

SIGNATURE

Memorial Elementary School Playground Renovation Request

1. What is the need?

**Memorial Elementary School
12 Walnut Street
Kindergarten through grade 2
480+ students**

Memorial Elementary School is in need of a playground renovation in the back of the building. Memorial Elementary School is located in the heart of the Milford Town Park and centrally located in our community. Memorial students use this playground daily. The Milford community utilizes this playground after school hours and on weekends. The existing playground is in poor condition and one structure was removed in 2015 due to safety concerns. Below are pictures of the remaining structures:



2. Proposal

We propose to replace the two existing structures and replace the one that was removed for three new playground structures.

The approximate cost to renovate and rebuild the playground located in the back of Memorial School is \$110,000.00. We respectfully request that the Town of Milford match our funds in a joint effort to replace/renovate the playground.

After replacing the front playground in May, 2016, the Memorial School and its PTO again began to actively raise funds for back playground. This was done through town carnivals, a 5K race, National Grid Energy Save Fundraisers, contributions from Celebrate Milford and other generous donors. As of September 8, 2017, the Memorial PTO has raised approximately \$30,000.00 and received a grant in the amount of \$7,000.00 for this project. We will continue our efforts, with a goal of reaching \$50,000.00 by March 1, 2018.

3. Alternatives

- Continue to raise funds through PTO, which could take several years
- Absorb the cost of continuous repair through funds raised
- Remove structures as they continue to fall further into disrepair

4. Steps

- a. Actively fundraise for Project (current amount \$37,000.00)
- b. Update quotes for project from 2 vendors
- c. Create a playground sub-committee (plan and design implementation)
- d. Collaborate with Milford Public Schools Facility Manager, Highway Department, Parks Department
- e. Submit request for matching funds at Town Meeting
- f. If matched, begin community outreach for project build and set a date for renovation / replacement

5. Background Data

Over the past six years, the Memorial PTO has dedicated much of their fundraising efforts to a Playground Fund. In the Spring of 2016, our PTO fully funded the front playground at Memorial School. This playground was a “community build” and was built by parents of Memorial students and members of the Milford community. The front playground was approximately \$26,000.00 and was funded solely by the Memorial PTO’s fundraising efforts. The students at Memorial school, and the community at large love to play on this structure. It is our hope that we can have an equally appealing playground at the rear of the building.

6. Conclusion

It is the recommendation of Memorial School to move forward with the quote from Ultiplay in the amount of \$94,080.00. We partnered with Ultiplay on our first playground project and it was a successful build. Ultiplay is a local company and they offered comprehensive supports and responses throughout the process.

Attached to this proposal, please find a quote from Ultiplay and Kompan.

Ultiplay

Preliminary Design Options Budget

Memorial School - Rear Playground
Milford, MA

9/14/2017

Item Description	Option 1 Design w/UltiPlay Installation	Option 2 Design w/UltiPlay Installation
Custom Composite Structure	\$29,995.00	\$35,700.00
Spinami	\$3,900.00	
Unity Connect Structure	\$13,180.00	\$16,080.00
PlayCubes Structure	\$7,260.00	
Unity Large Overhead Canopy	\$6,100.00	
Unity SpinR	\$7,300.00	
KPE Drive Away Panel	\$3,450.00	\$3,450.00
KPE Rhythm Spinner Panel	\$3,940.00	\$3,940.00
2 Square Picnic Tables	\$1,940.00	
Unity Teeter Tunnel		\$6,800.00
Triple Shoot-Out		\$2,150.00
Unity Slide Climber		\$9,300.00
Borders - to be discussed		
Stencils - Provided by UltiPlay		
Estimated DOT Paint for Stencil Work	\$300.00	\$300.00
Wood Fiber Surfacing - TBD based on design revisions		
Geotextile Fabric - TBD based on design revisions		
Equipment Shipping to Milford, MA - truckload rate	\$1,910.00	\$1,910.00
Demolition of Existing Equip. - TBD		
Estimated Patio Blocks/Concrete for Build		
Community-Build Installation - Playground Equipment		
UltiPlay Installation Fee - Playground Equipment	\$14,380.00	\$14,450.00
Project Total	\$93,655.00	\$94,080.00

Shipping to Milford, MA based on truckload rate
Budget could be altered to reflect possible future promotions if items included
Wood fiber surfacing to be installed as part of community-build
Pricing assumes completion in 2018/would reduce if 2017 completion
Demolition/disposal of existing equipment to be discussed



Memorial
Elementary
School

Sales Representative

Equipment Manufacturer

ultiplay
partia & playgrounds

470 East 374
Lafayette, CA 94501
Toll Free 1.866.675.7526

PLAYWORLD
The world reads play



Memorial
Elementary
School

Sales Representative

Equipment Manufacturer

ultiplay
parks & playgrounds

PO Box 373
Haverhill, MA 01830
Tel: 978-376-5725

PLAYWORLD
The world needs play

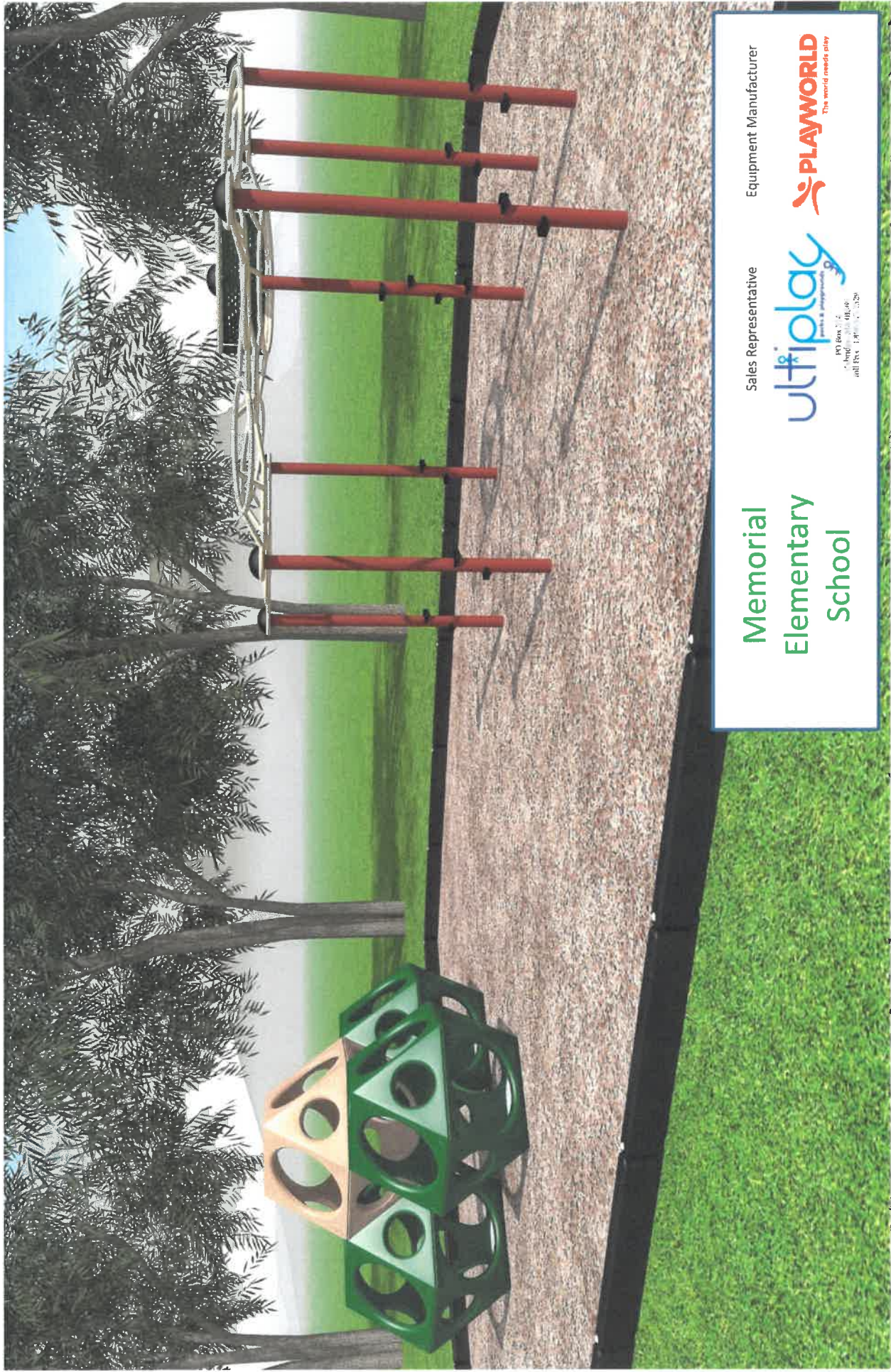


Memorial
Elementary
School

Sales Representative

Equipment Manufacturer





Memorial
Elementary
School

Sales Representative



Equipment Manufacturer





Memorial
Elementary
School

Sales Representative

Equipment Manufacturer

ultiplay
parks & playgrounds

P.O. Box 374
Lubbock, TX 79401
Tel: 806.775.7575

PLAYWORLD
The world reacts play



ULTIPLAY PARK &
PLAYGROUNDS, INC.
P.O. Box 374
Uxbridge, MA 01569
866-575-PLAY

EQUIPMENT SIZE:

USE ZONE:
SEE DWG.

AREA:
SEE DWG.

PERIMETER:
SEE DWG.

FALL HEIGHT:
8 Ft.

USER CAPACITY:
120

AGE GROUP:
5-12

✓ ASTM F1487-11
✓ CPSC #325



PROJECT NO:
09026ML-DLG-OPT1

SCALE:
1/18"=1'-0"

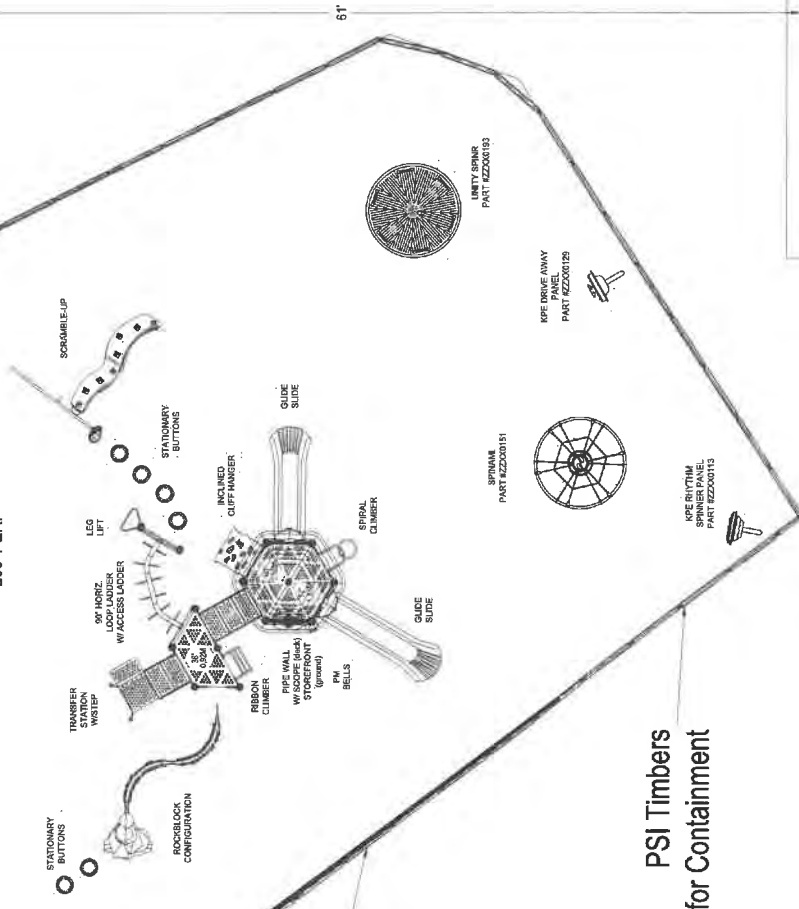
DRAWN BY:
DANA GRUBBS

Paper Size
B

DATE:
31-JAN-17

24" Sewer Drain

APPROXIMATELY
2511 SQ. FT.
200' PER.



Existing
Retaining Wall

PSI Timbers
for Containment

*PLAYGROUND SUPERVISION REQUIRED

MEMORIAL ELEMENTARY SCHOOL
MILFORD, MA

Ultiplay page 7 of 8



ULTIPLAY PARK &
PLAYGROUNDS, INC.
P.O. Box 374
Uxbridge, MA 01569
866-575-PLAY

EQUIPMENT SIZE:

USE ZONE:
SEE DWG.

AREA:
SEE DWG.

PERIMETER:
SEE DWG.

FALL HEIGHT:
8 Ft.

USER CAPACITY:
120

AGE GROUP:
5-12

- ✓ ASTM F1487-11
- ✓ CPSC #325



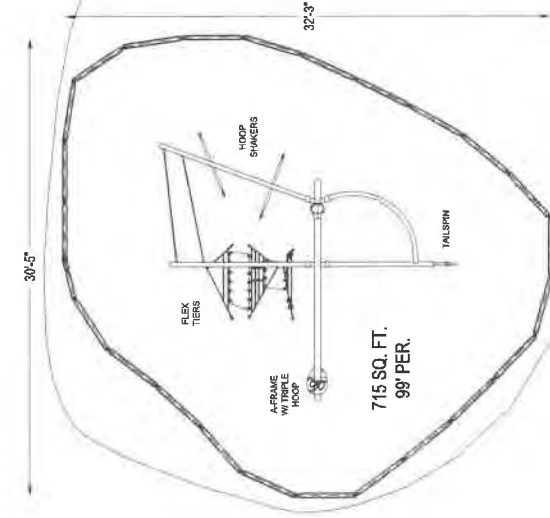
PROJECT NO:
09028MIL-DLG-OPT11

SCALE:
1/18"=1'-0"

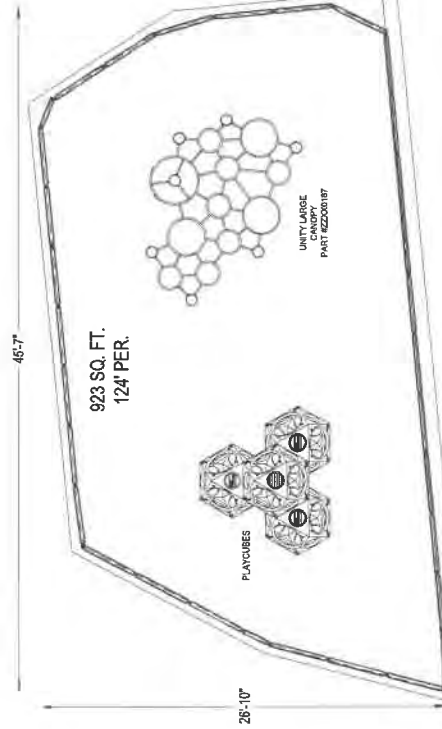
DRAWN BY:
DANA GRUBBS

Paper Size
B

DATE:
31-JAN-17



Usable 64' from corner of bu



*PLAYGROUND SUPERVISION REQUIRED

Ultiplay page 8 of 8

MEMORIAL ELEMENTARY SCHOOL

MILFORD, MA



SALES PROPOSAL



KOMPAN, INC. * 821 Grand Ave Pkwy, Ste 410, Pflugerville, TX 78660 * Tel 1-888-579-8223 * Fax 1-888-579-8224 * www.kompan.com



Date 09/15/17

Expiration Date

Proposal No. SP44054

Project Milford Memorial Elementary

Ship to State/Zip MA 01757

Customer Service Representative Asha Rochwani

Sales Representative Dixon Simmons

Payment Terms DEP50%&N30

Site Location: 320154

Milford Memorial Elementary
12 Walnut Street
Milford, 01757
United States

Invoice-to: 320154

Milford Memorial Elementary
12 Walnut Street
North Milford, MA 01757
United States

Ship-to:

Milford Memorial Elementary
12 Walnut Street
Milford, MA 01757
United States

Qty.	Item No.	Description	Unit Price	Retail Price	Disc. %	Net Price
Massachusetts State Contract #FAC104						
1	PCM111804-0902	MEGA DECK WITH TWO LEVELS	40,640.00	40,640.00	9.00	36,982.40
1	FRE2210-3317	MULTIGOAL 3M	10,030.00	10,030.00	9.00	9,127.30
1	GXY916000-3417	SUPERNOVA - NIGHT SKY BLUE	7,820.00	7,820.00	9.00	7,116.20
3	GXY801421-3717	SPICA 1	2,250.00	6,750.00	9.00	6,142.50
2	ELE400024-3717BL	SPINNER BOWL,BLUE	1,030.00	2,060.00	9.00	1,874.60
1	FRT-PA	Freight Middletown PA	1,773.00	1,773.00		1,773.00
1	CUSTOMINSTALL	Installation of at PW rates 517 man hours at PW \$53.5 p/h	27,659.50	27,659.50		27,659.50
1	PERF. BOND	Performance Bond Charge	1,840.00	1,840.00		1,840.00
Total						92,515.50

Comments:

Charges for permits are not included. An appropriate amount will be added if applicable.

Please provide us with a copy of your tax-exempt certificate if applicable.

Customer is to provide level dirt site, free of underground obstacles.

Customer is responsible for removal of any existing equipment / obstacles prior to installation.

Kompan
page 1 of 2

Customer is responsible for resilient surfacing appropriate to the height of the equipment.
Please do not install any surfacing materials prior to the equipment dig and installation process.
The site should be as level as possible, and MUST have no more than a 1" (inch) in 10' (feet) slope
or change in elevation over the full length and width of the playground area.
Price assumes NO overhead (13'6" or lower) or underground (within 3'6" of surface) obstacles.
This quote assumes direct delivery.
Please allow 8-10 weeks for product delivery upon order placement.

Summary:

	Retail Price	Discount	Net Price
Subtotal - KOMPAN Products	67,300.00	6,057.00	61,243.00
Subtotal - Other Products	1,840.00	0.00	1,840.00
Subtotal - Surfacing	0.00	0.00	0.00
Subtotal - Installation & Other Services	27,659.50	0.00	27,659.50
Subtotal - Freight	1,773.00	0.00	1,773.00
Subtotal	98,572.50	6,057.00	92,515.50

Estimated Tax Rate	{Applicable sales tax will be added unless a valid tax exemption certificate is provided. This amount is only an estimate of your tax liability.}	0.00
Total		92,515.50

Your acceptance of this proposal constitutes a valid order request and includes acceptance of terms and conditions contained within the Master Agreement, which is hereby acknowledged. Acceptance of this proposal by KOMPAN is acknowledged by issuance of an order confirmation by an authorized KOMPAN representative. Prices in this quotation are good for 60 days.

This proposal may be withdrawn if not accepted by 07/23/16.

KOMPAN Products are "Buy American" qualified, and compliant with the Buy American Act of 1933 and the "Buy American" provision of the ARRA of 2009.

KOMPAN Authorized Signature:

Accepted By (signature):

Accepted By (please print):

Date:

Kompan
page 2 of 2

2. Capital Item: Alarm/Surveillance/Intercom System

- A. **What the need (issue) we are addressing is:** The safety and security of the building, property and people utilizing it. For a new building, there is no alarm security system to prevent break in's and attempted robberies. We feel that this is one of the number one concerns moving forward. Also, having a surveillance system placed for outside and inside use, we will be able to determine a suspect in the event of a crime. For example, if a child's bike gets stolen from the front of our property or if a piece of our equipment or property is damaged.
- B. **How we propose to address it:** By adding surveillance cameras in main areas inside and outside the building, an alarm security system and a room to room intercom system for communication. An alarm system to be set whenever the building is locked each night to prevent break-ins and assure all doors are closed and locked. A surveillance system to reference in the event of stolen property and destruction of property around the building inside and outside. An intercom system to be able to communicate throughout the entire building in any event as well as contact rooms that are without telephones.
- C. **What alternatives we have:** Outside of regularly monitoring the building by our staff and routinely checking doors and windows, there is no way to monitor the Center with these security measures 24 hours, especially during non-hours of operation. The only way to connect with staff and after school members that are involved in programs on the different floors is to have a staff physically leave the area they are monitoring to go communicate with the staff and/or after school member.
- D. **What steps we have taken:** We have met with representatives from Custom Alarm, a company that the Town currently works with, to get a quote on all three systems. They provided us with a quote and explained that if the Town should chose to do two or all of the proposed systems, that they will be able to reduce the overall cost.
- E. **Background data (quotes, cut sheets, etc.):**
 - a. Security Alarm system: **\$6,545.00**
 - b. Video Surveillance System: **\$9,536.00**
 - c. Intercom System: **\$4,720.00**
 - d. See attachments for quotes and more information

CUSTOM ALARM SERVICE, INC.

23 Providence Street
P.O. Box 58
MENDON, MASSACHUSETTS 01756
MA Lic. 1455C RI Lic. 1355

Page 1 of 2

PROPOSAL

PHONE: 800-698-8800 FAX: 508-478-2779

TO: Milford Youth Center
24 Pearl St.
Milford MA 01757

PHONE	DATE
508-473-1756	12/21/16
JOB NAME / LOCATION	
JOB NUMBER	JOB PHONE

We hereby submit specifications and estimates for:

Installation of new partitioned security alarm system:

- 1 Vista-20P 8 zone Security/Fire alarm control panel
- 1 8 zone expander for a total of 16 zones
- 1 Auxiliary power supply
- 2 12v 8ah stand by batteries
- 2 Surge protection kits
- 1 High power siren driver
- 2 30 watt sirens
- 2 6160 Digital LCD keypads
- 12 Door security contacts
- 6 Wide angle passive infrared motion detectors

System installed complete \$6546.00

Standard monitoring service with monthly test \$60.00 a quarter/ \$220.00 a year paid in advance
Standard monitoring service with weekly test \$72.50 a quarter/ \$270.00 a year paid in advance
(Connected to customer provided "non-voip" land line)

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of:
Cont'd dollars (\$)

Payment to be made as follows:

33% with acceptance and balance in full upon completion. Plus tax
Any additional insurance fees and all permits, fees, connection fees, annual or user fees
charged by the Municipality, will be billed separately, directly to you.

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation Insurance.

Authorized
Signature _____

Note: This proposal may be withdrawn by us if not accepted within

30 days.

Acceptance of Proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature _____

Date of Acceptance: _____

CUSTOM ALARM SERVICE, INC.
 23 Providence Street
 P.O. Box 58
 MENDON, MASSACHUSETTS 01756
MA Lic. 1455C RI Lic. 1355

Page 2 of 2

PROPOSAL

PHONE: 800-698-8800 FAX: 508-478-2779

TO: Milford Youth Center
 24 Pearl St.
 Milford MA 01757

PHONE	DATE
508-473-1756	12/21/16
JOB NAME / LOCATION	
JOB NUMBER	JOB PHONE

We hereby submit specifications and estimates for:

Monitoring service options in addition to or without a land line on a new Vista installation

1) Cellular communication \$395.00 installed & 122.50 a quarter/ \$470.00 a year paid in advance
 (Overages may apply for excessive signals) (Subject to adequate reception at the control panel)

2) "Total Connect - Unlimited" using Internet communication with Cellular back-up
 \$575.00 installed & \$150.00 a quarter/ \$580.00 a year paid in advance

(Includes remote system control and notification via internet using customer provided computer or smartphone) (Many other "total Connect" options are available)

(Includes plug in connection to customer provided router) (Your internet devices may not operate during power failure. Back up battery power is available for your internet devices)

(Overages may apply for excessive signals) (Subject to adequate reception at the control panel)

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of: _____ dollars (\$ _____).

Payment to be made as follows:

33% with acceptance and balance in full upon completion. Plus tax
 Any additional insurance fees and all permits, fees, connection fees, annual or user fees charged by the Municipality, will be billed separately, directly to you.

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation Insurance.

Authorized
Signature _____

Note: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature _____

Date of Acceptance: _____

1. The Subscriber shall carefully and properly set the alarm system each armed period or at such other times as the Subscriber shall require monitoring. Subscriber shall carefully and properly test the alarm system prior to each armed period and shall immediately report to the Company in writing any claimed inadequacy in or failure of the system.
2. Repairs and Parts Replacement Without Maintenance Service - After the warranty period, and if a Maintenance Service Contract has not been signed, service may be obtained at the Company's prevailing prices and terms at the time.
3. Limits of Liability - It is understood that the Company is not an insurer, and that insurance, if any, shall be obtained by the Subscriber. Amounts payable to the Company hereunder are based upon the value of the services and equipment and the scope of liability as herein set forth and are unrelated to the value of the Subscriber's property or the property of others located in Subscriber's premises. The Company makes no guarantee or warranty. Including any implied warranty of merchandise or fitness that the system or services supplied will avert or prevent occurrences or the consequences therefrom, which the system or services is designed to detect or avert. If the Company should be found liable for loss or damage due to a failure of equipment or service in any respect, its liability shall be limited to \$250.00. This is the exclusive remedy, and the provisions of this paragraph shall apply if loss or damage, irrespective of cause or origin, results directly or indirectly to person or property from performance or nonperformance of obligations imposed by this contract or from negligence, active or otherwise, of the Company, its agents or employees. No action shall be brought against the Company more than one (1) year after the accrual of the cause of action therefore: If the Subscriber desires, the Company will amend this Agreement to allow the Subscriber to pay an additional annual amount necessary to purchase an insurance policy insuring such greater liability. No such amendment shall be effective unless signed by the Subscriber, the Company and the Insurance carrier which will be insuring the additional liability. If in the event any person not a party to this Agreement, shall make any claim or file any lawsuit against the Company for failure of its equipment or service in any respect, the Subscriber agrees to indemnify, defend and hold the Company harmless from any and all such claims and lawsuits including the payment of all damages, costs and attorney's fees.
4. Errors or omissions in the System and/or Installation, including but not limited to, failure to wire points of protection, shall be called to the attention of the Company by the Subscriber in writing within five (5) days of completion of the installation. Upon expiration of the said five (5) days period the system and the protection provided shall be deemed accepted by the Subscriber. The Subscriber acknowledges that additional protection may be obtained over and above that provided herein at additional cost.
5. Entire Agreement - This constitutes the entire Agreement between the Subscriber and the Company and no representation, statement, promise, condition, inducement, advertisement or advice not contained in the Agreement shall be binding upon the company as a warranty or otherwise. The foregoing terms and conditions shall prevail notwithstanding any variance with the terms and conditions of any order submitted by the subscriber.
6. Receipt of Proposal – The Client specifically acknowledges that it has received a copy of this proposal in its entirety and has read the same, understood it and agreed to its contents before signing it.

Date: _____ Client's initials: _____

CUSTOM ALARM SERVICE, INC.
23 Providence Street
P.O. Box 58
MENDON, MASSACHUSETTS 01756
MA Lic. 1455C RI Lic. 1355 RI Lic. AF-09108

Page 1 of 2

PROPOSAL

PHONE: 800-698-8800 FAX: 508-478-2779

TO: Milford Youth Center
Jen Ward
Katie Covell
24 Pearl Street
Milford MA 01757

PHONE 744-722-0761	DATE 12/22/2016
JOB NAME / LOCATION Proposal to provide Video Surveillance and Intercom Systems to the youth center	
JOB NUMBER 161221-B1	JOB PHONE

We hereby submit specifications and estimates for:

Proposal to provide a video surveillance system and interoffice intercom to the Milford Youth Center.

This proposal includes the following:

Video Surveillance System \$9,536.00

- * 1 LTN8716-P16 LT Security Platium NVR, w/6TB Storage, Recording Resolution up to 6MP Built in POE for 16 cameras, Dimensions:17.5"(w)x 11.4"(D)x 1.8"(H)
- * 1 CMIP7243-S LT Security 4.1MP, 2.8-12mm varifocal lens, 30IR(~100'), 3D DNR, DWDR, BLC, VCA, IP66, Vandal Resistant, POE, Dome Camera. See Camera Location Attachment.
- * 6 CMIP7442B-28M LT Security 4.1MP, 2.8 Fixed lens, 30IR(~100'), 3D DNR, DWDR, BLC, VCA, IP66, Vandal Resistant, POE, Dome Camera. See Camera Location Attachment.
- * 4 CMIP3132-28S LT Security 3.2MP, 2.8 Fixed lens, 10IR(~33'), Vandal Resistant, POE, Mini-Dome Camera. See Camera Location Attachment.
- * All cable, wire, 8 Port Switch, Camera Cages, installation labor and system checkout.

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of:
Cont'd dollars (\$)).

Payment to be made as follows:

35% down with order, balance in full upon completion

All permits, fees, connection fees, annual or user fees, or special insurance charges required, will be billed separately, directly to you.

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation Insurance.

Authorized
Signature

Note: This proposal may be
withdrawn by us if not accepted within

30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature

Signature

Date of Acceptance: _____

CUSTOM ALARM SERVICE, INC.

23 Providence Street

P.O. Box 58

MENDON, MASSACHUSETTS 01756

MA Lic. 1455C RI Lic. 1355 RI Lic. AF-09108

Page 2 of 2

PROPOSAL

PHONE: 800-698-8800 FAX: 508-478-2779

TO: Milford Youth Center
Jen Ward
Katie Covell
24 Pearl Street
Milford MA 01757

PHONE 744-722-0761	DATE 12/22/2016
JOB NAME / LOCATION Proposal to provide Video Surveillance and Intercom Systems to the youth center	
JOB NUMBER 161221-B1	JOB PHONE

We hereby submit specifications and estimates for:

Intercom System \$4,720.00

- * 2 AIP-LEF102 Aiphone LEF 10 Position Master. (Units located at Reception Desk and Asstant Managers Office
- * 5 AIP-LEA Aiphone Room Stations (Units to be located in Arts and Crafts Rm, Science Rm, Homework Rm, Conference Rm, Weight Rm, and Movie Rm.
- * All cable, wire, All Call Adapter, power supply, installation labor and system checkout.

** Customer to provide 110vac receptacle at the DVR/NVR and a network connection for local and off premise viewing. The customer must provide a live high speed internet connection, computer, smartphone and any other equipment necessary to view the video.

The customer is responsible for configuring their network for the video recorder and must provide Custom Alarm Service with the public IP address as well as a static IP address for the video recorder and cameras. Custom Alarm Service will provide the customer with the necessary port numbers to be forwarded.

Although it is ultimately the customers responsibility to configure and maintain their network to work with the video system, Custom Alarm Service will offer assistance if requested at our regular service rates.

We appreciate the opportunity to provide you with this Security Solution. Thank you!

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of: _____ dollars (\$) _____).

Payment to be made as follows:

35% down with order, balance in full upon completion

All permits, fees, connection fees, annual or user fees, or special insurance charges required, will be billed separately, directly to you.

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation Insurance.

Authorized
Signature _____

Note: This proposal may be
withdrawn by us if not accepted within

30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature _____

Date of Acceptance: _____

LEF Series

Communication, Paging,
and Entry Security System



Homes | Offices | Schools | Industrial Facilities



Features & Benefits

• Mix and match a variety of stations

Up to 11 components can be intermixed to create the desired communication solution

• Complements CCTV system

Visitors can be seen with CCTV cameras while communicating via the intercom

• PTT and hands-free communication

Calls are made with push-to-talk operation and answered with hands-free communication

• LED and call-tone indicators

LED lights and call tones at the master station indicate which door/sub station is calling

• Selective door release

When visitors are confirmed, doors can be unlocked with the push of a button

• Selective Call and Optional All Call

Provides the option to call one station at a time or to call all stations at once

• Indoor and outdoor speakers

Announcements can be heard throughout the facility where speakers are installed

• Reliable and designed to last

Customers can rely on this system with trouble-free use for years to come



Ideal Applications



Homes



Offices



Schools



Industrial Facilities

Components - Mix and match up to 11 door / master / sub stations

Door Stations



LE-D

Audio Door Station

- Plastic chassis
- Surface mount
- Fits 1-gang box 4-3/4"H 3-7/16"W 1-1/8"D



LE-SS-1G

Audio Door Station

- Stainless steel panel
- Flush mount
- Fits 1-gang box 4-1/2"H 2-3/4"W 2-1/2"D (back box depth)



LE-DA

Audio Door Station

- Stainless steel cover
- Flush mount
- Fits 2-gang box 4-1/2"H 4-9/16"W 2-1/2"D (back box depth)



LE-SS/A

Audio Door Station

- Stainless steel panel
- Flush mount
- Fits 2-gang box 4-3/4"H 4-3/4"W 2-1/2"D (back box depth)



LE-SSR

Audio Door Station

- Red mushroom call button
- Stainless steel panel
- Flush mount
- Fits 2-gang box 4-3/4"H 4-3/4"W 2-1/2"D (back box depth)



LE-SSV

Audio Door Station

- Built-in CCTV camera
- Stainless steel panel
- Flush mount
- Fits 2-gang box 4-3/4"H 4-3/4"W 2-1/2"D (back box depth)



LS-NVP/C

Audio Door Station

- Powder-coated steel panel
- Flush mount
- Fits 3-gang box 7-1/2"H 5-1/2"W 2-1/2"D (back box depth)

NOTE: Aiphone recommends a 2-1/2" minimum back box depth for all flush mount door stations.

Master Stations



LEF-3

3-Call Audio Master Station

- Surface mount 7-1/16"H 5-5/8"W 2-1/8"D



LEF-3L

3-Call Audio Master Station

- Selective door release
- Surface mount 7-1/16"H 5-5/8"W 2-1/8"D



LEF-5

5-Call Audio Master Station

- Selective door release
- Surface mount 8-1/8"H 7-1/2"W 2-3/16"D



LEF-10

10-Call Audio Master Station

- Selective door release
- Surface mount 8-1/8"H 7-1/2"W 2-3/16"D



LEF-10S

10-Call Audio Master Station

- All Call button (requires BG-10C)
- Selective door release
- Surface mount 8-1/8"H 7-1/2"W 2-3/16"D



LEF-3C

3-Call Audio Master Station

- All Call button (requires BG-10C)
- Semi-flush mount 8-1/4"H 6-1/8"W 2"D (9/16" goes inside wall)



LEF-5C

5-Call Audio Master Station

- All Call button (requires BG-10C)
- Selective door release
- Semi-flush mount 9-7/16"H 7-7/8"W 3"D (1-1/2" goes inside wall)



LEF-10C

10-Call Audio Master Station

- All Call button (requires BG-10C)
- Selective door release
- Semi-flush mount 9-7/16"H 7-7/8"W 3"D (1-1/2" goes inside wall)

Components - Mix and match up to 11 door / master / sub stations

Sub Stations (includes sub stations, speakers, and paging adaptors)



LE-A
Audio Sub Station
• Surface mount
6-1/4"H
5-1/8"W
2"D



LE-AN
Privacy Audio Sub Station
• Surface mount
• Privacy button
6-1/4"H
5-1/8"W
2"D



LE-A3
3-Call Audio Sub Station
• Surface mount
7-1/16"H
5-5/8"W
2-1/8"D



LE-AN3
3-Call Privacy Audio Sub Station
• Surface mount
• Privacy button
7-1/16"H
5-5/8"W
2-1/8"D



LE-B
Audio Sub Station
• Semi-flush mount
8-1/4"H
6"W
2"D (9/16" goes inside wall)



LE-BN
Privacy Audio Sub Station
• Semi-flush mount
• Privacy button
8-1/4"H
6"W
2"D (9/16" goes inside wall)



LEF-1C
Audio Sub Master Station (requires BG-10C)
• All Call button
• Semi-flush mount
8-1/4"H
6"W
2"D (9/16" goes inside wall)



SP-20N/A
Ceiling Speaker
(requires NP-25V)
• 20Ω
• Indoor use
• Flush mount
Diameter: 12-7/8"
Baffle Diameter: 8"



AH-108
Horn Speaker
• 8Ω, 10W
• Indoor or outdoor use
• Surface mount
Bell Diameter: 6-1/8"
Depth: 6-1/2"



BA-1
Paging Adaptor
(requires one amplifier per paging zone - use P30BGM, DMA2060, or DMA2120)
4-1/8"H
2-1/2"W
1-1/2"D

Power Supply



PS-1225UL
12V DC Power Supply
(required for system)

Accessories



BG-10C
All Call, Chime, and Music Adaptor
(required for LEF-10S, LEF-3C, LEF-5C, LEF-10C, or LEF-1C)



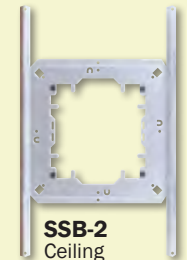
P30BGM
30W Paging Amplifier



DMA2060
60W Paging Amplifier



DMA2120
120W Paging Amplifier



SSB-2
Ceiling Support Bracket for SP-20N/A



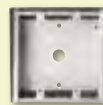
HID-SS
Card Access Station with HID® ProxPoint® Plus Proximity Card Reader
(requires a 3rd party host)



KMB-45
45" Mullion Mounting Bracket for LE-D



SBX-1G
Surface Mount Box for LE-SS-1G



SBX-2G
Surface Mount Box for LE-SS/A, or LE-SSR



SBX-2BH
Horizontal Surface Mount Box for HID-SS and one LE-DA, LE-SS/A, or LE-SSR



SBX-NVP
Surface Mount Box for LS-NVP/C



BBX-1E
Flush Mount Back Box for LE-B, LE-BN, LEF-1C, or LEF-3C

BBX-3E (not shown)
Flush Mount Back Box for LEF-5C or LEF-10C



EL-12S
Electric Door Strike
(requires PT-1210N)



PT-1210N
12V AC Transformer
(required for EL-12S)



RY-PA
Door Release Relay



LEW-5, LEW-10, LEW-10S
Terminal Box



NP-B
Flush Mount Indoor Call Button



NP-W
Surface Mount Box for NP-B



LT-1
20Ω-to-8Ω Matching Transformer



NP-25V
33μF, 25V Non-Polarized Capacitor



RY-AC/A
External Signaling Relay

Specifications

IMPORTANT: Use 12V DC voltage only! Connecting AC voltage to an LEF Master Station can damage the unit.

Spec ▼	Model ►	LEF-3, LEF-3L, LEF-5, LEF-10, LEF-10S, LEF-3C, LEF-5C, LEF-10C	LE-A, LE-AN, LE-A3, LE-AN3, LE-B, LE-BN, LEF-1C	BG-10C
Power Source		12V DC, 300mA per active master station - use PS-1225UL	Drawn from master station	12V DC, 2.5A (uses system master)
Output		800mW @ 20Ω (receive), 500mW @ 20Ω (transmit)		
Wire Type		See wiring table below		
Wire Distance		Door / Sub Station to farthest Master Station: 650'(22AWG) 1,600'(18AWG)		
				500'(22AWG) 1,000'(18AWG)

Component	Wire #	Gauge	Conductor
▼ LEF Standard Wiring			
LEF-3	822210	22 AWG	10 cond., overall shield
LEF-5	822212	22 AWG	12 cond., overall shield
LEF-10, LEF-10S	822220	22 AWG	20 cond., overall shield
▼ LEF-1C Wiring			
Homerun to BG-10C	822212	22 AWG	12 cond., overall shield
Looped (max. 9 stations)	822220	22 AWG	20 cond., overall shield
LEF-3C	822212	22 AWG	12 cond., overall shield
LEF-5C	822215	22 AWG	15 cond., overall shield
LEF-10C	822220	22 AWG	20 cond., overall shield
BG-10C to Master	822220	22 AWG	20 cond., overall shield

Component	Wire #	Gauge	Conductor
▼ Sub / Door Station Wiring			
Homerun (22AWG)	822203	22 AWG	3 cond., overall shield
Homerun (18AWG)	821803	18 AWG	3 cond., overall shield
Looped (max. 4 stations)	822206	22 AWG	6 cond., overall shield
Looped (max. 8 stations)	822210	22 AWG	10 cond., overall shield
▼ Door Release Wiring (K Terminals)			
LEF-3L	822212	22 AWG	12 cond., overall shield
LEF-5, LEF-5C, LEF-10, LEF-10S, LEF-10C	822220	22 AWG	20 cond., overall shield
Additional Wiring for Door Release (optional)	822210	22 AWG	10 cond., overall shield

LOCAL AIPHONE EXPERTS ARE HERE TO HELP.
CONTACT US TODAY!



LEF Series Brochure

08/2016

Digital Copy

The information in this brochure is subject to change without notice.



GS-35F-0065L

ISO-14001
Certified



Aiphone Co. Ltd.

ISO 9001:2008
Certified



Aiphone Corp.

Deming
Prize



Aiphone Co. Ltd.

Platinum Professional Level 16 Channel NVR 1U LTN8716-P16

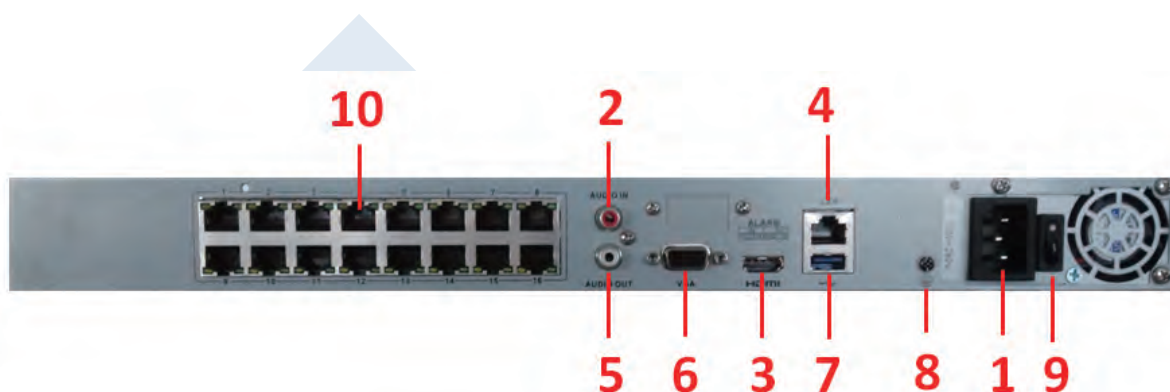


Key Features:

- Up to 16 network cameras can be connected
- Support live view, storage, and playback of the connected camera with up to the resolution of 6 megapixels
- Up to 16 independent PoE network interfaces for different models
- Up to 2 SATA hard disks can be connected with up to 6TB capacity for each
- Support HDD quota mode

Rear Panel:

- | | |
|--------------------------|--|
| 1. Power Supply | 6. VGA Interface |
| 2. Audio In | 7. USB Interface |
| 3. HDMI Interface | 8. Ground |
| 4. LAN Network Interface | 9. Power Switch |
| 5. Audio Out | 10. Network Interfaces with PoE Function |



Platinum Professional Level 16 Channel NVR 1U

LTN8716-P16

Video/Audio Input	
IP video Input	16-CH
Two-way audio input	1-ch, RCA (2.0 Vp-p, 1kΩ)
Network	
Incoming bandwidth	160Mbps
Outgoing bandwidth	80Mbps
Remote connection	128
Video/Audio Output	
Recording resolution	6MP/5MP/3MP/1080P/UXGA/720P/VGA/4CIF/DCIF/2CIF/CIF/QCIF
Frame rate	Main stream: 50 fps (P) / 60 fps (N)
	Sub-stream: 50 fps (P) / 60 fps (N)
HDMI/VGA output	1-ch, resolution: 1920 × 1080 /60Hz, 1600 × 1200 /60Hz, 1280 × 1024 /60Hz, 1280 × 720 /60Hz, 1024 × 768 /60Hz
Audio output	1-ch, RCA (Linear, 1kΩ)
Decoding	
Live view / Playback resolution	6MP/5MP/3MP/1080P/UXGA/720P/VGA/4CIF/DCIF/2CIF/CIF/QCIF
Capability	16-ch@4CIF, 12-ch@720P, 6-ch@1080P
Hard Disk	
SATA	2 SATA interfaces for 2 HDDs
Capacity	Up to 6TB for each disk
External Interface	
Network Interface	1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface
USB Interface	1 × USB 2.0 and 1 × USB 3.0
PoE	
Interface	16 independent 100 Mbps PoE network interfaces
Max. Power	200W
Supported standard	AF and AT
GENERAL	
Power Supply	100~240V AC
Consumption	≤ 15W
Working Temperature	+14 °F~ + 131 °F(-10 °C ~ +55 °C)
Working Humidity	10% - 90%
Casing	19-inch rack-mounted 1U casing
Dimensions (WxDxH)	445 × 290 × 45mm (17.5 ×11.4 × 1.8 inch)
Weight	≤ 1 kg (2.2 lb)

MYC Capital Plan

1. Capital Item: Gym Divider/staging

- A. **What the need (issue) we are addressing is:** Being able to separate programs run during our afterschool hours as well as provide multiple rentals at the same time in the gym. Also, parents and spectators have no place to sit and watch games and events in the gym area. A gym divider would be increasing revenue by allowing us to have multiple rentals using the gym space at one time. Also, it will give us the space to run more programs for our afterschool program in being able to separate the area. Staging would be used for our rental purposes as well as events that we host. The staging we looked at is portable and easily stored to maximize space in the gym when they are not in use. It will provide seating for spectators for sporting events renting the gym and seating for our own events.
- B. **How we propose to address it:** By adding a gym divider curtain, our afterschool programs can have their own designated space to keep other kids and equipment from disrupting it. This will also allow us to have multiple organizations use the gym at the same time for rental purposes and to keep rental costs down. Adding staging will allow for parents and spectators to watch and observe games and events being held in the gym area instead of having to stand against the wall or sit in a separate room.
- C. **What alternatives do we have:** There is no obvious alternative to dividing the gym for both programs and rentals purposes. Currently we use cones to separate the two courts, but of course this does not resolve the problem of both distractions from other activities being run and other sports equipment from interrupting structured programs. In terms of the staging, we currently have a small amount of chairs that we use. These are not made for gymnasium use which force us to put down rubber mats to protect the newly installed floor.
- D. **What steps have we taken:** We have researched different types of dividers and staging that would work best for the Center and which would be the most cost effective. We met with a representative from Robert H. Lord Co., who worked on the new Woodland Elementary School, to attain the quote for both items.
- E. **Background data (quotes, cut sheets, etc.):**
 - o Gym Divider: A Slope-Fold Curtain that will divide the gym in half to separate courts for afterschool programs as well as rental purposes. The curtain has an electric, remote-hoist mechanism to fit the contour of the frame design. The electric winch system hoists the divider to storage position. 1 year limited warranty: **\$23,385.00**
 - o Staging: Portable bleacher seating for watching basketball, volleyball etc. games for fans and parents. The bleachers would be in sets approximately 7ft x 6ft in dimension when fully set up. They then fold up to be about 2ft x 5ft for easy storage purposes. 5-year factory-backed warranty: **\$7,051.00** (see attachments)



ROBERT H LORD CO.

GYMNASIUM EQUIPMENT QUOTATION

To:	Ms. Jenn Ward	Date:	November 29th, 2016
From:	Robert H. Lord Co.	Project:	Milford Youth Center
Address:	220 Chapel Road Manchester, CT 06042	Address:	24 Pearl St Milford, MA 01757
Phone:	860-645-8700	Architect:	None Known
Fax:	890-645-9100	Addenda(s):	None Known
Bid Price:	<u>\$23,385.00</u>	Section(s):	None Known

The Robert H. Lord Company, Inc. proposes to furnish, subject to the conditions below, excluding sales tax, **Porter Athletic Equipment Co.** standard style Athletic Equipment. Standards include, but are not limited to, construction, materials and/or finishes, unless otherwise noted.

Quotation Price Based on: Furnishing & Installing – Material as listed below using Open Shop Labor.

QUOTATION DETAILS:

- 1 665 Slope-Fold Curtain
Approx. 25'- 0" H (At Apex) X 52'-0" Long
Top Portion to be Mesh with Bottom 8'-0" to be Solid Viny

Voluntary Alternate:

Porter #675 Roll up Divider Curtain

DEDUCT: \$9,000.00

Approx. 20'-0" H X 50'-0" H

Will have a gap between top of curtain and ceiling because of sloped roof

Exclusions:

1. **Sales Tax, Performance, Materials and Payment Bonds, O.C.I.P. or C.C.I.P.**
2. **Cost and responsibility of storing materials, if installation cannot be started at the time of delivery.**
3. **Permits of any type.**
4. **Final Electrical Connection to be by others.**
5. **Floor Protection.**
6. **Pollution Insurance**

Notes:

1. All backstop and divider curtain structure to be Gloss Finish POWDER COAT.
2. Quotation includes direct attachment of each backstop and curtain to the trusses with no interference with ductwork, light fixtures or other structures.
3. Quote includes work performed during standard work hours, and on the concrete slab prior to installation of the finished floor.
4. If gymnasium equipment installation work must be done on the finished floor, the floor protection is by others.

Warranty Information:

Backstop Masts & Structure: 25 Years.
Backstop Winches: 5 Years

Terms and Conditions:

1. Shipment will be **60 to 90** days after receipt of all milestone information, i.e. – Submittal approval, colors and field dimensions.
 2. Quotation net prices will remain firm for **30** days for shipment on or before, 2/1/17, after which we reserve the right to re-quote this project.
 3. The above pricing does not include any Federal, State, Local, Manufacturers, Excise or other taxes unless specifically mentioned in the above quotation
 4. Shop Drawings will be submitted within **4 to 6** weeks after acknowledgement of purchase order and/or contract.
 5. This quotation is based on our submitting progress invoices, covering material as shipped and installation as completed. Terms for each invoice are
 6. In the event of a default by non-payment and the institution of collection procedures, the customer and/or guarantor agree to be responsible for all costs of collection, including attorney's fees.
 7. All parties hereto agree to submit to the jurisdiction of the State of Connecticut as the proper venue for any lawsuit filed to enforce collection of monies due or regarding any service and/or product dispute.
 8. Delivery and installation are based upon a completion date of 2/1/17; or during the 1st Qtr. **2017**, for any work beyond this period our quotation is **NOT** valid, and must be refigured. In the case of an earlier completion date, from what was specified in the specifications, we reserve the right to review,
 9. The General Contractor/Owner to supply elevator or hoist, if needed, at no charge to the **Robert H. Lord Company, Inc.**
 10. The General Contractor/Owner to supply use of dumpsters at no charge to the **Robert H. Lord Company, Inc.**
 11. The prices quoted in this proposal are an offer to do business with your firm subject to credit approval by the **Robert H. Lord Company, Inc.** and in addition, approval of the contract forms.
 12. The General Contractor/Owner is responsible for providing adequate lighting for installation.
 13. The **Robert H. Lord Company, Inc.** will not accept any back charges unless prior written approval is obtained from the RHL project manager.
 14. **THE ROBERT H. LORD QUOTATION FOR THIS PROJECT MUST BE MADE A PART OF THE CONTRACT.**
- Please contact Roy McNally at (860) 512-2128 for price confirmation at the time of contract award.

Respectfully,

Jon Lord

Jon Lord
Sales Associate (860) 729-9215 Cell

Accepted: _____
Date: _____



ROBERT H LORD CO.

NJPA TELESCOPING STANDS QUOTATION

To:	Ms. Jenn Ward	Date:	December 1st. 2016
From:	Robert H. Lord Co.	Project:	Milford Youth Center
Address:	220 Chapel Road Manchester, CT 06042	Address:	24 Pearl St. Milford, MA 01757
Phone:	860-645-8700	Architect:	
Fax:	890-645-9100	Addenda(s):	None Known
Bid Price:	<u>\$7,051.00</u>	Section(s):	N/A

The Robert H. Lord Company, Inc. proposes to furnish, subject to the conditions below, excluding sales tax, **Hussey Seating Co** standard **MAXAM 1** style Tip and Roll Bleacher. Standards include, but are not limited to, construction, materials, hardware and /or finishes, unless otherwise noted.

Quotation Price Based on: Furnishing (Delivered Only) - Material as listed below

QUOTATION DETAILS:

3 Banks 3 Tier X 7'-6" Long Portable "Tip and Roll" Units (45 Net Seats)

10 10" Courtside Modules
LIFT Hydraulic Lift Assist

Exclusions:

1. **Performance, Material and Payment Bonds. O.C.I.P. or C.C.I.P.**
3. **Cost and responsibility of storing materials, if installation cannot be started at the time of delivery.**
4. **Final Electrical Connection.**
5. **Pollution Insurance**
6. Installation of any type.

Terms and Conditions:

1. Shipment will be **90** to **120** days after receipt of all milestone information, i.e. – Submittal approval, colors and field dimensions.
2. Quotation net prices will remain firm for **30** days for shipment on or before, **8/1/2017**, after which we reserve the right to re-quote this project.
3. The above pricing does not include any Federal, State, Local, Manufacturers, Excise or other taxes unless specifically mentioned in the above quotation
4. Shop Drawings will be submitted within **4** to **6** weeks after acknowledgement of purchase order and/or contract.
5. This quotation is based on our submitting progress invoices, covering material as shipped and installation as completed. Terms for each invoice are NET 30 days from date of invoice and a finance charge of 1.5% (18% APR) per month will be assessed on all accounts that have a balance thirty or more days past due.
6. In the event of a default by non-payment and the institution of collection procedures, the customer and/or guarantor agree to be responsible for all costs of collection, including attorney's fees.
7. All parties hereto agree to submit to the jurisdiction of the State of Connecticut as the proper venue for any lawsuit filed to enforce collection of monies due or regarding any service and/or product dispute.
8. Delivery and installation are based upon a **9/1/2017** completion date; or during the **3rd** Qtr. **2017**, for any work beyond this period our quotation is **NOT** valid, and must be refigured. In the case of an earlier completion date, from what was specified in the specifications, we reserve the right to review, with our manufacturer, what impact, if any, the revised date has on our quotation. Any cost increases will be passed on to you, to be processed as a contract addition by change order.
9. The General Contractor/Owner to supply elevator or hoist, if needed, at no charge to the **Robert H. Lord Company, Inc.**
10. The General Contractor/Owner to supply use of dumpsters at no charge to the **Robert H. Lord Company, Inc.**
11. The prices quoted in this proposal are an offer to do business with your firm subject to credit approval by the **Robert H. Lord Company, Inc.** and in addition, approval of the contract forms.
12. The General Contractor/Owner is responsible for providing adequate lighting for installation.
13. The **Robert H. Lord Company, Inc.** will not accept any back charges unless prior written approval is obtained from the RHL project manager.
14. **THE ROBERT H. LORD QUOTATION FOR THIS PROJECT MUST BE MADE A PART OF THE CONTRACT.**

Please contact Roy McNally at (860) 512-2128 for price confirmation at the time of contract award.

Respectfully,

Jon Lord

Jon Lord
Sales Associate (860) 729-9215 Cell

Accepted: _____
Date: _____

The HVAC system at the Police Department was installed almost 30 years ago. Two years ago the Town replaced the heat boilers because one had failed and the other was cracked and failing. Last year the HVAC control systems were replaced because they too were failing or leaking and there were no parts available to prolong their use. The final component is the chiller on the roof which provides AC; this too has exceeded its life expectancy and is due to be replaced this year.

We have provided Zach Taylor, Rick Villani, the Board of Selectmen and the Finance Committee with the documentation and estimates concerned with the replacement of the chiller.

Tom O'Loughlin

January 4, 2017

Mr. Richard Villani
Milford Board of Selectman
52 Main Street
Milford, MA 01757

***Subject: Milford Police Department
Chiller Replacement***

ENE Systems, Inc. is pleased to provide the following price to replace existing Trane chiller for the above reference location. Our scope will include the following:

- Remove and discard existing chiller
- Furnish and install new 40-ton air cooled Trane chiller
- Furnish subcontractor labor including crane & rigging service and Electrical installation. ENE assumes that existing electrical service is adequate for the installation of new chiller
- Re-pipe new chiller to existing chilled water lines
- Furnish and install Insulation of new piping
- Glycol the system
- Reconnection of existing controls
- Furnish project management, start up and check out labor as necessary for a complete installation.
- One year warranty parts and labor

Budget price for above scope: \$98,000.00

Excluded from this proposal

- Overtime
- Controls
- Structural
- Side walk repairs
- Police detail

Thank you for the opportunity to offer our services to you. If you have any questions, please feel free to call me at (781) 828-6770 extension 226 or e-mail jfontes@enesystems.com

Sincerely,
ENE Systems, Inc.
Jose Fontes
Sr. Account Executive

CC: Mike Poirier, ENE Systems



MILFORD FIRE DEPARTMENT

**21 BIRCH STREET
MILFORD, MASSACHUSETTS 01757**

**WILLIAM J. TOUHEY, JR., CHIEF
MARK A. NELSON, DEPUTY FIRE CHIEF**

Telephone: 508-473-1214 • Fax: 508-473-4858 • Inspections: 508-473-2256

The Milford Fire Department is seeking funding to replace our current rescue truck. The present truck is a 2011 Ford F550 4X4 with 70,000 miles and 8,900 engine hours. This vehicle is the most used truck in our fleet. It handles the largest volume of our medical calls as well as responding to all other types of incidents town wide. Due to the number of responses made by this vehicle, it is essential that this truck be available and reliable. It is currently in good condition and running well but we are beginning to see a small increase in down time and repair costs, which is to be expected at this age.

While the mileage may seem small, none of them are highway miles. These miles and engine hours are hard, stop and go in town emergency response miles. Rescue 1 is approaching the point in its life where it should be removed from front line service. It will be retained by the town in some capacity as it still has usefulness but not as a front line emergency response vehicle.

We will be replacing it with a smaller/lighter Ford F350 crew cab with a custom cap, which will be purchase from MHQ in Marlboro via the Massachusetts State Bid program. This truck will assume the role as the primary medical response vehicle for the department. If approved, this truck would be completed in early spring 2018.

The fire department 20 year capital plan has the purchase of a new rescue scheduled for this year. The original cost projected, had we stayed with the old design was \$300,000. As we altered the design with the 2011 rescue the cost came down to \$150,000. Further design changes, to better fit the way we use the vehicle were made this year bringing the cost down to \$100,000 and this figure will allow for the purchase of several new pieces of equipment for the truck.

As we have done in the past, we explored the option of replacing the chassis and use the existing body the truck. If we chose this option, we would have to move back up to an F550 chassis and the cost to transfer the existing body to the new chassis would be approximately \$100,000 bringing the total cost of the project to roughly \$150,000 for a 2018 truck with a 2011 body on it.

A third option we have is to run the existing truck for another year. Operators report that the truck is "getting loose" due to its age and it has the usual wear and tear. We have replaced the turbo twice and have had issues with the diesel anti-pollution system. If the town desired this could be done. However, it would be in more need of replacement next year and we are already schedule to purchase a new engine in October of 2018.

The present Rescue truck was approved at the October 25, 2010 town meeting at a cost of \$150,000.

We hope you will look favorably upon this article.

William J. Touhey, Jr.

Fire Chief

MEMORANDUM

Date: September 19, 2017

RE: Mower for Vernon Grove

To: Milford Finance Committee

The Board of Vernon Grove Trustees are looking to purchase a new lawn mower at the Town Meeting this fall. I would like to answer the 5 question package for you at this time.

1. What the need we are addressing is:

- The current tractor being used is a 1997 model and has outlived its usefulness as a day to day lawn mower. It is constantly breaking down, costing us both time and money

2. How we propose to address it:

- We would like to purchase the exact same model of lawn mower we purchased 2 years ago. Our men have been pleased with the performance of that machine.

3. What alternatives we have:

- We could keep spending money repairing the current lawn mower being used right now. We feel this is quite simply, spending good money on bad equipment.

4. What steps have we taken:

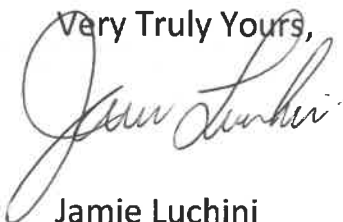
- As I have previously stated, we have been repairing the current lawn mower to get through this year's lawn mowing season. We have looked at the cost and effectiveness of repairing it, and have come to the conclusion it is not feasible to continue on with this machine, to be depended upon each and every day to operate effectively.

5. Background data:

- Attached you will find 3 quotes on the lawn mower we are looking to purchase as well as comparable ones.

Please feel free to contact me with any further questions.

Very Truly Yours,



Jamie Luchini

Chairman

Vernon Grove Board of Trustees



JOHN DEERE

146 Supply Center

Selling Equipment

Quote Id: 16090727

WALKER MT30i

Hours: 0

Stock Number:

				Selling Price
				\$ 14,665.50
Code	Description	Qty	Unit	Extended
MT30i	MT30i-GHS10 Collection Mower 48" Deck	1	\$ 16,295.00	\$ 16,295.00
Suggested Price				\$ 16,295.00
Customer Discounts				
Customer Discounts Total			\$ -1,629.50	\$ -1,629.50
Total Selling Price				\$ 14,665.50

WALKER MT25i

Hours: 0

Stock Number:

				Selling Price
				\$ 12,865.50
Code	Description	Qty	Unit	Extended
MT25i	Walker MT25i 10Bushell Catcher 48" Deck	1	\$ 14,295.00	\$ 14,295.00
Suggested Price				\$ 14,295.00
Customer Discounts				
Customer Discounts Total			\$ -1,429.50	\$ -1,429.50
Total Selling Price				\$ 12,865.50

NORFOLK POWER EQUIPMENT

846 Bronco Highway
Burrillville, RI 02830
Tel: (401) 710-9911
Fax: (401) 710-9466

5 Cushing Drive
Wrentham, MA 02093
Tel: (508) 384-0011
Fax: (508) 384-8667

45 North Main Street
Carver, MA 02330
Tel: (774) 213-9190
Fax: (508) 465-0931

www.norfolkpower.com ** Please remit payment to Wrentham address ** info@norfolkpower.com

SOLD TO
RVG100 VERNON GROVE CEMETERY
52 MAIN ST
MILFORD, MA 01757

SHIP TO
BANOGSXR@GMAIL.COM

Sold By: CB PO #: WALKER / STIHL Date 9/07/17 QUOTE QT31561
Ship By: Tax #: 046-001-224 9:57:16 Open

Tax	D	Qty	Description	Price	Amount
			MISC EQPT		
N			MT30I-48GHS10 31HP LIQUID COOLED		14490.00
N			48" DECK		
			** TOTAL MISC EQPT		14490.00

All new equipment quotes valid for 45 days unless stated otherwise.

** SUBTOTAL 14490.00

X Charge Sale

Phone: (508) 634-1454

PAY THIS
AMOUNT

\$14490.00