

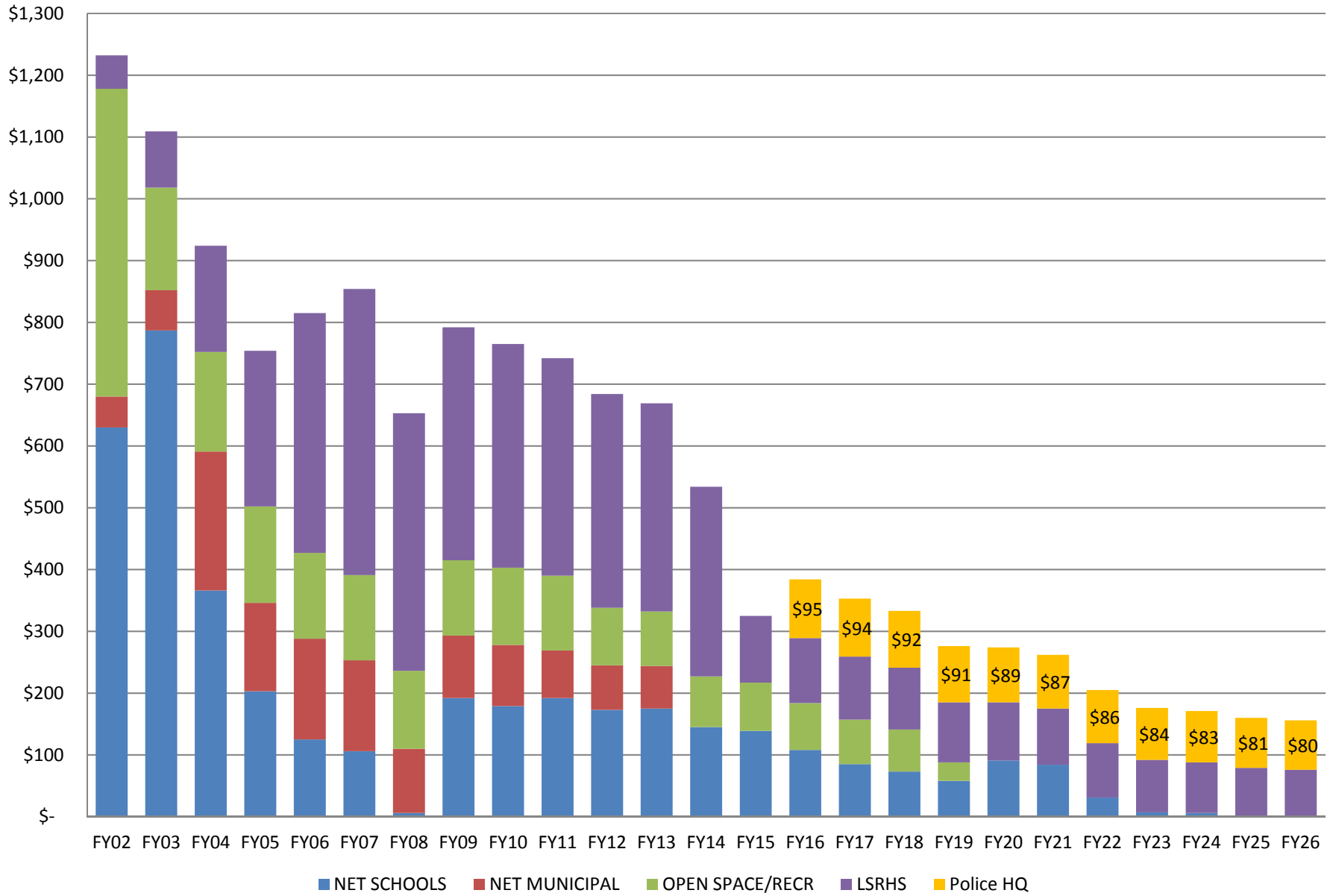
**FY16 CIP Form A Summary**

Department	Project	FY16 Dept Request	Dept. Priority	Last Replaced	Typical Cycle	Sr. Staff Priority Y/N	Operating Capital	Stabilization	Capital Exclusion	Debt Exclusion	Other
Facilities/SPS	Nixon Hot Water Heater Replacement	25,000	4	1995	15 yrs		25,000				
Facilities/SPS	Noyes Phone System	25,000	4	2000	15 yrs		25,000				
Facilities/SPS	Curtis Door Replacement and Repairs	40,000	6	2000	12-20 yrs		40,000				
Facilities/SPS	Energy Improvements LED Lighting	50,000	5	1999, 2000	10 yrs		50,000				
Facilities/Town	Various Building Improvements	50,000	2	N/A	N/A		50,000				
Finance	MUNIS Software-Employee Self-Service	10,425	2	N/A	N/A		10,425				
Finance	Munis Software-Tyler Reporting Services	22,325	1	N/A	N/A		22,325				
Fire	Radio Box Upgrades	45,000	2	unknown	25 yrs		45,000				
Recreation	Feeley Tennis Courts	40,000	3	15-18 yrs	8-10 yrs		40,000				
<b>Subtotal - Items \$50,000 and Under</b>		<b>307,750</b>					<b>307,750</b>	-	-	-	-
DPW	6 Wheel Dump Truck (Unit #9)	136,500		2004	7-10 yrs			136,500			
DPW	1 Ton Pick-Up (Unit #40)	66,000		2002	7-10 yrs			66,000			
DPW	1 Ton Pick-Up (Unit #PR-4)	42,000		2005	7-10 yrs			42,000			
DPW	10 Wheel Dump Truck (Unit #34)	174,800		2000	7-10 yrs			174,800			
DPW	10 Wheel Roll-Off (Transfer Stn) (Unit #L-1)	184,800		2006	7-10 yrs			184,800			
DPW	1 Ton Pick-Up (Unit #PR-11)	48,000		2006	7-10 yrs			48,000			
<b>Subtotal - Rolling Stock</b>		<b>652,100</b>					-	<b>652,100</b>	-	-	-
DPW	Route 20 & Nobscot Road Intersection	550,000	1	1999	N/A				550,000		
DPW	Underground Fuel Storage	250,000	1	1995	15-20 yrs				250,000		
DPW	Town-Wide Walkways	100,000	1	N/A	N/A				100,000		
<b>Subtotal - DPW</b>		<b>900,000</b>					-	-	<b>900,000</b>	-	-
Facilities/SPS	School Security and Access Controls	220,000	1	N/A	10 yrs				220,000		
Facilities/SPS	School Flooring Replacement	100,000	1	10-15 yrs	6/25 yrs				100,000		
Facilities/SPS	School Rooftop HVAC Unit (Noyes or Loring)	75,000	3	1999, 2000	15 yrs				75,000		
Facilities/SPS	Haynes School and Curtis School Septic	80,000	2	1999, 2000	15 yrs				80,000		
Facilities/SPS	Nixon Cafetorium Roof/Windows and Envelope	600,000	1	1960, 1991	30/25 yrs					600,000	
<b>Subtotal - Facilities/SPS</b>		<b>1,075,000</b>					-	-	<b>475,000</b>	<b>600,000</b>	-
Facilities/Town/SPS	Town & School Parking Lot	200,000	1	1990-1998	30 yrs				200,000		
Facilities/Town/SPS	Carpet Replacement	108,000	1	1998-2000	10-15 yrs				108,000		
<b>Subtotal - Facilities/Town/SPS</b>		<b>308,000</b>					-	-	<b>308,000</b>	-	-

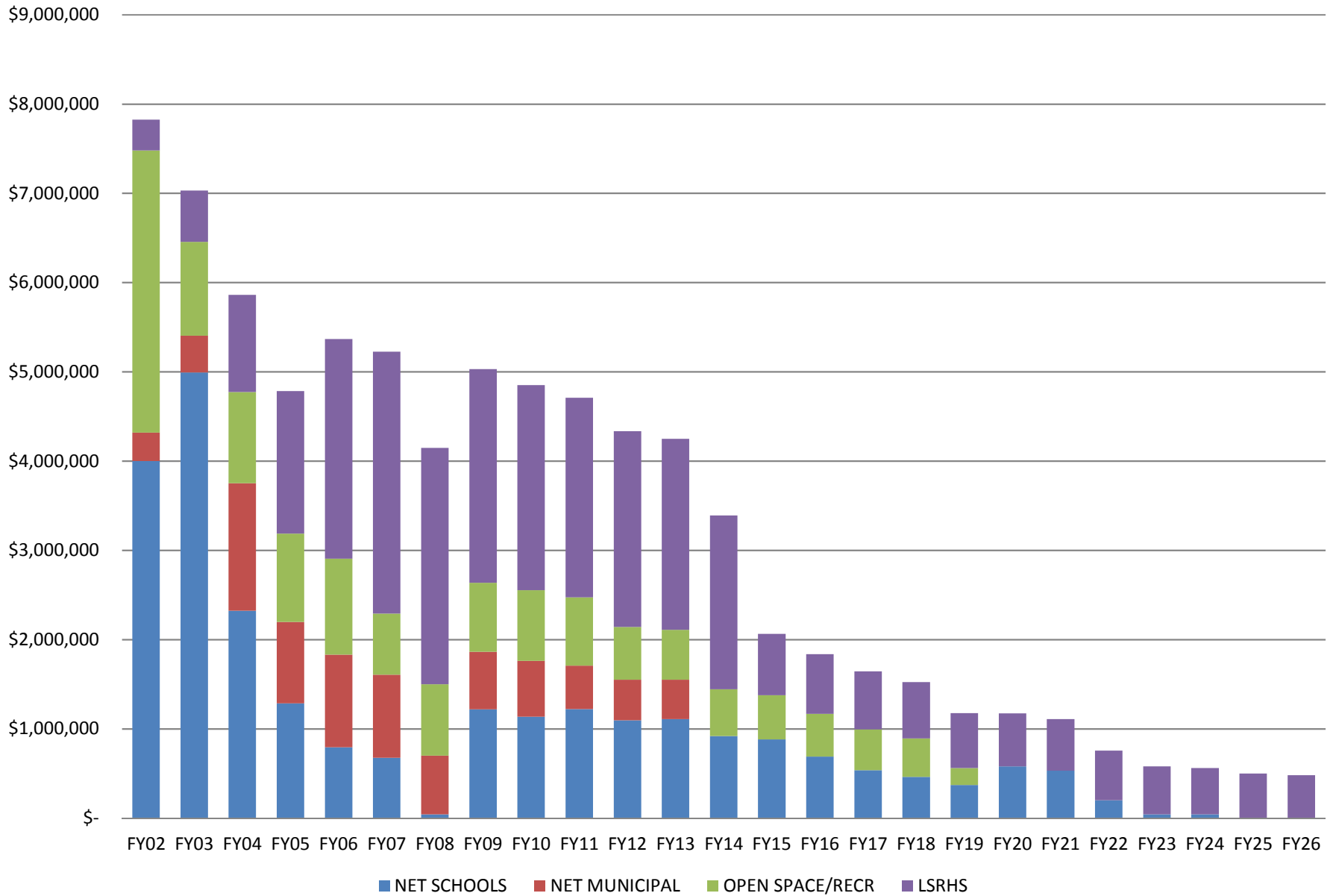
**FY16 CIP Form A Summary**

Department	Project	FY16 Dept Request	Dept. Priority	Last Replaced	Typical Cycle	Sr. Staff Priority Y/N	Operating Capital	Stabilization	Capital Exclusion	Debt Exclusion	Other
Fire	Cardiac Monitor Replacement	96,000	1	2010	5 yrs				96,000		
<b>Subtotal - Fire</b>		<b>96,000</b>					-	-	<b>96,000</b>	-	-
LSRHS	Fire Alarm System Upgrading	125,000							125,000		
<b>Subtotal - LSRHS</b>		<b>125,000</b>					-	-	<b>125,000</b>	-	-
Planning	Purchase of Property - 189 Landham Road	3,700,000	1	N/A	N/A						3,700,000
Planning	Purchase of Property - 36 North Road	457,100	2	N/A	N/A						457,100
Planning	Mass Central Rail Trail Phase 1	160,000	3	N/A	20 yrs						160,000
<b>Subtotal - Planning and Community Development</b>		<b>4,317,100</b>					-	-	-	-	<b>4,317,100</b>
Recreation	Lighting Cutting Field	200,000	4	N/A	30 yrs				200,000		
Recreation	Lighting Turf 1 and Turf 2 at LSRHS	400,000	5	N/A	30 yrs				400,000		
Recreation	Davis Field Development	3,573,512	1	N/A	N/A					3,573,512	
Recreation	Atkinson Pool Roof and Envelope	380,000	2	1987	20 yrs				380,000		
<b>Subtotal - Recreation</b>		<b>4,553,512</b>					-	-	<b>980,000</b>	<b>3,573,512</b>	-
<b>Total</b>		<b>12,334,462</b>					<b>307,750</b>	<b>652,100</b>	<b>2,884,000</b>	<b>4,173,512</b>	<b>4,317,100</b>

# Debt Service Tax Bill Impact



## Actual Debt Service





**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

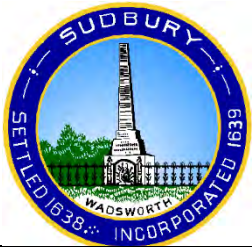
<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> Nixon Hot Water Heater Replacement

<b>Initial Year of Request:</b> FY15	<b>Estimated Total Project Cost:</b> \$25,000	<b>Estimated Future Savings:<sup>1</sup></b> TBD, but new system will be more energy efficient
<b>Estimated Incremental Costs:<sup>2</sup></b> 0	<b>Staffing Changes:<sup>3</sup></b> 0	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 4
<b>Project Description:</b> Replace existing hot water heater w/energy efficient water heater.		
<b>Justification and Need:</b> The existing hot water heating system is 20 years old and is in need of replacement.		
<b>Benefit:</b> Protect the building from deterioration and system failure.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1995		<b>Typical Replacement Cycle:</b> 15 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Wait for failure, however, this will likely cause disruption and cost more as an emergency repair		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Failure of appliance will likely cause the replacement cost to be higher as an emergency repair and possible clean up expense.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Existing hot water heater is 15 years old and is at the end of its serviceable life.		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

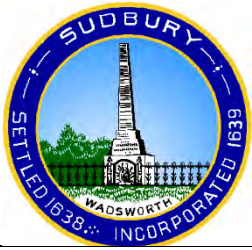
<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> Noyes Phone System

<b>Initial Year of Request:</b> FY15	<b>Estimated Total Project Cost:</b> \$25,000	<b>Estimated Future Savings:<sup>1</sup></b> n/a
<b>Estimated Incremental Costs:<sup>2</sup></b> none	<b>Staffing Changes:<sup>3</sup></b> none	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 4
<b>Project Description:</b> Upgrade existing phone system at Noyes School. The telephone system is vulnerable to failure due to aging hardware. Failures to the telephone system have already occurred, causing major delays in communication and causing operational difficulties.		
<b>Justification and Need:</b> Phones have reached the end of their serviceable life. New phones have been installed in Loring, Nixon and Curtis schools over the past few years and this is the continuation plan to replace all aging phones throughout the district.		
<b>Benefit:</b> Better communication, more efficient, meets needs of current technology		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2000		<b>Typical Replacement Cycle:</b> 15 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Postpone project for another year.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Poor communication, ineffective and unacceptable public service. Our ability to communicate quickly is imperative during every day operations, as well as, during emergencies.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> none		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

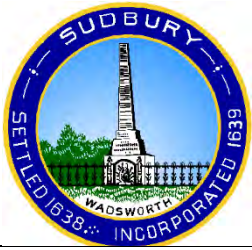
<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> Curtis Door Replacement and Repairs

<b>Initial Year of Request:</b> FY13	<b>Estimated Total Project Cost:</b> \$40,000	<b>Estimated Future Savings:<sup>1</sup></b> N/A
<b>Estimated Incremental Costs:<sup>2</sup></b> N/A	<b>Staffing Changes:<sup>3</sup></b> None	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b> 6
<b>Project Description:</b> Replace selected interior and exterior doors and hardware at Curtis School.		
<b>Justification and Need:</b> The doors are 15 years old and have been repaired many times. Some doors are beyond repair and need to be replaced.		
<b>Benefit:</b> Improve safety and functionality, as well as, take advantage of some energy savings with new weather stripping.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> When school was built in 2000		<b>Typical Replacement Cycle:</b> 12-20 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Doors can no longer be repaired		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Increase in repair bills that provide only a short term fix on the problem. Middle school kids are very forceful when it comes to handling doors and door hardware. These doors take an incredible amount of abuse on a daily basis from hundreds of openings and closings.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b>		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> Energy Improvements LED Lighting

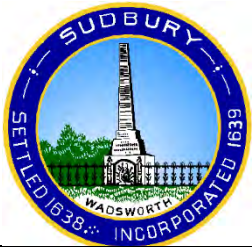
<b>Initial Year of Request:</b> FY15	<b>Estimated Total Project Cost:</b> \$50,000	<b>Estimated Future Savings:<sup>1</sup></b> \$5,000 per year
<b>Estimated Incremental Costs:<sup>2</sup></b> None	<b>Staffing Changes:<sup>3</sup></b> None	
<b>Justification Code:</b> C	<b>R or NR:</b> R	<b>Priority:</b> 5
<b>Project Description:</b> Replace existing lighting fixtures at Haynes Cafeteria and Library, Curtis School Library and miscellaneous hallway lights at Curtis School with energy efficient LED lights.		
<b>Justification and Need:</b> LED Lights will improve lighting, will last up to 3 times longer than existing lights and will save time money by reducing electricity consumption.		
<b>Benefit:</b> Reduce energy consumption, save money and replace 15 year old fixtures with new ones. Lamps have a 15 year warrantee which will reduce maintenance costs.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1999, 2000		<b>Typical Replacement Cycle:</b> 10 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Maintain existing older fixtures		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Delay benefit of reducing energy, thereby saving money.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> This project is proposed to be funded by Landfill Solar System Stabilization fund.		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.

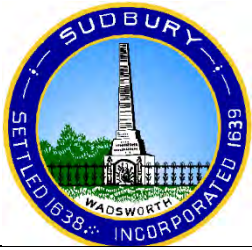




**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Facilities - Town
<b>Item/Project Name:</b> Various Building Improvements

<b>Initial Year of Request:</b> FY07	<b>Estimated Total Project Cost:</b> \$50,000	<b>Estimated Future Savings:<sup>1</sup></b> n/a
<b>Estimated Incremental Costs:<sup>2</sup></b> n/a	<b>Staffing Changes:<sup>3</sup></b> none	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b> 2
<b>Project Description:</b> This is part of a long term plan incorporated nine years ago to include a standard amount of funding for building improvements in the Capital Budget each year.		
<b>Justification and Need:</b> Building improvements are to be made based upon greatest need and to include items listed in previous capital request or items similar thereto.		
<b>Benefit:</b> Preventive maintenance delays to buildings or structures which, if not addressed immediately, may cost more in the future.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> This project has been approved for the last 9 years and provides necessary flexibility to the capital needs of the town.		<b>Typical Replacement Cycle:</b> n/a
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Deferred maintenance increases the risk of more costly repairs		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Increased building maintenance costs		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> The various improvements projects may include, but are not limited to some projects such as: Engineering services for future capital projects, engineering and design EIFS Pool envelope, space needs for SPS for Town Hall, Ameresco IGA, engineering and architectural design for DPW cold storage, town hall boiler, engineering and design documents for roof top HVAC unit at the Fairbanks Center.		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Finance Department

**Item/Project Name:**  
MUNIS software module-ERP-ESS Employee Self-Service

<b>Initial Year of Request: 2014</b>	<b>Estimated Total Project Cost:</b> \$10,425	<b>Estimated Future Savings:</b> Hard to quantify but certainly would save time for payroll, H/R, benefits coordinators.
<b>Estimated Incremental Costs:</b> \$1,530 licensing/maintenance	<b>Staffing Changes:</b> n/a	
<b>Justification Code: D</b>	<b>R or NR: N</b>	<b>Priority: 2</b>
<b>Project Description:</b> Enables all employees to easily access Human Resource (HR) data inquiry (i.e. paycheck history, accruals, W-2's, W-4's & 1099's, custom messages and employee handbooks). Additionally, it would enable job posting and application tracking. It would also enable employees to conduct certain transactions (i.e. address changes, leave requests, access performance reviews, view Total Compensation screens and make certain benefits changes).		
<b>Justification and Need:</b> Employees would like direct access to their personal pay and benefits information. This module would enable easy, secure access and eliminate some staff time for providing such. Direct deposit advices could be eliminated altogether. Time and supplies savings are expected. A better way of collecting and accessing the almost limitless customization capabilities in MUNIS payroll & HR.		
<b>Benefit:</b> Easy, convenient access to personal payroll & H/R related information and transactions for employees. Time savings for payroll and H/R staff. All active employees and most retirees utilize the internet. This self-service option is a logical step to take advantage of that.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> n/a	<b>Typical Replacement Cycle:</b> n/a	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Similar options would be available if we "outsourced" payroll & H/R reporting however it would cost of us more money and take more time to combine information. Full integration is not possible with other software.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> We would be losing out on potential savings in supplies but more importantly employee time.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> See attached		



**munis**<sup>®</sup>  
a tyler erp solution

## Munis<sup>®</sup> Employee Self Service

In today's busy world, employees expect greater access to information and services. They expect it at their fingertips, and need it to be easy, complete, and fast. Whether it's updating personal information, requesting leave, or checking compensation information—quick, confidential, and accurate response is critical. As a local government or school administrator, you need to respond to these expectations while struggling with tight budgets and minimal staff. Fortunately, Tyler has the solution: Munis Employee Self Service.

### How it Works

Your employees can easily access your organization's customized Web sites anytime, anywhere—through a secure Internet connection. Access is through a link on your Web site, over a high-speed Internet connection. Flexible hosting options allow you to choose the hosting requirement that best suits your needs. Tyler offers two options:

- Tyler: hosts all needed hardware and software, and manages all traffic. Data is passed between your server and the Tyler Data Center in Falmouth, Maine through a secure connection, and then on to the requesting party.
- Self-hosting: allows you to leverage your existing infrastructure and personnel to manage the Web site locally.

### Munis Self Service Advantages

Munis Employee Self Service offers continuity, because it actively extracts information directly from the Munis database. Users gain access through secure connections using a unique username and password to log into the system, and control permissions to view and change information. Web site information is current because of the direct connection to your Munis data—in other words, information is reflected in real-time. What's more, Tyler provides both software and Munis Self Service support by trained Help Desk professionals, who assist you with any of your issues.

*...continued on reverse*

**Is staff spending too much time responding to routine requests for information? Alleviate these demands, and provide employees with access to key information—conveniently and securely through the Internet. Anytime, from anywhere.**

Empowering people who serve the public<sup>®</sup>



For more information, visit  
[www.tylertech.com](http://www.tylertech.com)

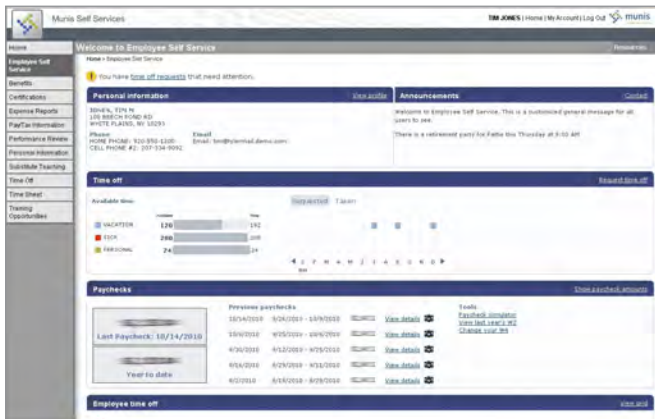
or email  
[info@tylertech.com](mailto:info@tylertech.com)

# Munis® Employee Self Service

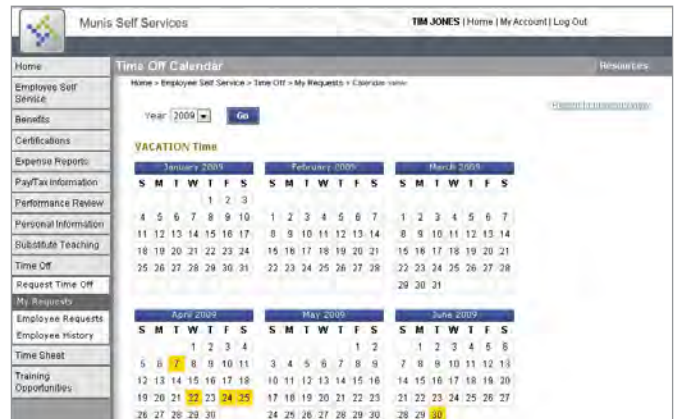
## Employee Self Service

Employees monitor and maintain personal and employment information such as:

- Human Resources (HR) Data Inquiry:
  - » Leave Time Accruals
  - » Complete employee pay history— weekly, YTD, benefits, withholding
  - » W2/W4s & 1099Rs
  - » Documentation such as policy manuals
  - » Post custom messages regarding an employee's compensation
- Online Job Posting & Tracking Applications:
  - » Applicants may attach résumé, copy of transcripts, cover letters, references, etc.
  - » Limitless customization of database fields by HR—State certifications, retirement system participation, language, etc.
- Employee Transactions:
  - » Enter Hours Worked
  - » Submit Leave Requests (vacation, sick, personal, etc.)
  - » View the Total Compensation screen and see the value of both salary and benefits
  - » View custom messages regarding compensation
  - » Supervisors can approve Leave Requests
  - » Enroll for Employee Benefits
  - » Address Changes
  - » Update W4 Information
  - » Pension Contribution with Monthly Breakdown
  - » Receive announcements and department information
  - » View Job Postings & Apply Online
  - » Training Catalog & Registrations and apply online
  - » Performance Evaluations



Munis Employee Self Service Home Page



Munis Employee Self Service Personal Information

## Server Requirements:

Operating System: Window Server

SSL: SSL Certificate issued by a Certification Authority strongly recommended



Quoted By: Karen Grosset  
 Date: 8/5/2014  
 Quote Expiration: 2/1/2015  
 Quote Name: Town of Sudbury-ERP-ESS  
 Quote Number: 2014-9392  
 Quote Description:

**Sales Quotation For**

Town of Sudbury  
 Flynn Building 278 Old Sudbury Road  
 Sudbury, Massachusetts 01776  
 Phone (978) 443-8891

**Tyler Software and Related Services**

Description	License	Impl. Days	Impl. Cost	Data Conversion	Module Total	Year One Maintenance
<b>Productivity:</b>						
Employee Self Service	\$8,500.00	1 @ \$1,275.00	\$1,275.00	\$0.00	\$9,775.00	\$1,530.00
Sub-Total:	\$8,500.00		\$1,275.00	\$0.00	\$9,775.00	\$1,530.00
<i>Less Discount:</i>	<i>\$850.00</i>		<i>\$0.00</i>	<i>\$0.00</i>	<i>\$850.00</i>	<i>\$0.00</i>
<b>TOTAL:</b>	<b>\$7,650.00</b>	<b>1</b>	<b>\$1,275.00</b>	<b>\$0.00</b>	<b>\$8,925.00</b>	<b>\$1,530.00</b>

**Other Services**

Description	Quantity	Unit Price	Unit Discount	Extended Price
Self-Service Installation Fee - Client Hosted (Existing Customers)	1	\$1,500.00	\$0.00	\$1,500.00
<b>TOTAL:</b>				<b>\$1,500.00</b>

**Summary**

	One Time Fees	Recurring Fees
Total Tyler Software	\$7,650.00	\$1,530.00
Total Tyler Services	\$2,775.00	\$0.00
Total 3rd Party Hardware, Software and Services	\$0.00	\$0.00
<b>Summary Total</b>	<b>\$10,425.00</b>	<b>\$1,530.00</b>

**Summary**

**One Time Fees**

**Recurring Fees**

**Contract Total**

**\$11,955.00**

Unless otherwise indicated in the contract or Amendment thereto, pricing for optional items will be held for six (6) months from the Quote date or the Effective Date of the Contract, whichever is later.

Customer Approval: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_ P.O. #: \_\_\_\_\_

All primary values quoted in US Dollars

**Discount Detail**

Description	License	License Discount	License Net	Maintenance Basis	Year One Maint Discount	Year One Maint Net
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**Productivity:**

Employee Self Service	\$8,500.00	\$850.00	\$7,650.00	\$1,530.00	\$0.00	\$1,530.00
<b>TOTAL:</b>	<b>\$8,500.00</b>	<b>\$850.00</b>	<b>\$7,650.00</b>	<b>\$1,530.00</b>	<b>\$0.00</b>	<b>\$1,530.00</b>

**Comments**

Tyler recommends the use of a 128-bit SSL Security Certificate for any Internet Web Applications, such as the MUNIS Web Client and the MUNIS Self Service applications if hosted by the Client. This certificate is required to encrypt the highly sensitive payroll and financial information as it travels across the public internet. There are various vendors who sell SSL Certificates, with all ranges of prices.

Tyler's quote contains estimates of the amount of services needed, based on our preliminary understanding of the size and scope of your project. The actual amount of services depends on such factors as your level of involvement in the project and the speed of knowledge transfer.

Unless otherwise noted, prices submitted in the quote do not include travel expenses incurred in accordance with Tyler's then-current Business Travel Policy.

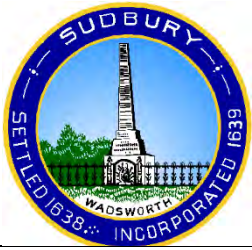
Tyler's prices do not include applicable local, city or federal sales, use excise, personal property or other similar taxes or duties, which you are responsible for determining and remitting.

In the event Client cancels services less than two (2) weeks in advance, Client is liable to Tyler for (i) all non-refundable expenses incurred by Tyler on Client's behalf; and (ii) daily fees associated with the cancelled services if Tyler is unable to re-assign its personnel.

Pricing for optional items will be held for six (6) months from the quote date.

Tyler provides onsite training for a maximum of 12 people per class. In the event that more than 12 users wish to participate in a training class or more than one occurrence of a class is needed, Tyler will either provide additional days at then-current rates for training or Tyler will utilize a Train-the-Trainer approach whereby the client designated attendees of the initial training can thereafter train the remaining users.

Tyler's cost is based on all of the proposed products and services being obtained from Tyler. Should significant portions of the products or services be deleted, Tyler reserves the right to adjust prices accordingly.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Finance Department
<b>Item/Project Name:</b> MUNIS software module-ERP-TRS Tyler Reporting Services

<b>Initial Year of Request: 2014</b>	<b>Estimated Total Project Cost:</b> \$22,325	<b>Estimated Future Savings:</b> n/a
<b>Estimated Incremental Costs:</b> \$5,000 licensing/maintenance	<b>Staffing Changes:</b> n/a	
<b>Justification Code: D</b>	<b>R or NR: N</b>	<b>Priority: 1</b>
<b>Project Description:</b> SQL Server Reporting Services component for MUNIS server. MUNIS report writer module with starting library of reports. Superior yet easier reporting tool than Crystal. Industry standard has moved to SQL reporting. Direct access to MUNIS data.		
<b>Justification and Need:</b> MUNIS is the Town's main financial data system. It is important that we utilize and expand use particularly with respect to financial reporting. It has been 6 years since our last module upgrade/addition.		
<b>Benefit:</b> The ability to access data directly from MUNIS for multiple reports, views and dashboard-like queries. We currently maintain 567 separate funds and thousands of individual accounts. We use the system to process thousands of transaction on a monthly basis. This upgrade will enable us to create reports from all areas of the system. Reporting and data access is an invaluable resource for all areas of the organization.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> n/a	<b>Typical Replacement Cycle:</b> n/a	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> I've been using Crystal reporting but options are difficult and of limited use in MUNIS. SQL Server reporting is a direct platform link to MUNIS.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Limited ability to develop and provide useful financial reports for various departments and committees. A/P, Payroll, General Ledger, Budgeting, Tax, H/R & Benefits.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> See attached		



## Tyler Reporting Services

Tyler Reporting Services meets Munis<sup>®</sup> clients' need for reports and queries in formats unique to them, and helps provide the right information to the right person at the right time. Designed for use with Microsoft SQL Server<sup>®</sup> database server, Reporting Services allows clients to access and report information stored in any of their Munis data files. The database views and models are easy to use, incorporate security and permissions set within Munis, and are an efficient way to connect to the database.

### Benefits

- Tyler professionals install/configure SQL Server Reporting Services components on your server
- Experienced instructors train your staff to use standard reports and how to create their own unique reports
- Tyler provides database views/models allowing access to your Munis data. The benefits of database views include:
  - » Security settings and restrictions give greater control over who has access to specific data
  - » Data fields are renamed and grouped on the server for easier identification
  - » Easily update views
- Utilize Tyler's library of shared reports. The library continues to grow as clients submit their reports for sharing.

### Reporting Views

Data is presented in a simplified structure and uses business-oriented language. The following tools are available:

- Report Builder—ad hoc query tool
- Custom Database Views—a tool designed for building reports using Business Intelligence Development Studio (BIDS), report builder and/or Visual Studio; uses Tyler's existing custom views

### Report Library

Tyler Technologies maintains a library of shared reports on its web site. The library includes (but is not limited to) the following reports:

- Budget Projection
- AP Warrant Report
- Open PO Report
- Top 50 Vendor Payments
- Vendor History
- Time Sheet
- Department/Employee Accrual Report
- Daily Receipts Report
- Parcel/Account List
- Top Taxpayers Report

*...continued on reverse*

# Tyler Reporting Services

## Reporting

- Novice and expert users can quickly assemble reports with the powerful wizards and built-in functionality reports
- Use Datasets to connect to data, select fields and records, sort, format and more
- Add charts, drill down, parameters and hyperlinks to turn reports into interactive documents or web content
- Use analysis tools to examine trends, expose relationships and zero in on important facts. These include charting, field highlighting, running totals, Top N, Bottom N, and sorting,
- Report properties give you the ability to format the report, report items and database fields
- Supports BMP, TIFF, JPEG, PNG and Windows metafiles (WMF) images
- Exports available are PDF, XML, TIFF, CSV, Excel and more
- Execute and save reports as a document on the server for viewing, printing or emailing by authorized users
- Each time a report is executed, Tyler Reporting Services utilizes the most current Munis® data for display



Quoted By: Karen Grosset  
 Date: 8/5/2014  
 Quote Expiration: 2/1/2015  
 Quote Name: Town of Sudbury-ERP-TRS  
 Quote Number: 2014-9396  
 Quote Description:

**Sales Quotation For**

Town of Sudbury  
 Flynn Building 278 Old Sudbury Road  
 Sudbury, Massachusetts 01776  
 Phone (978) 443-8891

**Tyler Software and Related Services**

Description	License	Impl. Days	Impl. Cost	Data Conversion	Module Total	Year One Maintenance
<b>Productivity:</b>						
Tyler Reporting Services	\$20,000.00	3 @ \$1,275.00	\$3,825.00	\$0.00	\$23,825.00	\$5,000.00
Sub-Total:	\$20,000.00		\$3,825.00	\$0.00	\$23,825.00	\$5,000.00
<i>Less Discount:</i>	<i>\$2,000.00</i>		<i>\$0.00</i>	<i>\$0.00</i>	<i>\$2,000.00</i>	<i>\$0.00</i>
<b>TOTAL:</b>	<b>\$18,000.00</b>	<b>3</b>	<b>\$3,825.00</b>	<b>\$0.00</b>	<b>\$21,825.00</b>	<b>\$5,000.00</b>

**Other Services**

Description	Quantity	Unit Price	Unit Discount	Extended Price
Tyler Reporting Services Install	1	\$500.00	\$0.00	\$500.00
<b>TOTAL:</b>				<b>\$500.00</b>

**Summary**

	One Time Fees	Recurring Fees
Total Tyler Software	\$18,000.00	\$5,000.00
Total Tyler Services	\$4,325.00	\$0.00
Total 3rd Party Hardware, Software and Services	\$0.00	\$0.00
<b>Summary Total</b>	<b>\$22,325.00</b>	<b>\$5,000.00</b>

**Summary**

**One Time Fees**

**Recurring Fees**

**Contract Total**

**\$27,325.00**

Unless otherwise indicated in the contract or Amendment thereto, pricing for optional items will be held for six (6) months from the Quote date or the Effective Date of the Contract, whichever is later.

Customer Approval: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_ P.O. #: \_\_\_\_\_

All primary values quoted in US Dollars

**Discount Detail**

Description	License	License Discount	License Net	Maintenance Basis	Year One Maint Discount	Year One Maint Net
Tyler Reporting Services	\$20,000.00	\$2,000.00	\$18,000.00	\$5,000.00	\$0.00	\$5,000.00
<b>TOTAL:</b>	<b>\$20,000.00</b>	<b>\$2,000.00</b>	<b>\$18,000.00</b>	<b>\$5,000.00</b>	<b>\$0.00</b>	<b>\$5,000.00</b>

**Comments**

Tyler's quote contains estimates of the amount of services needed, based on our preliminary understanding of the size and scope of your project. The actual amount of services depends on such factors as your level of involvement in the project and the speed of knowledge transfer.

Unless otherwise noted, prices submitted in the quote do not include travel expenses incurred in accordance with Tyler's then-current Business Travel Policy.

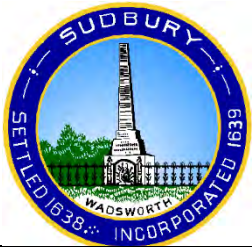
Tyler's prices do not include applicable local, city or federal sales, use excise, personal property or other similar taxes or duties, which you are responsible for determining and remitting.

In the event Client cancels services less than two (2) weeks in advance, Client is liable to Tyler for (i) all non-refundable expenses incurred by Tyler on Client's behalf; and (ii) daily fees associated with the cancelled services if Tyler is unable to re-assign its personnel.

Pricing for optional items will be held for six (6) months from the quote date.

Tyler provides onsite training for a maximum of 12 people per class. In the event that more than 12 users wish to participate in a training class or more than one occurrence of a class is needed, Tyler will either provide additional days at then-current rates for training or Tyler will utilize a Train-the-Trainer approach whereby the client designated attendees of the initial training can thereafter train the remaining users.

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**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

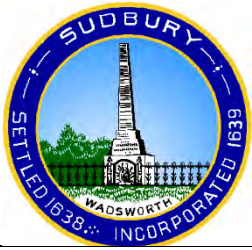
<b>Department/Committee:</b> Sudbury Fire Department
<b>Item/Project Name:</b> Radio Box Upgrades

<b>Initial Year of Request:</b> FY 16	<b>Estimated Total Project Cost:</b> 90,000 45,000 per year over 2 years 30,000 Over three years	<b>Estimated Future Savings:</b> <sup>1</sup> 25,000 per year
<b>Estimated Incremental Costs:</b> <sup>2</sup>	<b>Staffing Changes:</b> <sup>3</sup> Reduced Overtime Costs	
<b>Justification Code:</b> A	<b>R or NR:</b> R	<b>Priority:</b> 2
<b>Project Description:</b> Replace 15 conventional hard wired Master Boxes with new Radio Boxes in 15 Town Buildings		
<b>Justification and Need:</b> The Town currently maintains a cumbersome and expensive system of copper fire alarm cable strung throughout the Town on N Star owned poles. We also purchase and maintain a bucket truck and pay two Department staff overtime to routinely maintain and repair this wired system during storms and wind related emergencies.		
<b>Benefit:</b> Radio Boxes operate with a wireless signal, eliminating the need for the expensive maintenance, equipment and staffing. In addition, they provide more specific and usable information when transmitting alarms.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> The current hard wired system has been in place for many years.		<b>Typical Replacement Cycle:</b> 25 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> The alternative would require using the current expensive and maintenance intensive system.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Continued high maintenance, equipment, and staffing costs		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b>		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Park and Recreation Department/ Park and Recreation Commission

**Item/Project Name:**  
Repair crack and refinish Feeley tennis courts

<b>Initial Year of Request:</b> FY 15	<b>Estimated Total Project Cost:</b> \$40,000	<b>Estimated Future Savings:</b> None
<b>Estimated Incremental Costs:</b> None	<b>Staffing Changes:</b> None	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 3
<b>Project Description:</b> Fill 1106' of cracks in the Feeley Tennis courts with Rite Way crack repair system. Refinish and repaint tennis courts.		
<b>Justification and Need:</b> Courts are in terrible shape and have not been refinished in at least 15-18 years. Cracks need to be filled to maintain a playable surface for the users.		
<b>Benefit:</b> Courts will be like new once the work is done and will prolong, significantly, the life of these tennis courts for our residents.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> At least 15-18 years ago.		<b>Typical Replacement Cycle:</b> Should be resurfaced every 8-10 years.
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Could just repaint but the cracks will continue to get worse and will result in the courts needing to be ground up and replaced entirely which will be much more costly to do.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Will cost \$25,000 per court to completely replace if we have to wait rather than filling the cracks now and refinishing the surface.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Attached quote and information about the product quoted.		

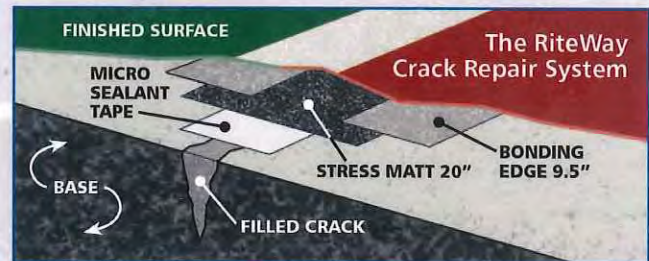
# Tennis...anyone?

The cracks in this court were repaired using traditional methods.

## If you can't afford to do it right... can you afford to do it again?

You've heard *that* before, but here at [INSERT COMPANY NAME], it's not just a catchy rhyme, it's our mantra. Traditional crack repair methods can leave unsightly patches that don't last—resulting in frequent and costly repairs. Tennis court cracks expand and contract with changes in temperature, freezing and thawing and with use. To insure a long-lasting, durable and seamless repair, we use the RiteWay Crack Repair System.

RiteWay is a layered system that becomes an integral part of the tennis court and results in an invisible repair which is not effected by weather or temperature. The installation is so



unique that many tennis court owners can't believe its proven success until they see it for themselves.

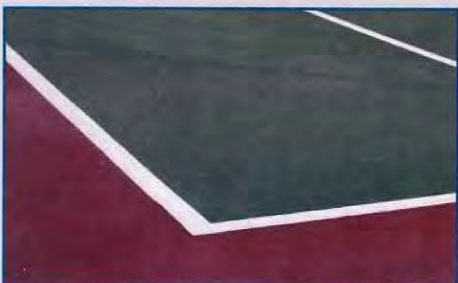
The RiteWay System utilizes a micro-technology that allows the existing cracks in your court to move without breaking the repair. It not only keeps cracks from coming back, but it eliminates dead spots, hollow sounds and bubbling common with other systems.

## **RiteWay** A durable system in a league of its own.

*Crack Repair System*



RiteWay Crack Repair System: Laying down micro sealant tape and stress mat.



RiteWay Crack Repair System: Finished repair.

**No Hollow-Sounding Areas. No Dead Spots. No Bubbling. A True Bounce. Guaranteed.**

We've seen the other systems on the market, but no other overlay system can give you the RiteWay results or guarantee. A RiteWay repair comes with a 2-year conditional warranty and is priced 50 to 75% below the cost of reconstruction.

**RiteWay will keep your court looking new and playing safe year after year.**

Works well on these surfaces:

Tennis	Basketball
Volleyball	Handball
Inline Hockey	Pickleball

**Sports•Tek**  
Beverly, MA  
978•578•1379



# SPORTS-TEK

32 Pratt Ave, Beverly, MA 01915

Phone # 978 578 1379

e-mail rogersportstek@yahoo.com

July 30, 2014

Nancy  
40 Fairbank Rd  
Sudbury, MA 01776

Office: 978 443 1092

## **RE: Resurface Existing Court**

Dear Nancy,

Here is our proposal for the resurfacing of six (6) tennis courts at the Feeley Field in Sudbury. SPORTS-TEK will complete the following:

### **Step I Clean Court**

- Remove all loose debris from court and clean sides thoroughly
- Power wash court surface as needed with high powered 3800 psi power washer **\$1000**

### **Step II Repair Cracks**

- Install multi layered Rite Way crack repair system over 1106' structural cracks (1/16" or larger)  
The Rite Way product will not bubble, has no hollow sound, and incorporates a micro sealant moisture barrier over cracks
- Furnish and apply two or three coats of Sportmaster Color Plus™ paint to cracks to ensure uniform finish **\$19,908**

### **Step III Paint Court Surface**

- Furnish and apply one coat of Sportmaster Acrylic Resurfacer™ color system to entire surface
- Furnish and apply one coat of textured Sportmaster Color Plus™ color system to entire surface
- Furnish and apply one coat of Sportmaster Color plus™ finish system to entire surface
- Layout, double-mask, prime, and paint tennis playing lines white
- Clean up around job site to remove trash and debris **\$18,849**

## **NOTES:**

1. Access to water & electricity will be needed
2. The weather must be good which means the temperature must be above 60 degrees and there must be a 0% chance of rain. If these conditions are not met installation will be delayed.

3. SPORTS•TEK guarantees all labor, material, and equipment furnished and installed from defec Sports Tek guarantees cracks covered by Rite Way Crack System 3 years from installation.

**PRICE:** \$39,757

**TERMS:** 1/2 payment at start - Balance on completion

**DELIVERY:** Approximately 1 week, weather permitting.

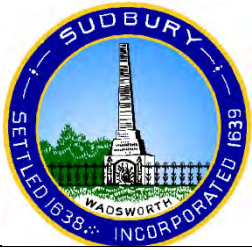
Respectfully submitted by  
Roger Bouchard of SPORTS•TEK

Submitted By: *Roger G. Bouchard*  
(Electronic Signature)

\_\_\_\_\_  
Accepted by

Date: \_\_\_\_\_

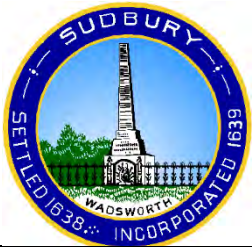
Date: July 30, 2014



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>
<b>Item/Project Name:</b> Capital Tracking #3011 Unit #9 – 6 Wheel Dump Truck

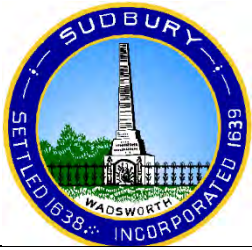
<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$136,500	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #9 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2004	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as sanding, plowing and other roadwork.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>
<b>Item/Project Name:</b> Capital Tracking #3023 Unit #40 - 1 Ton Pick-Up

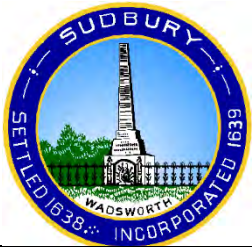
<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$66,000.00	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #40 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2002	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as sanding, plowing and other roadwork.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>
<b>Item/Project Name:</b> Capital Tracking #3050 Unit #PR-4 - 1 Ton Pick-Up

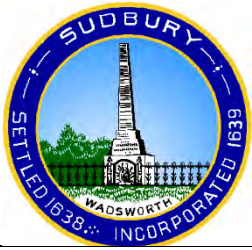
<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$42,000.00	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #PR-4 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2005	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as sanding, plowing and other roadwork.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>
<b>Item/Project Name:</b> Capital Tracking #3032 Unit #34 – 10 Wheel Dump

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$174,800.00	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #34 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2000	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as sanding, plowing and other roadwork.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		

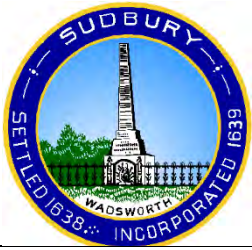


**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**

**Item/Project Name:**  
Capital Tracking #3044  
Unit #L-1 10 Wheel Roll-Off (Transfer Stn)

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$184,800.00	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #L-1 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2006	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as hauling waste and recycling from the Town Transfer Station		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>
<b>Item/Project Name:</b> Capital Tracking #3051 Unit #PR-11 - 1 Ton Pick-Up

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$48,000.00	<b>Estimated Future Savings:</b>
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b>	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b>
<b>Project Description:</b>  Unit #PR-11 Replacement		
<b>Justification and Need:</b> Fleet Maintenance		
<b>Benefit:</b> Systematic replacement helps eliminate job down time and insures safety of employees.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 2006	<b>Typical Replacement Cycle:</b> Approximately 7-10 Years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> An alternative would be to purchase used vehicles which would most likely reduce the reliability of the equipment and increase maintenance cost.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Significant delays in important town operations such as sanding, plowing and other roadwork.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> N/A		





**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b>	
<b>Item/Project Name:</b> Capital Tracking # Route 20 & Nobscot Rd Intersection Realignment	
<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$550,000
<b>Estimated Incremental Costs:</b>	<b>Staffing Changes:</b> None / N/A
<b>Justification Code:</b> A	<b>R or NR:</b> NR
<b>Priority:</b> 1	
<b>Project Description:</b>  Route 20 & Nobscot Road Intersection - Realignment	
<b>Justification and Need:</b> 40% of traffic between Union Ave and Nobscot is North South traffic.	
<b>Benefit:</b>  Alleviate traffic congestion in this area.	
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1999	<b>Typical Replacement Cycle:</b> N/A
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b>  There are no other alternatives.	
<b>Consequences of Not Implementing/Delaying Implementation:</b>  Longer cues, increased traffic congestion and air quality issues.	
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b>  Estimate done by Engineering Department. To be put out to bid.	



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
DPW

**Item/Project Name:**  
Underground Fuel Storage Replacement and Programming

<b>Initial Year of Request:</b> FY15	<b>Estimated Total Project Cost:</b> \$250,000	<b>Estimated Future Savings:<sup>1</sup></b> N/A
<b>Estimated Incremental Costs:<sup>2</sup></b> N/A	<b>Staffing Changes:<sup>3</sup></b> N/A	
<b>Justification Code:</b> A	<b>R or NR:</b> NR	<b>Priority:</b> 1

**Project Description:**  
Remove current gas and diesel underground storage tanks and replace with above ground tanks. Acquire updated fuel tracking system.

**Justification and Need:**  
Current storage tanks are approximately 20 years old and have begun to require significant repairs. Current fuel tracking systems (GasBoy system) is very old in technical terms and will not interface with current technology. Replacement parts and service companies have been scarce and it is difficult to find repair services that work on this system.

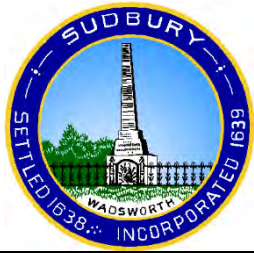
**Benefit:**  
The benefit of moving to an above ground fuel tank storage is to have storage system that is more easily accessible for possible leaks and repairs. The benefit of having a new fuel tracking system is that we will be able to more easily interface with current technology and also access service and repair parts more easily.

<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> The current system was installed in approximately 1995.	<b>Typical Replacement Cycle:</b> Every 15-20 years for tanks. Fuel tracking depends on how fast technology changes.
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**Alternatives Considered/Reasons for Rejecting Alternatives:**  
We have considered replacing the current underground tanks but this raises concern over possible leaks that could lead to an underground hazmat problem. We have considered keeping the current fuel tracking system but we continue to have an increase in repair problems that no longer have parts or service personnel that handle a system this old.

**Consequences of Not Implementing/Delaying Implementation:**  
If the underground storage tanks leak, it could cause a possible hazmat problem. If the tanks or tracking systems no longer have service personnel to support repairs we may be at a crisis level of not having fuel on hand for all public safety vehicles.

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Dept. of Public Works

**Item/Project Name:**  
Town-wide Walkways

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$100,000	<b>Estimated Future Savings:</b> NA
<b>Estimated Incremental Costs:</b> None	<b>Staffing Changes:</b> None	
<b>Justification Code:</b> A	<b>R or NR:</b> R	<b>Priority:</b> 1

**Project Description:**

Request \$100,000 in FY16 for engineering, design and construction of priority walkways townwide.

The Comprehensive Walkway Program seeks to provide a network of walkways throughout Sudbury. This walkway network will:

- a. Provide safe, accessible paved surfaces for pedestrians and other users which are separated from the roadway pavement used by motorized vehicles.
- b. Link up Sudbury conservation land, parks and other public areas of surrounding towns. Some of these towns have walkways terminating at the Sudbury line (e.g., Framingham's at Old Framingham Road);
- c. Provide access to public areas such as schools, recreation centers, shopping centers, houses of worship, etc.; and
- d. Increase the flexibility of school programs by freeing them from the restriction imposed by bus schedules and possibly resulting in bus fleet reductions.

Prior to adoption of the Community Preservation Act in Sudbury in 2002, walkway construction was funded in the annual budget. Since 2002, walkway construction has been funded almost exclusively with CPA funds, and walkways have been constructed on Nobscot Road, Willis Road, Raymond Road, Peakham Road, Concord Road, Dakin Road, North Road and Old Framingham Road, for a total of approximately \$850,000 appropriated. Walkways under consideration for FY16 funds include Pantry Road, Dutton Road, Powder Mill Road, Old Lancaster Road, Union Avenue, Marlboro Road and Goodman's Hill Road. The allocated funds will not be sufficient to construct all of these walkways. Furthermore, additional walkways may be added to this list upon neighborhood request.

It is the intent of this capital request to plan for the construction of walkways listed in the Walkway Committee report within a realistic time frame set up annually by the DPW Director. Appropriating funds on an annual or semi-annual basis will allow the town to utilize DPW staff to complete segments of work, thereby lowering the final cost of construction.

<p><b>Justification and Need:</b></p> <p>a. Risk to public safety: Most pedestrian-vehicular accidents in Town can be attributed to the lack of separate thoroughfares for vehicles and pedestrians. As town population increases, the volume of traffic on roads increases; which in turn increases the potential for pedestrian/vehicle collisions.</p> <p>b. Equitable provision of services: Some of the oldest streets in town have walkways along them, and others do not. These old streets are typically narrow and curvy, and do not allow safe pedestrian usage. Funds should be earmarked to expand the walkway network along the older streets in town.</p> <p>c. Funding Sources outside taxation: The walkway program currently funded in Sudbury utilizes public funds from Town Meeting appropriation and private contributions from developers and private citizens. These private contributions have been made willingly over the past several years due to the progress made in constructing walkways. Disruption of the program will diminish outside private contributions.</p> <p>d. Provide additional, vitally needed modes of recreation and transportation, i.e., walking, jogging and bicycling.</p> <p>e. Provide safe routes to and from schools and bus stops for students.</p>	
<p><b>Benefit:</b></p> <p>The benefits of the entire walkway program are enumerated in the Report of the Sudbury Walkway Committee, February 2000, and in the Project Description and Justification and Need sections of this document (available on the Town's website at <a href="http://www.sudbury.ma.us">www.sudbury.ma.us</a> under Committees/Planning Board).</p>	
<p><b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b></p> <p>NA</p>	<p><b>Typical Replacement Cycle:</b></p>
<p><b>Alternatives Considered/Reasons for Rejecting Alternatives:</b></p> <p>It had been previously requested, and defeated, at the 2000 Annual Town Meeting to approve a Proposition 2 ½ override for the construction of the comprehensive list of walkways. Town Meeting has favored annual appropriations for walkway construction within the levy limit. It is believed that under the direction of the DPW Director, the funds will be used and managed more efficiently this way, with the overall effect of costing the taxpayers less. The requested funds will be expended in the Dept. of Public Works budget, utilizing as much town staff time as possible given work schedules and expertise. The alternative is to contract out the entire job at significantly higher costs. As planned, dividing tasks between town departments and private contractors produces the lowest construction costs.</p> <p>A second alternative is to apply for Community Preservation funds for the construction of walkways, which application will be submitted for FY16 funding.</p>	
<p><b>Consequences of Not Implementing/Delaying Implementation:</b></p> <p>Walkway construction is crucial for the safety of the Town's residents. School children and town residents cannot walk safely along Town roads due to their narrow width, winding curves and lack of suitable shoulders. Addressing this safety issue should not be delayed until AFTER a crisis occurs.</p>	

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**

Many opportunities to expand the Town walkway system at minimum cost to the Town are in place. The Town regularly accepts gifts from developers, through subdivision and site plan approval, to be placed in a general walkway engineering and construction fund, expended under the direction of the DPW Director. All developers are asked to consider the off-site impacts of development, as well as the marketability of providing amenities in developments. The Planning Board continues to expand the walkway system through the subdivision approval process, and the Board of Selectmen continues to request commercial development proposals to provide walkways along crucial segments of Route 20 and its adjacent streets.

In 2007 a new initiative was started to involve residents in the planning and prioritization of walkways. This initiative requires neighborhood support and assistance in order to receive funding. This relieves town staff of persuading hesitant homeowners to agree to easements, and involves the residents to discuss the needs of the neighborhood and the benefits of walkways with reluctant homeowners. To date the initiative has been very successful, reducing the amount of pre-planning staff time significantly for the most recent projects.

Walkways have historically benefited from the support of Town Meeting, the Planning Board, the Board of Selectmen, the Capital Improvement Planning Committee, the Community Preservation Committee and the Park and Recreation Commission in past years. The number of residents who utilize the walkways attest to the popularity of continuing the program.

An annual amount of approximately \$20,000 is included in the Department of Public Works budget for maintenance of existing walkways. It is requested that this line item be funded in the Public Works Department budget every year to adequately maintain these important Town resources. A separate capital funding request has also been made for walkway maintenance.

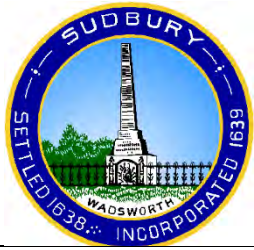
**Walkways Constructed since 2000 with CPA Appropriated Funds, Town funds and Developer Contributed Walkway Funds:**

	Length
Landham Road – Coolidge Lane to Route 20/Eddy Street to Framingham Town line	.36 miles
Maynard Road – Fairbank Road almost to Hudson Road	1.3 miles
Route 20 – King Philip Road to Green Hill Road	.8 miles
Raymond Road – Feeley Field to Route 20	.125 miles
Warren Road to Cider Mill Road	.25 miles
Horse Pond Road – State Police Crime Lab to Route 20	.11 miles
Peakham Road – Robert Best Road to Robert Best Road	.38 miles
66 Mossman Road	.13 miles
Concord Road - Thompson Drive to Lincoln Road	.25 miles
Willis Road – Kendra to Ford Road	.8 miles
Kendra to Marlboro	.5 miles
Dakin Road – Blacksmith Dr to Philomen Whale Rd	.3 miles
Nobscot Road – Route 20 to Mahoney Farm Dr.	.9 miles
North Road – Haynes Rd to Davis Recreation Field	.85 miles
Route 20 – Shaws Plaza to Nobscot Road	.2 miles
Old Framingham Road	.2 miles
Peakham Road – Robert Best to French Rd	.2 miles

Nobscot Road – Route 20 to Mahoney Farm Dr.	.9 miles
North Road – Haynes Rd to Davis Recreation Field	.85 miles
Route 20 – Shaws Plaza to Nobscot Road	.2 miles
Old Framingham Road	.2 miles
Peakham Road – Robert Best to French Rd	.2 miles
Dudley Road	.5 miles
<hr/>	
TOTAL	8.0 miles

Additional Walkways Completed by Developers:

- Dakin Road - LEAP School to Blacksmith Drive
- Route 20 - Nobscot Road to Union Avenue (south side of Route 20)
- Shaw's Plaza to Nobscot Road (south side of Route 20) – Under construction
- Haynes Road - In front of Willow Hill School to Puffer Lane
- Hudson Road - Spruce Lane to Ronald Road
- Maynard Road - Opposite Cutting property to Wyman Drive
- North Road - Mossman Road to Longfellow Road
- Old County Road - Villages at Old County Rd development to Route 20
- Route 20 – Maple Ave to Sudbury Crossing Plaza (south side of Route 20)



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> School Security and Access Controls

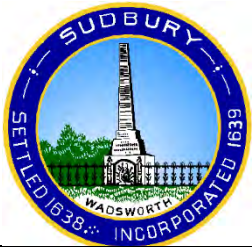
<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$220,000	<b>Estimated Future Savings:<sup>1</sup></b> Life Safety
<b>Estimated Incremental Costs:<sup>2</sup></b> \$5,000/year	<b>Staffing Changes:<sup>3</sup></b> None	
<b>Justification Code:</b> A	<b>R or NR:</b> R	<b>Priority:</b> 1
<b>Project Description:</b> Install electronic card access and exterior security cameras at the Curtis, Haynes, Noyes, Nixon and Loring schools		
<b>Justification and Need:</b> The goal of this project is to keep our youth safe and healthy while in our school buildings. As we have learned, school violence can happen anywhere. With the implementation of entry access control and the installation of security cameras, we can be better prepared to deal with and prevent school violence. There is no 100% guarantee that our schools will be free from violence and there is no easy solution. However, this investment is another step in ensuring we do all we can to protect our children, teachers and parents in our school buildings.		
<b>Benefit:</b> Provide secure and safe facilities for our children, staff and residents		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> In 2012, the front entry doors at the schools were locked and cameras installed to control public entry. This proposal is a continuation of the goal to ensure safety in the schools.		<b>Typical Replacement Cycle:</b> 10 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> We could put it off for another year, however, security and safety is our most important goal in Sudbury		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Less control for administrative staff to monitor who enters our school buildings.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Attached is a quote from the Vendor working with the Town on the new police station, Flynn Building, and Goodnow Library.		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.





**Town of Sudbury  
Capital Improvement Budget Request  
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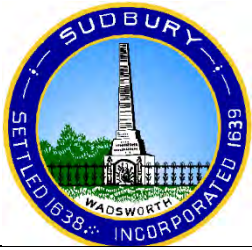
<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> School Flooring Replacement

<b>Initial Year of Request:</b> FY13	<b>Estimated Total Project Cost:</b> \$100,000	<b>Estimated Future Savings:<sup>1</sup></b> None
<b>Estimated Incremental Costs:<sup>2</sup></b> none	<b>Staffing Changes:<sup>3</sup></b> none	
<b>Justification Code:</b> A	<b>R or NR:</b> R	<b>Priority:</b> 1
<b>Project Description:</b> Replace existing classroom carpet and cracked tiles in selected rooms with vinyl composition tile and area rugs.		
<b>Justification and Need:</b> The existing classroom carpet is worn out and must be replaced. Carpet is not a good flooring choice for a classroom and it is difficult to keep clean and odor free.		
<b>Benefit:</b> Reduce cleaning costs and provide more sanitary space for the children in classrooms.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 10-15 years		<b>Typical Replacement Cycle:</b> In this environment, carpet life is approx. 6 yrs., vinyl floor will last 25 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Postpone replacement until next year, but the need to replace is too great to postpone.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Mold, mildew, and unsanitary environment for classrooms and deterioration of school building.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> The long term plans to remove the existing carpets in all the schools classrooms began FY14 when the town approved \$100,000 in the capital budget to begin the replacement. Buildings are getting older and the floor finishes must be replaced in some locations.		

<sup>1</sup>Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup>Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

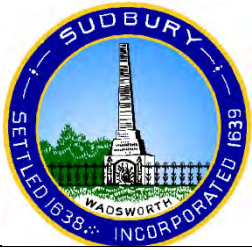
<sup>3</sup>Quantify staffing changes (up or down) anticipated if project is implemented



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Facilities - SPS
<b>Item/Project Name:</b> School Rooftop HVAC Unit (Noyes or Loring)

<b>Initial Year of Request:</b> FY14	<b>Estimated Total Project Cost:</b> \$75,000	<b>Estimated Future Savings:<sup>1</sup></b> Energy improvement
<b>Estimated Incremental Costs:<sup>2</sup></b> Save Energy	<b>Staffing Changes:<sup>3</sup></b> None	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b> 3
<b>Project Description:</b> Replace A/C condensing unit and coil on HVAC. Both schools have rooftop units that are getting old and need to have replacement plans for the upcoming years.		
<b>Justification and Need:</b> The existing unit are 15 years old and are very near the end of their useful life.		
<b>Benefit:</b> Maintain the building systems and protect asset. This project would also update refrigerant from R22 to R410A which is more environmentally responsible		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1999, 2000	<b>Typical Replacement Cycle:</b> 15 years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Put off for a year and hope it does not fail.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Increasing repairs and service calls on aging units.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> The condensing coils are starting to wear out and are leaking. The rooftop units are the heating and cooling systems for our buildings and many are becoming older and need to be replaced. This request will become more frequent in the upcoming years as many of our schools are of a similar age and these systems will need replacement. The plan for FY16 is to be prepared for replacement of one system, the exact unit number will be decided next summer.		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Facilities - SPS

**Item/Project Name:**  
Haynes School and Curtis School Septic Pump and Controls

<b>Initial Year of Request:</b> FY14	<b>Estimated Total Project Cost:</b> \$80,000 (\$40,000 at each school)	<b>Estimated Future Savings:<sup>1</sup></b> Preventive Maintenance Costs
<b>Estimated Incremental Costs:<sup>2</sup></b> N/A	<b>Staffing Changes:<sup>3</sup></b> N/A	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 2
<b>Project Description:</b> Replace existing septic system pumps and controls with new controls.		
<b>Justification and Need:</b> Existing pumps are aging and starting to become problematic.		
<b>Benefit:</b> Insure system is operating effectively and is well maintained.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> Haynes was installed in 1999 and Curtis was installed in 2000.		<b>Typical Replacement Cycle:</b> 15 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Wait and hope that pumps do not fail. Consider replacing pumps at only one school this year and request funds for 2 <sup>nd</sup> school next year.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Pump failure may cause building closure. This product will ensure that the septic system does not shutdown.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b>  		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Facilities/SPS	
<b>Item/Project Name</b> Nixon Cafetorium Roof/Windows and Envelope Improvements ( MSBA)	
<b>Initial Year of Request:</b> FY 15	<b>Estimated Total Project Cost:</b> 600,000 (approx. 200,000 reimbursed from State, estimated total for town 400,000)
<b>Estimated Incremental Costs:</b> <sup>2</sup> This will save money	<b>Staffing Changes:</b> <sup>3</sup> none
<b>Justification Code:</b> B	<b>R or NR:</b> NR
<b>Priority: 1</b>	
<b>Project Description:</b> Replace Cafetorium windows, doors and roof; replace all 1960 windows in kitchen and administration rooms. Remove and replace caulking at Nixon School, to cut out and re-caulk all of the masonry to masonry vertical joints and masonry to window perimeter joints at the 1990 and 1994 Wings of the school, including cutting out and re-caulking the metal to metal joints within the window system. The new sealant to be installed will be a silicone caulking at all locations.	
<b>Justification and Need:</b> The Sudbury Public Schools (SPS) are committed to replacing the aging and deteriorated shingle roof on the cafetorium of the General John Nixon Elementary School and replacing the 52 year old inefficient single pane glass windows in the cafetorium, administration offices, and the kitchen with new energy efficient stretch code compliant windows along with the replacement of selected older deteriorated exterior doors with new more efficient weather stripped and weather tight doors. Existing caulking is 24/20 years old and has deteriorated and must be replaced	

**Benefit:** Preserve the building and save energy. Many rubber gaskets on these older windows are missing or falling out, leading to air and water infiltration. Most are difficult to operate and do not lock properly. Perimeter sealants have failed and water infiltration is evident. Russo Barr has recommended that all the 1960's windows be removed and replaced with new, energy efficient, commercial grade, thermally broken aluminum framed windows with low-e, insulated glass panels. The window replacement at the cafetorium will also provide the opportunity to install security glazing to enhance the recent efforts to increase school safety. The existing glass allows full sight access into the space, used for student assemblies and lunch room. The proposed glazing at the sight level will be tinted or opaque to prevent sight access to student space from unwarranted solicitors.

Making repairs to these elements at Nixon school, and the operational issues caused by their inadequacies, is taking away from the core educational programs and various capital needs. The SPS are aware that increased energy efficiency in the areas addressed will result in savings that can help support its core educational mission. Given Sudbury's designation as a Green Community with its associated requirements to reduce its energy baseline, and the SPS's commitment to continued, responsible energy conservation and building capital improvements, it's the goal of SPS to replace the roof, exterior doors and selected windows at Nixon under the accelerated repair program.

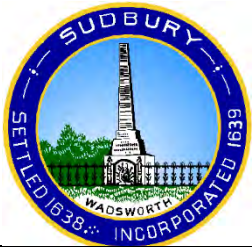
<p><b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1960 – windows ; 1991 - roof</p>	<p><b>Typical Replacement Cycle:</b> 30 years (windows) 25 years (roof and caulking)</p>
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**Alternatives Considered/Reasons for Rejecting Alternatives:** Delay would not cause momentous harm, however, MSBA has invited us into the Accelerated Repair Program, and we will be reimbursed for over 30 % of the cost of the construction, without MSBA, we would have to pay for all of it, and the windows and doors should be replaced.

**Consequences of Not Implementing/Delaying Implementation:** Loss of energy savings, increase cost of fire proofing curtains, uncomfortable spaces where the drafty old windows are located. Water intrusion into building envelope, deterioration of façade and interior finishes

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**  
Town has received support from the Massachusetts School Building Authority in 2014, and will receive at least 30% matching funds.

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)  
<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)  
<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

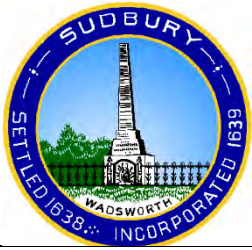
<b>Department/Committee:</b> Facilities – Town/SPS
<b>Item/Project Name:</b> Town & School Parking Lot Improvements and Repairs

<b>Initial Year of Request:</b> FY14	<b>Estimated Total Project Cost:</b> \$200,000	<b>Estimated Future Savings:<sup>1</sup></b> N/A
<b>Estimated Incremental Costs:<sup>2</sup></b> none	<b>Staffing Changes:<sup>3</sup></b> none	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b> 1
<b>Project Description:</b> Resurfacing and improvements in School parking lots.		
<b>Justification and Need:</b> Many town parking lots, these parking lots, sidewalks and curbs are deteriorated and require significant investment to maintain. Last year \$330,000 was approved to replace Nixon lot and do major repairs at Curtis. This funding request will support an increase in maintenance at the sites and prevent the need for complete removal and replacement.		
<b>Benefit:</b> Improve the building safety and appearance and prolog the life of the lots.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> Most schools were new in the 1990's and the Library was new in 1998, the lots and sidewalks were installed at that time. Now, these sites are starting to wear out. This capital expense will ensure proper maintenance and repairs are included in the upkeep of these facilities.		<b>Typical Replacement Cycle:</b> 30 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> If this is postponed, it will cause more costly repairs in the future		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Cost of materials and labor to patch surfaces and fills holes to keep driveways and parking lots operational and safe.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc.)</b>		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
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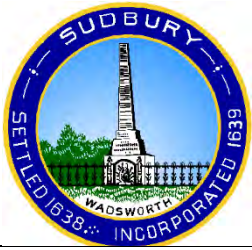
<b>Department/Committee:</b> Facilities – Town/SPS
<b>Item/Project Name:</b> Carpet Replacement

<b>Initial Year of Request:</b> FY13	<b>Estimated Total Project Cost:</b> \$108,000	<b>Estimated Future Savings:<sup>1</sup></b> N/A
<b>Estimated Incremental Costs:<sup>2</sup></b> N/A	<b>Staffing Changes:<sup>3</sup></b> N/A	
<b>Justification Code:</b> B	<b>R or NR:</b> R	<b>Priority:</b> 1
<b>Project Description:</b> Replace selected portions of existing carpet in Curtis School, Loring School and Goodnow Library.		
<b>Justification and Need:</b> Carpet is worn out and needs to be replaced		
<b>Benefit:</b> Protect and preserve town asset		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> Goodnow Library – 1998, Loring – 1999, Curtis - 2000		<b>Typical Replacement Cycle:</b> 10-15 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Postpone the replacement, but the carpets need to be replaced now.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Rooms look old and deteriorated and unkempt in appearance.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> n/a		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Sudbury Fire Department
<b>Item/Project Name:</b> Cardiac Monitor Replacement

<b>Initial Year of Request:</b> FY 16	<b>Estimated Total Project Cost:</b> 96,000	<b>Estimated Future Savings:<sup>1</sup></b>
<b>Estimated Incremental Costs:<sup>2</sup></b>	<b>Staffing Changes:<sup>3</sup></b>	
<b>Justification Code: A</b>	<b>R or NR: R</b>	<b>Priority: 1</b>
<b>Project Description: Replace 3 Lifepak 12 Cardiac Monitors with 3 new Lifepak 15 Cardiac Monitors and Accessories</b>		
<b>Justification and Need: Our current Physio Control Lifepak 12 Cardiac Monitors were purchased as used equipment in 2010. We want upgrade them to the newest Lifepak 15 models to take advantage of newer technology and features such as the ability to read carbon monoxide blood levels, easier to read color screens for better EKG and other medical interpretations, and automatic re-analyzation and re-printing of subtle changes in the event of myocardial infarction, ie, heart attack.</b>		
<b>Benefit: Much improved analytical tools for our Paramedics to analyze and treat Advanced Life Support Patients.</b>		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle): Old Lifepak 12's were purchased in 2010, as used monitors manufactured in 2006.</b>	<b>Typical Replacement Cycle: 5 years</b>	
<b>Alternatives Considered/Reasons for Rejecting Alternatives: Having reliable and technologically advanced cardiac monitors is imperative to the functionality and efficiency of our Advanced Life Support Emergency Medical Services Program.</b>		
<b>Consequences of Not Implementing/Delaying Implementation: Sub-standard Patient Care</b>		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b>		

<sup>1</sup> Quantify any future savings if project is implemented (e.g., personnel costs, maintenance, repairs, energy conservation, etc.)

<sup>2</sup> Quantify any incremental costs anticipated if project is implemented (e.g., future personnel costs, maintenance, repairs, etc.)

<sup>3</sup> Quantify staffing changes (up or down) anticipated if project is implemented.



January 14, 2014

Mr. Kevin Rossley  
Lincoln-Sudbury Regional School District  
390 Lincoln Rd.  
Sudbury, MA 01776

**PROPOSAL FOR FIRE PROTECTION ENGINEERING SERVICES  
RETROFIT FIRE ALARM SYSTEM DESIGN  
LINCOLN-SUDBURY HIGH SCHOOL**

Dear Kevin:

As requested, Hughes Associates, Inc. (HAI) has prepared this proposal to the Lincoln-Sudbury Regional School District for fire protection engineering design services related to the fire alarm system at the high school in Sudbury, MA.

The school is currently protected by a networked series of Gamewell 610 fire alarm control panels. The project involves a design for a new fire alarm system backbone, with new fire alarm panels and replacement of the existing network riser. This proposal assumes there will be no work involving any of the existing signaling line circuits, initiating devices, or notification appliances on any of the floors.

This proposal is divided into three sections – Design Phase, Bid Phase, and Construction Administration Phase. HAI will act as the Owner's representative in providing specifications, design drawings, bid procurement, submittal review, and construction administration. The Contractor will be responsible for obtaining all permits and paying all permit fees.

**SCOPE OF SERVICES**

HAI intends to provide the following services to Lincoln Sudbury Regional School District:

**DESIGN PHASE**

1. Meet at the Building to review the scope of the project and identify any coordination issues with respect to summer vacation and other projects that may be concurrent with the fire alarm work.
2. Perform a survey of the Building to determine the exact locations, types and quantities of all existing fire alarm control equipment to be replaced with new. This will include a meeting on-site with representatives of the existing system manufacturer to review the content of each remote transponder and the main fire alarm control panel located in the Main Lobby.

3. Determine if the manufacturer can provide a system employing a reduced number of panels in the system.
4. Develop design drawings for the project. The drawings will provide a conceptual riser diagram showing locations of existing fire alarm control equipment to be replaced with new control equipment.
5. Provide a Design Specification for the project. It is anticipated that the Client will provide general conditions to attach to our specification.
6. Submit 95% design drawings to the Client for their review and input.
7. Attend one (1) meeting with the Client to discuss the project, receive comments from review of the 95% drawings, and information necessary to complete the design.
8. Finalize drawings and specifications for bid purposes installation notes, details, and all equipment locations.
9. Prepare Basis of Design Narrative, as required by 780 CMR.
10. Submit three (3) sets of drawings and specifications to the Client for use in obtaining bids for this project.

### **BIDDING PHASE**

1. Attend a pre-bid meeting with the Client and prospective electrical contractors. Minutes of the meeting and a letter will be issued answering questions from the meeting. This letter will be sent to each bidding contractor at the meeting.
2. Conduct a cost and technical review for the bids received. A letter summarizing each bid will be provided, which will include a recommendation for award of the project.

### **CONSTRUCTION ADMINISTRATION SERVICES**

1. Attend one (1) on-site pre-construction meeting to formally initiate the project and to discuss the scheduling of the work with the contractor.
2. Review shop drawings, equipment submittals, details and standby battery calculations prepared by the contractor. It is anticipated that everything will be submitted as a single package. Two (2) reviews are budgeted. A letter report of our findings will be provided for each review.
3. Respond to RFIs and field conditions that affect the installation of the new equipment.

4. Participate in up to three (3) interim meetings at the school. These meetings will be concurrent with an inspection by HAI to investigate progress. These meetings will involve representatives of HAI, the awarded bidder and the Client.
5. Perform punchlist inspection and prepare a letter report.
6. Attend acceptance testing with the Fire Department.
7. Review as-built submittals made by the contractor for completeness.

### **ADDITIONAL SERVICES**

Work outside of the Scope specified in this proposal will be conducted on a mutually agreed upon basis. When such work is requested, HAI will submit an estimate of the cost to the Client for approval prior to commencing work. Additional work may include, but is not limited to:

1. Meetings and surveys in addition to those specified above.
2. Design of any fire protection systems not listed in the Scope of Services.
3. Preparation of AutoCad architectural floor plans or fire alarm as-built conditions.
4. Designing for replacement of any field devices that may be necessitated by the panel upgrade.

### **CLIENT RESPONSIBILITIES**

This proposal is based upon the Client providing project related drawings, documentation, and other information necessary to perform our work (i.e. architectural floor plans). Electronic drawings must be in AutoCad format or hardcopies suitable for scanning. In addition, Client must provide access to all areas of the building during surveys and site inspections (if necessary).

### **TERMS AND CONDITIONS**

1. Consultant will provide the professional services and deliverables outlined on a fixed fee basis in accordance with the following schedule:

a. Design Phase:	\$4,300
b. Bid Phase:	\$1,100
c. Construction Admin. Phase:	<u>\$4,400</u>
TOTAL:	\$9,800
2. Expenses will be reimbursable at cost plus 10% and are estimated to be \$200. Expenses include local travel mileage, parking, postage, express shipping, and other miscellaneous costs.


3. James G. DiPaoli, P.E. will serve as project manager and point of contact for this project. Consultant reserves the right to assign personnel on an "as available" basis if necessary.
4. See attached terms and conditions.

**ACCEPTANCE**

**EXECUTION OF THIS PROPOSAL INDICATES THE CLIENT HAS READ AND FULLY UNDERSTANDS ALL THE TERMS AND CONDITIONS CONTAINED HEREIN AND CONFIRMS ACCEPTANCE OF SAME.**

To indicate acceptance and to authorize initiation of services, return a countersigned copy of this agreement to Hughes Associates, Inc., 5 Mount Royal Avenue, Suite 240, Marlborough, MA 01752 or via e-mail. Please call if you have any questions regarding this proposal.

Respectfully submitted by Hughes Associates, Inc.

  
\_\_\_\_\_  
James G. DiPaoli, P.E.

January 14, 2014  
\_\_\_\_\_  
Date

Accepted by:

LINCOLN-SUDBURY REGIONAL SCHOOL DISTRICT

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

# Agreement For Services



HUGHES ASSOCIATES, INC.  
FIRE SCIENCE & ENGINEERING

**Date: 01/14/14**

**BETWEEN:**

**Service Provider:** Hughes Associates, Inc.

**Client:** Lincoln-Sudbury Regional School District

**Period of Performance:** 2014

Hughes Associates, Inc.  
3610 Commerce Drive  
Suite 817  
Baltimore, Maryland 21227

Phone: 410-737-8677  
Fax: 410-737-8688  
[www.haifire.com](http://www.haifire.com)

**Brief Description of Effort (Attach SOW):**

Fire Alarm System Upgrade

**Type of Contract:  
(Check one)**

T&M (Not to Exceed) Amount \$

Firm Fixed Price

Check if Rate Schedule is Attached

\$9,800

Other (Describe below)

Expenses to be billed at cost + 10%.

**HAI Contact Phone & Email:** 508-624-7766 / [jdipaoli@haifire.com](mailto:jdipaoli@haifire.com)

**Client Contact Phone & Email:** \_\_\_\_\_

**Provide contact name, Email and mailing addresses for invoices:**

**ATTACHED GENERAL TERMS & CONDITIONS ARE AN INTEGRAL PART OF THIS AGREEMENT**

**EXHIBITS:** The following exhibits are attached to and made a part of this Agreement:

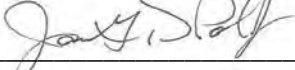
1. Exhibit A - Attached General Terms & Conditions.
2. Attached Proposal from HUGHES ASSOCIATES, INC. dated January 14, 2014.

**IN WITNESS WHEREOF,** the parties hereto have made and executed this Agreement as of the day and year first written above:

**ENGINEER:**

**CLIENT:**

**HUGHES ASSOCIATES, INC. (HAI)**

By:   
Signature

James G. DiPaoli, P.E.  
Printed name

Fire Protection Engineer  
Title

\_\_\_\_\_  
By: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

## EXHIBIT A

### General Terms & Conditions For the HAI Proposal and Agreement for Services for:

**CLIENT: Lincoln-Sudbury Regional School District**

**\PROJECT: Fire Alarm System Upgrade**

**Reference Conditions:** Hughes Associates, Inc. will hereinafter be referenced as HAI and the above referenced CLIENT will be referred to as CLIENT. The Project may be hereinafter referenced either as the "Project" or by abbreviation as above set forth.

**Entire Agreement:** These General Terms and Conditions, along with the Agreement for Services to which these General Terms and Conditions are attached (the "Agreement for Services") and the Proposal attached to the Agreement for Services (the "Proposal") (collectively with the Agreement for Services and the Proposal, this "Agreement"), constitutes the entire agreement between CLIENT and HAI, regarding the Project. If HAI has commenced work in connection with the Project, all provisions in this Agreement for the benefit or protection of either party shall apply to such activities. There are no prior or contemporaneous, oral or written, representations, understandings or agreements which are not fully expressed in this Agreement. No amendment or change order shall be valid unless it is in writing and signed by an authorized representative of the party against whom such amendment or change order is sought to be enforced.

**Relationship of Parties.** HAI, in furnishing services to CLIENT, is an independent contractor. HAI does not undertake to perform any regulatory or contractual obligation of CLIENT or to assume any responsibility for the CLIENT's business or operations.

**Subcontracting:** HAI shall supervise, perform or cause to be performed all work to be accomplished by HAI and may call upon the expertise of subcontractors in the performance of the services hereunder.

**Severability:** The provision of this Agreement shall be severable, and if any clause, sentence, paragraph, provision, or other part hereof shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder hereof, which remainder shall continue in full force and effect.

**Billings/Payments:** Invoices for services shall be submitted monthly. Payment is due within 30 days of receipt. If payment is not received 30 days of receipt, such fees shall be subject to a service fee of 1.5% per month, and HAI reserves the right to pursue all appropriate remedies, including, without limitation, suspending all performance under this Agreement. In the event that services are suspended for nonpayment, HAI shall have no liability for any delay or other damage, contractual or otherwise, caused by or arising out of the suspension of services of nonpayment. Acceptance by HAI of any payment more than 30 days overdue shall not serve as a waiver of HAI's contractual right to suspend service for nonpayment. In the event of nonpayment of fees, CLIENT will be responsible for all costs, including, without limitation, court costs, collection costs, reasonable attorneys' fees, expert fees, and all other costs allowed by law, which may be incurred by HAI in pursuit of payment.

**Taxes.** There shall be added to the charges under this Agreement, and CLIENT shall pay to HAI, an amount equal to any taxes, levies and duties, however designated or levied, based upon such charges, this Agreement, the services or materials provided, or their use, including, without limitation, state and local sales and use taxes, which are paid by or are payable by HAI, plus interest and penalties, if any, exclusive, however, of United States federal, state or local taxes based on the net income of HAI. Notwithstanding the preceding sentences, HAI accepts full and exclusive liability for the payment of all employer contributions and taxes measured by the remuneration paid to HAI employees as required by all applicable United States federal, state and local laws, rules and regulations.

**Waiver:** No waiver by either party of any breach, default, or violation of any term, warranty, representation, agreement, covenant, condition, or provision hereof shall constitute a waiver of any subsequent breach, default, or violation of the same or any other term, warranty, representation, agreement, covenant, condition, or provision hereof. All waivers must be in writing and signed by the party against whom enforcement of the waiver is sought. All remedies are cumulative, and the election to pursue less than all remedies shall not be a waiver of the right to pursue any other remedy.

**Force Majeure:** Obligations of either party under this Agreement shall be suspended, and such party shall not be liable for damages or other remedies while such party is prevented from complying herewith, in whole or in part, due to contingencies beyond its reasonable control, including, but not limited to, strikes, riots, war, fire, acts of God, injunction, compliance with any law, regulation, or order, whether valid or invalid, of the United States of America or any other governmental body or any instrumentality thereof, whether now existing or hereafter created, inability to secure materials or obtain necessary permits, provided, however, the party so prevented from complying with its obligations hereunder shall promptly notify the other party thereof.

**Compliance with Law:** In the performance of all services to be provided hereunder, HAI agrees to comply with all applicable federal, state, and local laws and ordinances and all lawful order, rules, and regulations of any constituted authority.

**Applicable Law; Jurisdiction; Venue:** The validity, performance, and construction of this Agreement shall be governed by and construed according to the laws of the State of Maryland exclusive of its conflicts of law provisions. All claims hereunder shall be tried solely and exclusively in the Courts of Baltimore County, Maryland or the United States District Court for the District of Maryland, Northern Division. Each party consents to the jurisdiction and venue of such court. EACH OF THE PARTIES HEREBY KNOWINGLY AND VOLUNTARILY WAIVES ANY AND ALL RIGHTS TO A JURY TRIAL IN ANY PROCEEDING INVOLVING ANY DISPUTE OR MATTER ARISING UNDER THIS AGREEMENT.

**Standard of Care/Warranties:** Services performed by HAI under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT, HAI MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION, OR OTHERWISE, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES ARISING UNDER ANY STATUTE. Except for the warranty expressly set forth in this paragraph, CLIENT acknowledges and agrees that it has relied on no other representations or warranties and that no other representations or warranties have formed the basis of its bargain hereunder.

**Confidentiality:** Each party shall retain as confidential all information and data furnished to it by the other party which are designated in writing by such other party as confidential at the time of transmission and are obtained or acquired by the receiving party in connection with this Agreement, and said party shall not reveal such information to any third party, except as required by law (in which case, the party from whom disclosure is required shall give the other party prompt notice of the demand and cooperate in efforts to limit disclosure).

**Indemnification:** HAI and CLIENT each agree to indemnify, defend and hold harmless the other from and against any and all amounts payable under any judgment, verdict, court order or settlement for death or bodily injury or the damage to or loss or destruction of any real or tangible personal property to the extent arising out of the indemnifying party's negligence in the performance of this Agreement or willful misconduct. The foregoing indemnities are contingent upon: (1) the indemnified party promptly notifying the indemnifying party in writing of any claim which may give rise to a claim for indemnification hereunder; (2) the indemnifying party being allowed to control the defense and settlement of such claim; and (3) the indemnified party cooperating with all reasonable requests of the indemnifying party (at the indemnifying party's expense) in defending or settling such claim. The indemnified party shall have the right, at its option and expense, to participate in the defense of any action, suit or proceeding relating to such a claim through a counsel of its own choosing. In the event claims, losses, damages, or expenses are caused by the joint or concurrent negligence of HAI and CLIENT, they shall be borne by each party in proportion to its negligence.

**Term:** Unless sooner terminated or extended as provided herein, this Agreement shall remain in full force and effect. Either party may terminate this Agreement at any time by giving seven (7) days written notice of such termination to the other party. Upon such termination of this Agreement, CLIENT shall pay and reimburse HAI for services rendered and costs incurred by HAI prior to the effective date of termination. The rights and obligations of the parties under this Agreement shall survive termination of this Agreement for any reason.

**Precedence:** These General Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice to proceed, or like document regarding HAI services, including, without limitation the Agreement for Services and the Proposal. The Agreement of Services shall take precedence over the Proposal.

**Fee Schedule:** Where lump sum fees have been agreed to between the parties, they shall be so designated in the Agreement attached hereto and by reference made a part hereof. Where fees are based upon hourly charges for services and costs incurred by HAI they shall be based upon the hourly fee schedule annually adopted by HAI.

**Limitation of Remedies, Liability and Damages:** CLIENT's sole and exclusive remedy in the event of a claim arising out of, resulting from or in connection with this Agreement shall be for HAI to repair, replace or otherwise correct the breach. Other than CLIENT's obligations to make payments that are due and owing under this Agreement, a party's and its affiliates' entire and collective liability arising out of or relating to this Agreement, including without limitation on account of performance or nonperformance of obligations hereunder, regardless of the form of the cause of action, whether in contract, tort (including, without limitation, negligence), statute or otherwise, shall in no event exceed the amounts paid or payable to HAI under this Agreement. NEITHER PARTY NOR ITS AFFILIATES SHALL, UNDER ANY CIRCUMSTANCES, BE LIABLE TO THE OTHER PARTY OR ITS AFFILIATES FOR ANY CLAIM BASED UPON ANY THIRD PARTY CLAIM (EXCEPT AS PROVIDED FOR IN THE INDEMNIFICATION PARAGRAPH) OR FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE, EXEMPLARY OR SPECIAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY DAMAGES ARISING OUT OF OR IN CONNECTION WITH ANY DELAYS, LOSS OF PROFIT, INTERRUPTION OF SERVICE OR LOSS OF BUSINESS OR ANTICIPATORY PROFITS, EVEN IF A PARTY OR ITS AFFILIATES HAVE BEEN APPRISED OF THE LIKELIHOOD OF SUCH DAMAGES OCCURRING.

**Insurance:** Upon written request, HAI will provide certificates of insurance to the client evidencing coverage for Worker's Compensation, General Liability, Auto Liability and Professional Liability prior to the commencement of services to be provided herein.

**Binding Nature and Assignment.** This Agreement shall be binding upon and inure solely to the benefit of the parties hereto and their successors and permitted assigns, and nothing in this Agreement shall confer upon any other person or entity any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this Agreement. Neither party may, nor shall have the power to, assign or transfer this Agreement without the prior written consent of the other party, except that HAI may without consent assign or transfer this Agreement to a successor to the business of HAI to which this Agreement relates. Any claim relating to the provision of services by HAI, its affiliates or their respective staff will be made against HAI alone.

**Approvals and Similar Actions.** Where agreement, approval, acceptance, consent or similar action by CLIENT or HAI is required under this Agreement, such action shall not be unreasonably delayed or withheld.

**Time is of the Essence.** Time is of the essence of this Agreement.





by Honeywell

# E3 Series® Control Panel

## Description

The E3 Series® Expandable Emergency Evacuation System by Gamewell-FCI is in the forefront of the latest generation of fire alarm control panels. Employing the new high-speed Velociti® sensors, the E3 Series provides previously unattainable polling speed and response together with the flexibility demanded by today's emergency evacuation systems. In addition to their high-speed polling rate, the Velociti Series of sensors feature bi-polar LEDs that flash green for normal polling, and light red steadily to indicate an alarm.

The E3 Series is equipped with an 80-character LCD-E3 alphanumeric LCD display that allows 40 characters to be user-defined for custom installations. Up to six (6), keyboard LCD displays may also be remotely located. In addition, you can install five of the familiar LCD-7100/RAN-7100 remote displays. The displays show instant system status information and can be connected in any desired area of an installation.

A high-speed 32-bit processor easily tackles a wide array of applications from small office buildings to multi-complex, high-rise installations.

The (64) node networking is made possible by 625K baud/ARCNET communications using twisted-pair copper cable, fiber-optic cable, or a combination of both. In addition, the Addressable Node Expander (ANX) board expands the network to one hundred and twenty-two (122) nodes.

The basic E3 Series is equipped with an ILI-MB-E3/ILI95-MB-E3 Intelligent Loop Interface-Main Board, ILI-S-E3/ILI95-S-E3 Intelligent Loop Interface Expansion Board, ANX, and ASM-16 Addressable Switch Module that features sixteen (16), software programmable switches, each accompanied by red, green and yellow LEDs that can be programmed to indicate operation of the switches. Additional ASM-16 modules may be added to expand the operation to a plateau previously unimagined.

The Intelligent Loop Interface - Expansion Board (ILI-S-E3/ILI95-S-E3) provides the E3 Series control panel with two (2), additional signaling line circuits. The layout is similar to the ILI-MB-E3/ILI95-MB-E3 with the exception that a number of components are omitted. It occupies one node on the Broadband network.

E3 Series® and Velociti® are registered trademarks of Honeywell International Inc.

UL® is a registered trademark of Underwriters Laboratories Inc.

## Expandable Emergency Evacuation System



E3 Series

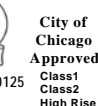
## Features

- IBC Seismic Certified
- Listed under UL® Standard 864, 9th Edition
- UL Listed for smoke control (dedicated and non-dedicated) when properly configured
- FM/UL Listed for Pre-action/Deluge use
- Styles 4, 6, or 7\* signaling line circuits
- Two to (244) SLCs each supporting 159 sensors and 159 modules
- 625K baud ARCNET communications using wire, fiber, or mixed configurations for installation flexibility
- High-speed 32 bit processor and 4100 event history log
- Advanced Boolean logic-based programming such as AND, OR, NOT, time delay and calendar functions configurable via computer programming
- Supports up to (16), ASM-16 addressable switch or ANU-48 LED driver modules per ILI-MB-E3/ILI95-MB-E3
- Two (2), Class A, Style Z or Class B, Style Y, notification appliance circuits rated at 2.0 amps. per circuit
- Integral city connection
- Flexible 115,200 baud high speed RS-232 interface
- 40 character user-defined text per device
- Supports up to five (5), LCD-7100/RAN-7100 displays and six (6), LCD-E3 keyboard displays per ILI-MB-E3/ILI95-MB-E3

\*Style 7 wiring requires the use of System Sensor M500X Isolator Modules.

## An ISO 9001-2000 Company

SIGNALING



## GAMEWELL-FCI

12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118

Specifications are for information only, are not intended for installation purposes, and are subject to change without notice. No responsibility is assumed by Gamewell-FCI for their use.

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[www.gamewell-fci.com](http://www.gamewell-fci.com)

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FY16 CIP page - 57

## Description (Continued)

Each ILI-MB-E3/ILI95-MB-E3 can support as many as sixteen (16), ANU-48 LED Driver modules supporting hundreds of LEDs on a 3rd party graphic annunciator for remote annunciation. The ANU-48 modules may be installed in any Listed remote annunciator. It can be remotely located via an RS-485 serial interface.

An array of cabinets allows for neat, compact, attractive installations.

## Installation

The E3 Series expandable emergency evacuation system offers four (4), cabinet size options. A typical cabinet includes a backbox, an inner door, and an outer door. The E3 Series cabinet assembly is a compact 19 3/8" (49 cm) wide wall-mounted enclosure.

Cabinet A includes the following four options:

- Cabinet A1 inner door mounted to the backbox. The backbox houses one NGA module.
- Cabinet A2 inner door mounted to the backbox. The backbox houses one LCD-E3 module.
- Two or three-bay inner door mounted to the backbox. The backbox typically houses one (1) LCD-E3, or one (1) NGA, and one (1) or two (2), ASM-16 modules.

Cabinet B contains a space for the ILI-MB-E3/ILI95-MB-E3, PM-9/PM-9G modules and batteries set inside the backbox. Additional module options mounted on the backbox include the DACT-E3, and RPT-E3 or ILI-S-E3/ILI95-S-E3/ANX. The 2-bay inner door houses one (1), LCD-E3 module and one (1), ASM-16 module.

Both Cabinets C and D include the following:

- Pre-assembled outer door that gives visibility to the fire fighter's phone handset and a microphone voice messaging system.
- Two inner door panel selections that may contain optional modules to meet the facility operation requirements.

In the Cabinet B, C and D backboxes, the ANX appears in the same place as the ILI-MB-E3/ILI95-MB-E3 and PM-9/PM-9G. For information on the installation instructions for any of the E3 Series cabinets, refer to the E3 Series® Expandable Emergency Evacuation Installation/Operating Manual Part Number: 9000-0574.

## Specifications

- Operating Voltage:** 24 VDC  
**Operating Temperature:** Not to exceed the range of 32° to 120° F (0 to 49° C)  
**Relative Humidity:** Not to exceed 93% non-condensing at 90° F (32° C)

## Features (Continued)

### Velociti® Intelligent Sensor Features:

- Poll 318 devices in less than two (2) seconds
- Activate up to 159 outputs in less than five (5) seconds
- LED's blink associated device address during Walk Test
- Fully digital, hi-precision protocol
- Up to 9 levels of sensitivity adjustment
- Pre-Alarm adjustable between 15 levels for both Alert and Action
- Day/night automatic sensing adjustment
- Sensitivity windows:
  - Ion .05 to 2% obscuration
  - Photo 1 to 3% obscuration
  - Laser .02 to 2% obscuration
  - MCS Acclimate2F .5 to 4%, also self-adjustable options 1 to 2%, 2 to 3%, and 3 to 4%
  - HARSH 1 to 3% obscuration
- Drift compensation
- Each Loop Card has its own integral processor providing maximum survivability on loss of any other component. SLC provides full response on loss of any other system processor
- Optional programmable switches can be configured to enable, disable or group any combination of output devices
- Integrated point or Grouped Cross Zoning allows for numerous devices installed at any location to cooperate and determine alarm condition
- Automatic detector sensitivity testing
- DIRTY and VERY DIRTY detector maintenance alerts

## Ordering Information

Part Number	Description
ILI-MB-E3	Intelligent Loop Interface-Main Board
ILI95-MB-E3	Intelligent Loop Interface-Main Board
ILI-S-E3	Intelligent Loop Interface-Expansion Board
ILI95-S-E3	Intelligent Loop Interface-Expansion Board
ANX-SR	Addressable Node Expander-Single Ring
ANX-MR-FO	Addressable Node Expander-Multi-Ring Fiber Optic
ANX-MR-UTP	Addressable Node Expander-Multi-Ring Twisted-pair
LCD-E3	LCD-E3, LCD Keypad Display
RPT-E3-FO	Network Repeater (fiber and twisted-pair)
RPT-E3-UTP	Network Repeater (twisted-pair only)
DACT-E3	Digital Alarm Communicator Transmitter
ANU-48	ANU-48 LED Driver Module
ASM-16	Addressable Switch Module
NGA	LCD Network Graphic Annunciator
PM-9	Power Supply Module
PM-9G	Power Supply Module
LCD-7100	Remote LCD Display
RAN-7100	Remote LCD Display

For additional information on the cabinets, refer to the E3 Series Cabinets data sheet (Part Number: 9020-0649).

### Seismic Battery Bracket Kits

For information on the types of Seismic Battery Bracket Kits that are available, the Seismic Battery Bracket Kit Part Numbers and the installation instructions, refer to the following documents:

- Seismic Battery Bracket Installation Guide, P/N: 53839
- E3 Series Cabinets Data Sheet, P/N: 9020-0649

### GAMEWELL-FCI

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9020-0637 Rev. M page 2 of 2

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## Description

The LCD-E3 provides the main panel display of the E3 Series® Expandable Emergency Evacuation System with indicating LEDs and operating switches. Up to six (6), LCD-E3 displays may be locally or remotely located from the panel via a local RS-485 bus of the ILI-MB-E3/ILI95-MB-E3 sub-assembly.

The LCD-E3 includes an LCD display for the system status and the following switches and LED indicators:

### Switches

- Alarm acknowledge
- Trouble acknowledge
- Signal silence
- System reset/lamp test
- Function buttons:
  - menu/back
  - back space/edit
  - OK
- 12 button keypad

### LED Indicators

- AC Power On (green)
- Alarm (red)
- Supervisory (yellow)
- System Trouble (yellow)
- Power Fault (yellow)
- Ground Fault (yellow)
- System Silenced (yellow)

## Installation

The LCD-E3 is adaptable for installation in any of the following E3 Series® System cabinets:

- “A” size cabinet, inner door (E3ID2-A)
- “A2” size cabinet, inner door (E3ID-A2)
- “B” size cabinet, inner door (E3ID2-B)
- “C” size cabinet, inner door (E3ID2-C)
- “D” size cabinet, inner door (E3ID2-D)

## Specifications

- Operating Voltage:** 24 VDC FWR  
(from PM-9 power supply)
- Operating Current:** 0.024 amp
- Alarm Current:** 0.028 amp
- Operating Temperature:** 32° to 120° F (0° to 49° C)
- Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)

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## LCD Keypad Display



LCD-E3

## Features

- Listed under UL Standard 864, 9th Edition
- Provides an 80-character display of system events together with indicating LEDs and control switches
- The ILI-MB-E3/ILI95-MB-E3 can support up to six (6), LCD-E3 displays, any or all of which may be remotely located via the RS-485 serial interface
- Easy to read backlit LED display, low power consumption

## Ordering Information

Model	Description
LCD-E3	LCD keypad display

### An ISO 9001-2000 Company



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## Description

The ASM-16 Addressable Switch Module is a component of NetSOLO<sup>®</sup> and E3 Series<sup>®</sup> fire alarm and voice evacuation systems. It serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building control circuits.

The ASM-16 is a configurable switch input sub-assembly with sixteen (16), switches and forty-eight (48), status LEDs and may be remotely located via the RS-485 serial interface. Each ASM-16 addressable switch module has sixteen (16), push-button switches that can be programmed to serve any function the application demands.

An ASM-16 switch can be programmed as a speaker circuit switch, fire fighter phone switch, an auxiliary control switch using a bank of two (2), switches (one switch each for on-off-auto functions), or switches with custom defined functions (e.g. system reset, system silence, system acknowledge, all-call, phone patch, lamp test, alarm tone on, manual select, etc.).

Each ASM-16 switch also has three (3), fully programmable LEDs in red, yellow, and green. These LEDs can be programmed to work in concert with their associated push-button switch or they can be made to work independently as status indicators (e.g. on, off, normal, etc.).

An INI-VGC assembly or ILI-MB-E3/ILI95-MB-E3 can accommodate up to sixteen (16), ASM-16 modules for a total of 256 switches and 768 LEDs.

## Specifications

**Operating Voltage:** 24 VDC (nominal)  
(from the PM-9/PM-9G power supply)

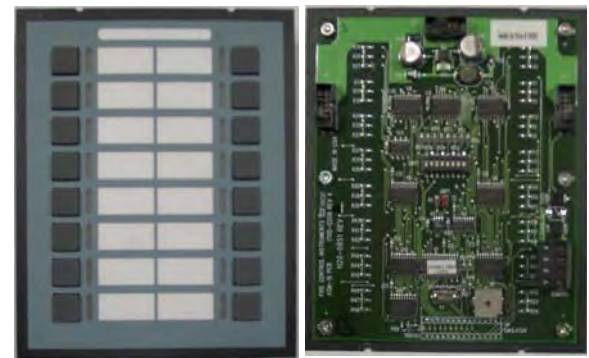
**Operating Current:** 0.011 amp. (with no LEDs lit)

**Operating Temperature:** 32° to 120° F (0° to 49° C)

**Relative Humidity:** 0 to 93% (non-condensing)  
at 90° F (32° C)

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## ASM-16 Addressable Switch Module



Front View

Rear View

## Features

- Listed under UL<sup>®</sup> Standard 864, 9th Edition
- Each INI-VGC supports up to sixteen (16), ASM-16 switch modules for a total of 256 switches
- Each ILI-MB-E3/ILI95-MB-E3 supports up to sixteen (16), ASM-16 switch modules for a total of 256 switches
- Each ASM-16 switch has three (3), fully programmable status, indicating LEDs: red, yellow, and green
- All switch functions are fully software programmable
- Slip-in label inserts allow easily modified switch designations

## Ordering Information

Part Number	Description
ASM-16	Programmable switch module

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SIGNALING



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Class 1  
Class 2  
High Rise

City of Denver Approved

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# INCC-MIC

## Description

The INCC-MIC Paging Microphone Module is a component of the NetSOLO® and E3 Series® fire alarm and voice evacuation systems.

The INCC-MIC microphone provides a cost-effective microphone interface module for paging. Installed with the ASM-16 Addressable Switch Module, it provides easy paging to selected speaker zones with visual indications of paging and zone status.

## Installation

The INCC-MIC Paging Microphone Module can be installed in any of the following types of E3 Series cabinets:

- Cabinet AA
- Cabinet B
- Cabinet C
- Cabinet D

## Specifications

<b>INCC-MIC Microphone Box</b>	Paging Microphone Module Durable gauge steel construction with microphone holder
<b>Dimensions:</b>	5.5" W x 6.5" H x 2.75" D (14 W x 16.5 H x 7 D cm)

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Shure® is a registered trademark of Shure Incorporated.

## Paging Microphone Module



INCC-MIC

## Features

- Audio feedback cancellation
- Supervised microphone
- Status bit activation when the microphone is in use
- Easy installation
- Includes a preassembled microphone box with a microphone holder
- Contains a terminal block with an easy-to-use plug-in cable

## Ordering Information

Part Number	Description
1100-0452	Paging Microphone Module

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## Description

The PM-9 Power Supply is a component of NetSOLO® and E3 Series® fire alarm and voice evacuation systems. It provides power to the INX Transponder assembly and all E3 Series components.

The PM-9 is a switching power supply that provides 9 amperes of filtered and regulated 24 VDC (nominal). It has an internal battery charging circuit capable of maintaining up to fifty-five (55), A/H batteries. This module is designed for use with the Gamewell-FCI distributed audio networks.

### Installation

Typically, the PM-9 Module can be mounted in the following E3 Series cabinets:

- Cabinet B and D, backbox
- Cabinet C, INX-E3 sub-assembly plate
- Cabinet C, INCC-E3 sub-assembly plate
- Cabinet D, E3-INX-D Plate
- Cabinet D, E3-ILI-D Plate

For instructions on installing the PM-9, refer to the E3 Series® Expandable Emergency Evacuation Installation/ Operating Manual, Part Number: 9020-0574 or the PM-9 Installation Instructions, Part Number: 9000-0548.

## Specifications

<b>Input Voltage:</b>	120 VAC 60 Hz @ 3.5 A. max.
<b>Output Voltage:</b>	24 VDC (nominal) FWR
<b>Output Current:</b>	9 amperes
<b>Output Current:</b>	1 ampere battery charging current
<b>Alarm Current:</b>	0.050 amp
<b>Operating Temperature:</b>	32° to 120° F (0° to 49° C)
<b>Relative Humidity:</b>	0 to 93% (non-condensing) at 90° F (32° C)
<b>Dimensions:</b>	10 1/2" W x 5" H x 2" D (27 x 13 x 5 cm)

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## PM-9 Power Supply



PM-9

## Features

- Listed under UL® Standard 864, 9th Edition
- Includes 9 ampere, filtered, regulated power supply
- Provides 1 ampere battery charging current
- Offers energy and space saving switching technology
- Contains an integral battery charger capable of recharging up to fifty-five (55), AH batteries (Batteries not furnished)

## Ordering Information

Part Number	Description
<b>PM-9</b>	Power supply
<b>29229</b>	AC Line Filter Kit

An ISO 9001-2000 Company



City of DENVER Approved  
Class 1  
Class 2  
High Rise

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# ILI95-E3 Series

## Description

### ILI95-MB-E3

The Intelligent Loop Interface-Main Board (ILI95-MB-E3) is the main interface for the E3 Series® product line. With its state-of-the-art 32 bit RISC processor, this compact “panel on a board” provides a powerful addition to Gamewell-FCI’s single pair conductor solutions. This intuitive design provides two (2), signaling line circuits, two (2), notification appliance circuits, local energy city box output, auxiliary relay functions, and auxiliary power output. These features, combined with built-in network and serial protocols, allow this module to support a host of new and existing products, resulting in a building block approach to fire alarm panel design.

The ILI95-MB-E3 is network ready and occupies sixty-four (64) nodes, operating at 625K baud. In addition, the Addressable Node Expander (ANX) board expands the network to one hundred and twenty-two (122) nodes. When this sub-assembly is integrated with proven Broadband components, the result is a flexible yet powerful integrated audio solution. When transmitting to remote locations, the optional RPT-E3 provides the ILI95-MB-E3 with valuable signal boosting and transient protection, as well as connectivity using both wire and fiber-optic cables.

The ILI95-MB-E3 provides two (2), signaling line circuits and terminals for the connections to up to (126) Apollo detectors and modules per SLC. The RS-485 interface can support up to a total of six (6) LCD-E3 and sixteen (16), ASM-16 and/or sixteen (16), ANU-48 remote LED driver modules.

The ILI95-MB-E3 relay outputs include system alarm, supervisory, and system trouble contacts. The ILI95-MB-E3 provides output for a local energy city master box or remote location which is non power-limited. All other wiring is power-limited.

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## Intelligent Loop Interface-Main Board



ILI95-MB-E3

## Features

### ILI95-MB-E3 and ILI95-S-E3:

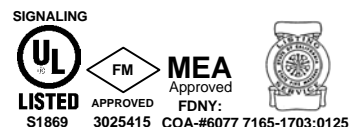
- Listed under UL® Standard 864, 9th Edition
- Network ready integral 625K baud ARCNET
- 115.2K baud RS-232
- Signaling line circuits with:
  - Two (2), Class A, Style 6, 7\* or Class B, Style 4 circuits
  - 40 Character user-defined text per device
  - Capacity of 126 analog/addressable devices per loop
- 4100 event history log

\*Style 7 wiring requires the use of XP95-LI Isolator Modules.

### ILI95-MB-E3 Only:

- Two (2), notification appliance circuits, Class “A”, Style Z or Class B, Style Y rated at 2.0 amps. per circuit
- RS-485 supporting sixteen (16), ASM-16 switch modules and/or ANU-48 LED driver modules
- Alarm, trouble, and supervisory dry contacts Form “C”, rated at 2 amp. @ 30 VDC (resistive)
- Supports six (6), local/remote LCD-E3 annunciators and five (5), LCD-7100/RAN-7100 remote LED annunciators

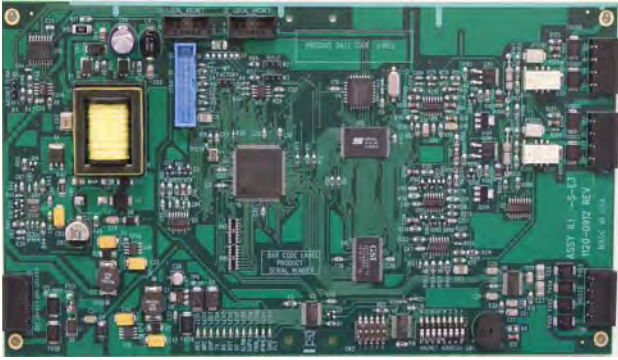
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ILI95-S-E3

### ILI95-S-E3

The Intelligent Loop Interface - Expansion Board (ILI95-S-E3) provides the E3 Series control panel with two (2), additional signaling line circuits. The layout is similar to the ILI95-MB-E3 except a number of components are omitted. The ILI95-S-E3 occupies one node on the Broadband network. The ILI95-S-E3 provides two (2), signaling line circuits and terminals for the connections to up to 126 sensors / modules.

### Installation

Typically, the ILI95-MB-E3 or ILI95-S-E3 can be mounted in the following E3 Series cabinets:

- Cabinet B and D, backbox
- Cabinet B, B-Slim-E3 sub-assembly plate
- Cabinet C, E3-ILI-C sub-assembly plate
- Cabinet C, E3-INCC-C sub-assembly plate
- Cabinet C, E3-INX-C sub-assembly plate
- Cabinet D, E3-INCC-D sub-assembly plate
- Cabinet D, E3-INX-D sub-assembly plate

For installation instructions on the ILI95-MB-E3 or ILI95-S-E3, refer to the following documents:

- E3 Series® Expandable Emergency Evacuation Installation/Operation Manual, Part Number: 9000-0574
- ILI95-MB-E3 Installation Instructions, Part Number: 9001-0017
- ILI95-S-E3 Installation Instructions, Part Number: 9001-0018

For information on the ANX, refer to the Data Sheet Part Number: 9021-60497.

For additional information on the ILI-MB-E3 or ILI-S-E3, refer to the following document:

- ILI-E3 Series Data Sheet, Part Number: 9020-0605

## Specifications

### ILI95-MB-E3

**Operating Current:** 0.050 amp  
**Alarm Current:** 0.091 amp max.

### ILI95-S-E3

**Operating Current:** 0.109 amp  
**Alarm Current:** 0.11 amp

### ILI95-MB-E3 and ILI95-S-E3

**Operating Voltage:** 24 VDC FWR (from the PM-9/PM-9G Power Supply)

**Operating Temperature:** 32° to 120° F (0° to 49° C)

**Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)

### Supervised

#### Power-limited

SLC 40 Ohms maximum line impedance.  
 0.5 µf maximum line capacitance.

## Ordering Information

### Part Number Description

**ILI95-MB-E3** Intelligent Loop Interface-Main Board  
**ILI95-S-E3** Intelligent Loop Interface-Expansion Board

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 9021-60336 Rev. H page 2 of 2 [www.gamewell-fci.com](http://www.gamewell-fci.com)



## Description

The INI-VG Series (Intelligent Network Interface-Voice Gateway) is an audio network interface that provides the connection for the remote microphone, fire fighter telephone, one signaling line circuit. In addition, it supports the connection for one NGA, and includes the following sub-assemblies:

- INI-VGC
- INI-VGE
- INI-VGX

The INI-VG Series is used in the following E3 Series Systems.

- E3 Series® Expandable Emergency Evacuation System
- E3 Series Combined Fire and Mass Notification System
- E3 Broadband Audio Evacuation System

### INI-VGC

The INI-VGC Voice Gateway Module provides command and control functions for the INCC Command Center. The INCC serves as the point of interface between an operator and the system's audio evacuation, fire fighter intercom, and building control circuits.

A typical INCC assembly consists of an Intelligent Network Interface-Voice Gateway (INI-VGC) Module and one or more Addressable Switch Modules (ASM-16). Each INI-VGC can support up to 16 ANU-48 LED Driver Modules or ASM-16s for a total of 256 fully programmable switches and 768 LEDs (red, yellow, and green).

The INI-VGC occupies a single node on the E3 Broadband network and it is connected by a single pair of twisted, unshielded wire, fiber-optic cable or any combination of the two. The INI-VGC-UTP is not equipped with fiber-optic connectors. The INCC Command Center's INI-VGC module also provides connections for an optional emergency voice page microphone and a fire fighter telephone handset.

The INI-VGC is a fully digital voice/tone generator using state-of-the-art Digital Signal Processing (DSP) technology to produce the clearest, most audible signal possible. The INI-VGC provides an output to a local speaker for message verification and testing.

The E3 Broadband Audio Evacuation System is a peer-to-peer, self regenerating, token ring network comprised of up to 64 individual nodes. In addition, the Addressable Node Expander (ANX) board expands the network to 122 nodes. Each E3 Broadband node can be spaced on the network at a maximum distance of 3,000 feet (914.4 m) or up to an 8dB loss using fiber-optic cable. Built-in isolation at each node supports Style 4, 6, and 7 network configurations.

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## INI-VG Series Command Center Voice Gateway



INI-VG Series

## Features

The INI-VG Series include the following features:

- Listed under UL® Standard 864, 9th Edition
- Listed under UL Standard UL2572 for Mass Notification
- All communication signals and control-by-event sequences over twisted, unshielded pair of wires or fiber-optic cable
- Distributed architecture, including Style 7 wiring configuration, allows system components to continue normal operation with NO loss of function during single line fault conditions
- Each INI-VGC or INI-VGE supports up to six ANU-48 LED drivers or ASM-16 switch modules for a total of 256 switches
- INI-VGC connects to a voice page microphone and fire fighter's handset
- Redundant command centers with microphone and fire fighter's handset easily configured by adding INCCs
- Uses advanced digital signal processor (DSP) technology for efficient audio compression and filtering
- Network data transfer rate at 625K baud
- The INI-VGX includes the following features:
  - Software-programmable multi-channel digital audio applications
  - One Style 4 Signaling Line Circuit (SLC) supporting up to 32 addressable speaker circuits
  - AOM-2SF used for single channel and 16 addressable phone circuits (AOM-TELF)
  - Supports up to 150 watts of audio power (using the AM-50 Series amplifiers operating at 50 watts of power @ either 25V<sub>RMS</sub> or 70.7V<sub>RMS</sub> output) installed in a single, wall-mounted cabinet
  - 16 message capacity with up to 3 minute duration per INX and messages are easily field-configured via a laptop computer

SIGNALING



LISTED  
S1869



APPROVED  
3006578



Approved  
FDNY:  
COA-#6077



City of  
Chicago  
Approved  
Class1  
Class2  
High Rise

City of  
DENVER  
Approved

7165-1703-0125

## Description (Continued)

### INI-VGE

The INI-VGE Voice Gateway Module provides command and control functions for the INCC Command Center. It provides bulk amplification. A typical INCC assembly consists of an Intelligent Network Interface-Voice Gateway (INI-VGE) Module and one or more Addressable Switch Modules (ASM-16). Each INI-VGE can support up to six ASM-16s for a total of 96 fully programmable switches and 288 LEDs (red, yellow, and green).

The INI-VGE occupies a single node on the E3 Classic network and is connected by a single pair of twisted, unshielded wire, fiber-optic cable or any combination of the two. The INI-VGE-UTP is not equipped with the fiber-optic connectors. The INCC Command Center's INI-VGE Module also provides connections for an optional emergency voice paging microphone as well as a fire fighter telephone handset.

The INI-VGE is a fully digital voice/tone generator using state-of-the-art Digital Signal Processing (DSP) technology to produce the clearest, most audible signal possible. The INI-VGE provides an output capable of driving up to 20 Model AA-100 or AA-120 amplifiers.

### INI-VGX

The INI-VGX Transponder Voice Gateway is a component of the E3 Broadband Audio Evacuation System and an optional component of the E3 Series Expandable Emergency Evacuation System. It is a multi-function module that incorporates:

- Network interface using twisted, unshielded wire or fiber-optic cable
- Fully digital message generator
- One signaling line circuit for local peripheral devices
- Local fire fighter phone riser

It occupies a single DIP switch selectable address on the network and provides termination points for the network connection using either a pair of twisted, non-shielded wire (12 AWG max.) fiber-optic cable, or a combination of the two. The INI-VGX-UTP is not equipped with fiber-optic connectors.

The INI-VGX provides command and control for up to four AM-50 Series amplifiers, operating at 50 watts of power @ either 25V<sub>RMS</sub> or 70.7V<sub>RMS</sub> audio output. The amplifiers are installed in a single cabinet. The INI-VGX uses advanced Digital Signal Processing (DSP) technology for audio compression and filtering. This feature allows the E3 Broadband System to produce superior clarity for intelligible LIVE voice paging. The background noise is automatically filtered during voice paging and fire fighter communications which increases the audibility and eliminates the need for Push-to-Talk devices.

## Specifications

### INI-VGC, INI-VGE and INI-VGX

**Operating Voltage:** 24 VDC (nominal) from the PM-9/PM-9G Power Supply

**Operating Current:** 0.150 amp. supervisory and alarm

#### Operating

**Temperature:** 32° to 120° F (0 to 49° C)

**Relative Humidity:** 0 to 93% (non-condensing)

#### Supervised

#### Class 2 Power-Limited

**Protocol:** Asynchronous with half-duplex data flow

**Speed:** RS-232 up to 64 KBps  
RS-485 up to 128 KBps

### Wiring Specifications

#### (INI-VG Series & INI-VG-UTP Series):

**Copper Wire:** 16 to 18 AWG twisted-pair, unshielded. Up to 3,000 ft. (914.4 m) between each node.

**Fiber-Optic Cable (INI-VG Series):** Up to 200 microns (optimized for 62.5/125 microns). Up to 8 dB loss between each node.

## Ordering Information

Part Number	Description
<b>INI-VG Series:</b>	
<b>INI-VGC</b>	Command center voice gateway
<b>INI-VGC-UTP</b>	Command center—(unshielded twisted-pair only)
<b>INI-VGE</b>	
<b>INI-VGE</b>	Command center classic voice gateway
<b>INI-VGE-UTP</b>	Command center (unshielded twisted-pair only)
<b>INI-VGX</b>	
<b>INI-VGX</b>	Transponder voice gateway
<b>INI-VGX-UTP</b>	Transponder voice gateway (unshielded twisted-pair)

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## Description

The Gamewell-FCI, INX Intelligent Network Transponder serves as the point of distribution for the system's audio and fire fighter telephone risers. It is a component of the following systems.

- E3 Series® Expandable Emergency Evacuation System
- E3 Series Combined Fire and Mass Notification System
- E3 Series Broadband Audio Evacuation System

The INX occupies a single node on the E3 Broadband network and is connected by a single pair of unshielded, twisted wires, fiber-optic cable or any combination of the two. Each E3 Broadband node can be spaced on the network up to a maximum distance of 3,000 feet (914.4 m) or up to an 8 dB loss using a fiber-optic cable. Built-in isolation at each node permits Style 4, Style 6, and Style 7 network configurations.

The E3 Broadband Audio Evacuation System is a peer-to-peer, self-regenerating, token ring network comprised of up to 64 individual nodes. In addition, the Addressable Node Expander (ANX) board expands the network to 122 nodes.

The E3 Broadband employs proven technology and extends it to accomplish emergency voice evacuation, 2-way fire fighter communications, and building control applications. It is unique in the industry since it requires only a single pair of wires or fiber-optic cable connections between nodes to convey all fire alarm, digital voice, fire fighter communications, paging, and building control signals. This system provides a 16 message capacity with up to a 3 minute duration per INX. Messages are easily field-configurable with a laptop computer

A typical INX assembly consists of the following:

- an Intelligent Network Interface-Voice Gateway (INI-VGX) module
- a PM-9/PM-9G power supply
- up to 4 AM-50 Series amplifiers including a minimum of one backup amplifier

It is enclosed in a compact 19" enclosure capable of accommodating up to 12 A/H size batteries. The modular approach of the E3 Broadband greatly simplifies the design and the installation and allows the complete flexibility in retrofit or add-on situations. This system is ideal for a wide range of complex system applications including high-rise or campus installations.

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## Intelligent Network Transponder



INX

## Features

- IBC Seismic Certified
- Listed under UL® Standard 864, 9th Edition.
- Listed under UL Standard UL2572 for Mass Notification.
- Offers all communication signals and control-by-event sequences over two wires or fiber-optic cable including: audio evacuation, voice paging, fire fighter intercom, and building control signals.
- Integrates with INCC command centers and additional INX transponders to create a complete audio evacuation system with up to 122 nodes.
- Distributed architecture, including Style 7 wiring configurations, allow system components to continue normal operation with NO loss of function during single line fault conditions.
- Uses state-of-the-art digital signal processor (DSP) technology for efficient audio compression and filtering.
- Software-programmable multi-channel digital audio applications.
- One Style 4 signaling line circuit (SLC) supporting up to 32 addressable speaker circuits (AOM-2SF used for single channel circuits and 16 addressable phones circuits AOM-TELF).
- Up to 150 watts of audio power provided by the AM-50 Series amplifiers with an 50 watts of standby amplifier enclosed in a single, compact wall-mounted cabinet.
- Each AM-50 Series amplifier provides two individually activated speaker circuits supplying 50 watts total.

SIGNALING



ME A  
 Approved  
 FDNY:



7165-1703:0125 - Class 1  
 7170-1703:0126 - Class 2  
 - High Rise



THE VMC GROUP  
 Reference Certificate  
 of Compliance  
 VMA-45894-02C  
 (Revision 1)

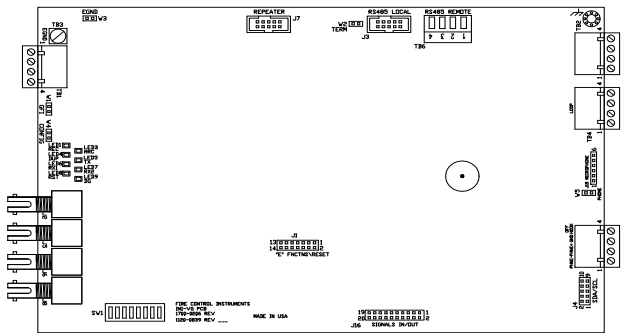


Figure 1 INI-VGX

**INI-VGX**

The INI-VGX is a multi-function module which incorporates the following:

- Network interface using twisted, unshielded wire or fiber-optic cable.
- Fully digital message generator.
- One signaling line circuit for local peripheral devices.
- Local fire fighter phone riser.

It occupies a single DIP switch selectable address on the network and provides termination points for the network connection using either a pair of twisted, non-shielded wire (12 AWG max.) or fiber-optic cable.

The INI-VGX uses advanced Digital Signal Processing (DSP) technology for audio compression and filtering allowing E3 Broadband to produce the clearest audio possible. Background noise is automatically filtered during voice paging and fire fighter communications which increase audibility and eliminates the need for the Push-to-Talk devices.

The INI-VGX can accommodate up to 16 different messages with a total combined duration of three minutes. Each message can be field installed via a laptop computer and the messages can be in the form of a voice message or an evacuation tone. The INI-VGX provides a fire fighter phone riser that would connect to phone jacks or warden stations through AOM-TELF modules.

The INI-VGX provides one Signaling Line Circuit (SLC) to control and supervise Addressable Output Modules (AOM) serving as speaker circuits and fire fighter telephone circuits. The INI-VGX SLC can support up to 32 speaker circuits using the AOM-2SF for single channel applications. In addition, each INI-VGX SLC can support up to 16 fire fighter intercom circuits using the AOM-TELF.

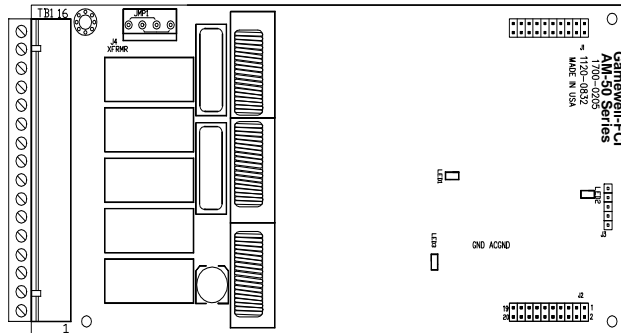


Figure 2 AM-50 Series Amplifiers

**AM-50 Series Amplifiers**

The AM-50 Series amplifiers offer 2 types of AM-50 Series amplifiers:

- AM-50-25 amplifier produces a 25V<sub>RMS</sub> audio output
- AM-50-70 amplifier produces a 70.7V<sub>RMS</sub> audio output

The AM-50 Series amplifiers are a component of the following systems.

- E3 Series, Expandable Emergency Evacuation System
- E3 Series Combined Fire and Mass Notification System
- E3 Broadband Audio Evacuation System

Both AM-50 Series amplifiers produce 50 watt, digital, switching power. As many as four AM-50 Series amplifier modules can be installed in each INX CAB-B cabinet and are supervised and controlled by an INI-VGX Voice Gateway.

Each AM-50 Series amplifier provides two speaker circuits that can be wired Style Y (Class "B") or Style Z (Class "A"). The terminal connections can accommodate up to 12 AWG, twisted-pair, shielded wire. Both speaker circuits can produce a combined 50 watt power that can be divided between the two integral Class A/B speaker circuits. The 2 speaker circuits may be individually activated and supervised by an INI-VGX Voice Gateway.

The AM-50 Series amplifiers may be installed in an INX CAB-B cabinet or an INCC command center using the expander plates whenever the E3 control panel is used in conjunction with the E3 Series<sup>®</sup>, Expandable Emergency Evacuation System.

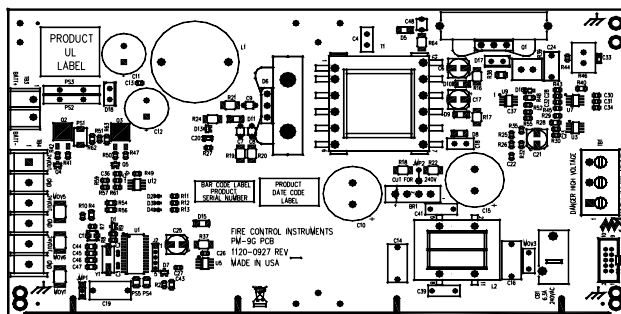


Figure 3 PM-9

**PM-9**

The PM-9 is a switching power supply that provides 9 amps of filtered and regulated 24 VDC (nominal) to power the INX transponder. It has an internal battery charging circuit capable of accommodating up to 55 A/H batteries as well as an auxiliary continuous duty 24 VDC output @ 5 amps max.

**GAMEWELL-FCI**

12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118

## Description (Continued)

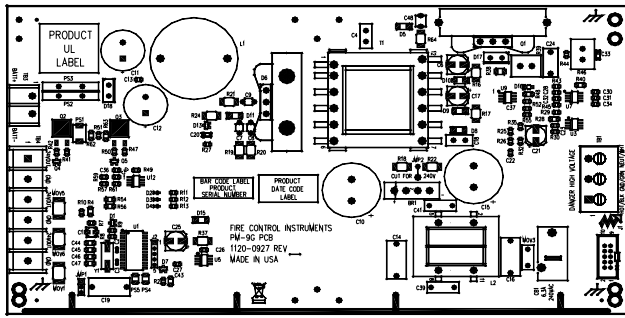


Figure 4 PM-9G

### PM-9G

The PM-9G is a switching power supply that provides 9 amps of filtered and regulated 24 VDC (nominal) to power the INX transponder. It has an internal battery charging circuit capable of accommodating up to 55 A/H batteries as well as an auxiliary continuous duty 24 VDC output @ 5 amps max.

## Specifications

### Description

#### PM-9G

**Input Voltage:** 240 VAC @ 50/60 Hz  
**Input Current:** 2.4 amps max. @ 240 VAC, 50/60 Hz  
**Output Voltage:** 24 VDC FWR  
**Output Current:** 9 amperes Alarm max. continuous  
**Output Current:** 5 amperes max. continuous Standby (when the PM-9G is used with the ILI-E3 or the ILI95-E3 Series, see Note 1).  
**Output Current:** 4 amperes max. continuous Standby (when the PM-9G is used with any AM-50 Series amplifier, see Note 2).

#### Operating

**Temperature:** 32° to 120° F (0° to 49° C)  
**Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)  
**Supervised**

#### Non Power-Limited:

**Note 1:** Continuous standby loads in excess of .560 Amps up to 5 Amps may require a Generator Backup or load shedding during an AC power failure.

**Note 2:** Continuous standby loads in excess of .560 Amps up to 4 Amps may require a Generator Backup or load shedding during an AC power failure.

#### PM-9

**Input Voltage:** 120 VAC, 60 Hz  
**Input Current:** 4.6 amps max. @ 120 VAC 60 Hz  
**Output Voltage:** 24 VDC FWR  
**Output Current:** 9 amperes Alarm max. continuous  
**Output Current:** 5 amperes max. continuous Standby (when the PM-9 is used with the ILI-E3 or the ILI95-E3 Series, see Note 1).

## Specifications (Continued)

### PM-9 (Continued)

**Output Current:** 5 amperes max. continuous Standby (when the PM-9 is used with any AM-50 Series amplifier) (See Note 2)

#### Operating

**Temperature:** 32° to 120° F (0° to 49° C)  
**Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)  
**Supervised**

#### Non Power-Limited

**Note 1:** Continuous standby loads in excess of .560 Amps up to 5 Amps may require a Generator Backup or load shedding during an AC power failure.

**Note 2:** Continuous standby loads in excess of .560 Amps up to 4 Amps may require a Generator Backup or load shedding during an AC power failure.

## Ordering Information

Part Number	Description
INX	Intelligent Network Transponder, (Distributed Voice Network Sub-Assembly Enclosure)
INI-VGX	Transponder Voice Gateway
PM-9	INX 9 ampere Power Supply
PM-9G	INX 9 ampere Power Supply
<b>AM-50 Series:</b>	
AM-50-25	INX 50 watt 25 V <sub>RMS</sub> audio amplifier
AM-50-70	INX 50 watt 70.7 V <sub>RMS</sub> audio amplifier
<b>Cabinets:</b>	
INX-CAB	Backbox with Black Door
<b>Dimensions:</b>	INX 19" W x 19" H x 4" D (48 x 48 x 10 cm)
INX-CABR	Backbox with Red Door
<b>Dimensions:</b>	INX 19" W x 19" H x 4" D (48 x 48 x 10 cm)
INX-CAB-B	Backbox with louvered door and INX-CAB-B Mounting Plate
<b>Dimensions:</b>	19 3/8" W x 19 3/8" H x 4.5" D (49 x 49 x 11 cm)

## Seismic Battery Bracket Kits

Part Number	Description
90518	NetSOLO NS-INX 7 A/H Seismic Battery Bracket Kit
90519	E3 CAB-C (INX only) 12 A/H Seismic Battery Bracket Kit E3 CAB-D (INX only) 12 A/H Seismic Battery Bracket Kit NetSOLO NS-INX 12 A/H Seismic Battery Bracket Kit

For additional information on the Seismic Battery Brackets, refer to the following documents:

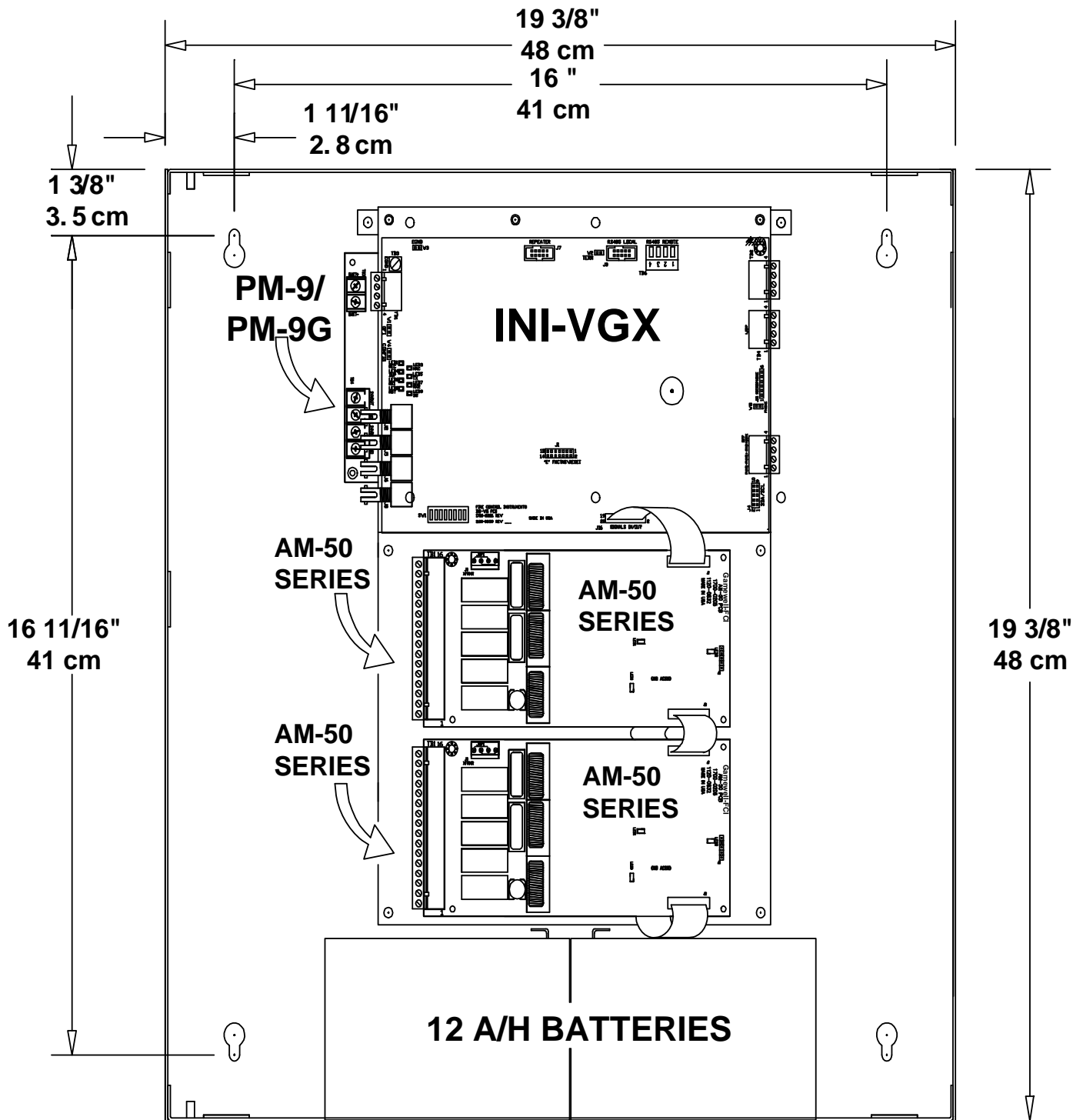
- Seismic Battery Bracket Installation Guide, P/N: 53839
- E3 Series Cabinets Data Sheet, P/N: 9020-0649

### GAMEWELL-FCI

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[www.gamewell-fci.com](http://www.gamewell-fci.com)

9020-0541 Rev. M page 3 of 4



**Figure 5 INX Dimensions**

by Honeywell

## Description

The ARCNET Repeater Module (RPT-E3) is an optional component of the E3 Series® Expandable Emergency Evacuation System. It allows the following remotable, E3 Series sub-assemblies to connect to the Broadband network from remote locations:

- ILI-MB-E3/ILI95-MB-E3
- ANX-SR/ANX-MR-UTP/ANX-MR-FO
- NGA

The RPT-E3 is available for use in two versions:

- RPT-E3-FO
- RPT-E3-UTP

The RPT-E3-UTP connects to the network using unshielded, twisted-pair, copper wire only.

## Installation

The RPT-E3 is adaptable for an installation in the standard E3 Series System cabinets. Typically, the RPT-E3 module is mounted on standoffs on top of the right side of the ILI-MB-E3/ILI95-MB-E3/ANX modules. The units can be easily connected to the backbox or the sub-assembly plate depending on the cabinet model.

For instructions on installing the RPT-E3, refer to the E3 Series® Expandable Emergency Evacuation Installation/Operation Manual, Part Number: 9000-0574 or the RPT-E3 Installation Instructions, Part Number: 9000-0580.

## Specifications

**Operating Voltage:** 24 VDC FWR (from the PM-9/PM-9G power supply)

**Operating Current:** 0.013 amp

**Operating Temperature:** 32° to 120° F (0° to 49° C)

**Relative Humidity:** 0 to 93%, non-condensing at 90° F (32° C)

### Wiring Specifications:

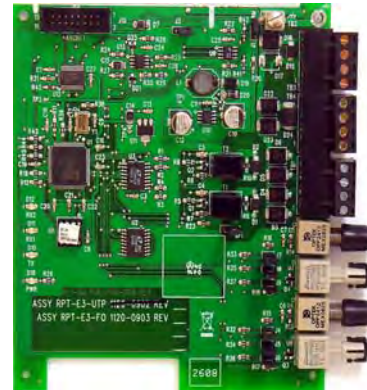
**Copper Wire:** 16 to 18 AWG twisted-pair, unshielded. Up to 3,000 ft. (914.4 m) between each node.

**Fiber-Optic Cable:** Up to 200 microns (optimized for 62.5/125 microns). Up to 8 dB loss between each node.

E3 Series® and NetSOLO® are registered trademarks of Honeywell International Inc.

UL® is a registered trademark of Underwriters Laboratories Inc.

## Network Repeater



RPT-E3

## Features

- Listed under UL® Standard 864, 9th Edition
- Provides the capability for remotable E3 Series sub-assemblies to connect in Styles 4 or 7 configurations
- “FO” option allows either fiber-optic cable or copper, unshielded, twisted-pair wire
- “UTP” option available for unshielded, twisted-pair copper wire only
- 625K baud ARCNET Repeater

## Ordering Information

Part Number Description

**RPT-E3-UTP** Network Repeaters, unshielded, twisted-pair

**RPT-E3-FO** Network Repeater, fiber-optic

An ISO 9001-2000 Company

SIGNALING



### GAMEWELL-FCI

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Specifications are for information only, are not intended for installation purposes, and are subject to change without notice. No responsibility is assumed by Gamewell-FCI for their use.

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[www.gamewell-fci.com](http://www.gamewell-fci.com)

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FY16 CIP page - 71



P.O. Box 770  
 131 Lafayette Rd.  
 No. Hampton, NH 03862

# QUOTATION

Date Wednesday, April 02, 2014

To Kevin Rossley

FOR INFORMATION CONCERNING THIS QUOTATION  
 PLEASE CONTACT SALES OFFICE

NE Toll Free 1-800-258-7264  
 FAX (603) 964-8885

We are pleased to quote you on our products as follows:

For Lincoln-Sudbury Regional School  
 390 Lincoln Road  
 Sudbury, MA 01776

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1	1	Lobby - GW-FCI panel w/ Mic & Bypass Control		
2	1	Node 1 - GW-FCI panel w/ Amps, Spkr Cntrl		
3	1	Node 2 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
4	1	Node 3 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
5	1	Node 4 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
6	1	Node 5 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
7	1	Node 5 INX - GW-FCI - panel w/ Amps, Spkr Cntrl		
8	1	Node 6 - GW-FCI - panel w/ 2 SLC, LCD		
9	1	Node 7 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
10	1	Node 8 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
11	1	Node 9 - GW-FCI - panel w/ 2 SLC, LCD, Amps, Spkr Cntrl		
12	1	Node 10 - GW-FCI - panel w/ 2 SLC, LCD		
13	LOT	Replace existing Fire Alarm Network wiring with GW-FCI approved and compatible wiring.		
14	LOT	Remove and replace existing Fire Alarm system with new Gamewell-FCI fully addressable audio system. All field alarm and indicating devices are to remain. New system is 100% compatible with existing devices.		
15	LOT	Technical Installation, Programming, Pre-Testing, Fire Dept Testing, NFPA Documents and Warranty.		
<p><b>* Does not include shipping or taxes if applicable *</b></p>				
			<b>TOTAL</b>	<b>\$83,000.00</b>

Shipping estimate

Terms: Net 30 days, subject to credit approval.  
 Unless otherwise stated, applicable and local taxes are not included.

**WE BELIEVE QUANTITIES SHOWN IN THIS ESTIMATE ARE CORRECT. IN THE INTEREST OF COMPLETE ACCURACY PLEASE CHECK AGAINST YOUR OWN TAKE-OFF AND NOTIFY US OF ANY DISCREPANCY BEFORE BIDDING SO WE CAN REVISE OUR QUOTE TO YOU.**



Note: The conditions of sale printed on the reverse side of this form constitute a part of this quotation.

**R. B. ALLEN CO., INC.**  
 By: Tony DiFranco





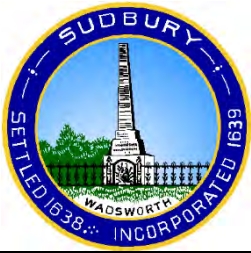
**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Planning & Community Development

**Item/Project Name:**  
Purchase of Property – 189 Landham Road  
Assessor Map L10-0500

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$3,700,000	<b>Estimated Future Savings:</b> NA
<b>Estimated Incremental Costs:</b> NA	<b>Staffing Changes:</b> NA	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 1
<b>Project Description:</b> Request \$3,700,000 for the purchase of 189 Landham Road for open space purposes.		
<b>Justification and Need:</b> The 2007 Open Space and Recreation Plan identified this property as important as it: will permanently protect wildlife habitat, including areas of local significance for biodiversity; contains a variety of habitats, with a diversity of geologic features and types of vegetation; contains a habitat type that is in danger of vanishing from Sudbury; preserves habitat for threatened or endangered species of plants or animals; preserves Sudbury's rural and agricultural character; and is adjacent to over 150 acres of permanently protected open space.		
<b>Benefit:</b> Acquiring the property will add 35+ acres of open space to over 150 acres of already preserved land, creating a significant wildlife habitat. Prohibiting development also decreases the need for educational and municipal services on this parcel in perpetuity.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> NA	<b>Typical Replacement Cycle:</b> NA	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Development of the land into 60-68 units of rental housing is the alternative to preservation.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> If the parcel is not purchased by the Town, it will be developed into high density housing.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Map of parcel attached		





**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Planning and Community development

**Item/Project Name:**  
Purchase of Property – 36 North Road  
Assessor Map C12-0003

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$457,100 (assessed value)	<b>Estimated Future Savings:</b> None
<b>Estimated Incremental Costs:</b> Costs for demolition of structures and removal of junk unknown, but could be in the \$50,000 range	<b>Staffing Changes:</b>	
<b>Justification Code:</b> D	<b>R or NR:</b> NR	<b>Priority:</b> 2
<b>Project Description:</b> Purchase of 36 North Road for redevelopment in conjunction with the Melone gravel pit. Acquiring this 1 acre parcel of land would facilitate redevelopment of the Melone property and increase opportunities for integrated development and access to the abutting town-owned parcel.		
<b>Justification and Need:</b> The long term redevelopment plan for the Melone property has not yet been formulated, however acquiring this parcel in advance of any definitive plans is necessary in order to create a more cohesive development plan of the area.		
<b>Benefit:</b> Acquiring the property will facilitate an integrated development scheme. The property juts into the Melone land and would be disruptive to development if it was not part of the plan.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> N/A	<b>Typical Replacement Cycle:</b> N/A	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> N/A		
<b>Consequences of Not Implementing/Delaying Implementation:</b> If the parcel is not purchased by the Town, its use is uncertain. The property contains dilapidated structures and a small junkyard. Zoning on the property is Research District, which could result in development of a commercial use if it is sold to a third party.		

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**

Map of property attached.

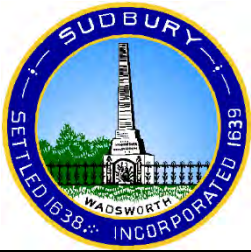
Assessor's value of property in FY15 is \$457,100



- Parcels with Orthos
- Wetlands Town 2008
  - Open Water
  - Deep Marsh
  - Shallow Marsh/Meadow
  - Shrub Swamp
  - Bog
  - Wooded Swamp Decif
  - Wooded Swamp Conif
  - Wooded Swamp Mixec
- Streams Ortho
- Streams CIR
- Lake/Reservoir
- Buildings
- MA Highways
  - Interstate
  - US Highway
  - State Highway
- Town Boundary

0 270 540 ft

Printed on 08/20/2014 at 02:51 PM



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Planning and Community Development

**Item/Project Name:**  
Mass Central Rail Trail Phase 1

<b>Initial Year of Request:</b> FY16	<b>Estimated Total Project Cost:</b> \$160,000	<b>Estimated Future Savings:</b> N/A
<b>Estimated Incremental Costs:</b> Estimated maintenance cost uncertain	<b>Staffing Changes:</b> 0	
<b>Justification Code:</b> D	<b>R or NR:</b> NR	<b>Priority:</b> 3
<p><b>Project Description:</b> Request \$160,000 in FY16 for engineering, design and construction of a 1.8 mile rail trail between Dutton Road and Union Avenue to Massachusetts Department of Conservation and Recreation (DCR) standards. This portion will be known as Phase I of the Mass Central Rail Trail. This portion of the trail is the lowest cost section of a larger 4.6 mile trail and connects several residential neighborhoods and the Route 20 commercial area along this recreational corridor. It is noted that the cost estimate developed for this proposal has not been validated by the Town.</p>		
<p><b>Justification and Need:</b> Rail Trails are excellent public recreational amenities which are highly desired by Sudbury residents. Town Meeting and ballot votes taken over the last several years to design the Bruce Freeman Rail Trail support this statement. Discussion regarding this rail trail has recently been initiated due to the long term lease of the land from the MBTA to the MA Dept. of Conservation and Recreation. This project contemplates a 10 foot wide multi-use recreational trail consisting of stone dust surface, compliant with ADA requirements for access, and including safe road crossings, bridge improvements and guardrails/fencing on elevated sections of the trail.</p> <p>This rail trail will provide safe and healthy routes to the Route 20 commercial corridor and abutting neighborhoods. As town population increases, the volume and congestion of traffic on roads increases; which in turn increases the potential for pedestrian/vehicle collisions. A trail allows for an additional corridor for walking and biking to destinations throughout Town and separates those users from vehicles.</p>		
<p><b>Benefit:</b> The phased approach for this project reduces the annual funding need. Additional phases are contemplated in order to eventually complete the entire 4.6 miles of the trail in Sudbury. Additionally, the concept of rail removal and salvage in exchange for trail improvements by an independent contractor is contemplated, and is the basis for the cost estimate. This will reduce the cost of construction significantly (although no value has been established for this service exchange).</p>		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> N/A		<b>Typical Replacement Cycle:</b> 20 years

**Alternatives Considered/Reasons for Rejecting Alternatives:**

The alternative to designing and constructing the rail trail with Town funds is to wait until state or federal funding is available for the project. This segment is 1.8 miles out of a total of 23 miles. Funding for the entire Rail Trail has been requested on the Transportation Bond Bill.

**Consequences of Not Implementing/Delaying Implementation:**

Delaying implementation of the rail trail will potentially effect the cost of construction, potentially affect the availability of private funds, as well as the potential opportunity to remove the rails at no cost to the Town.

As we have seen from other Town construction projects, the longer a project is delayed the higher the final cost to construct. Currently Sudbury Greenways, a local non-profit company, is an active participant in the implementation of this project. The organization has stated that they will fundraise the first \$15,000 for wetlands delineation and will also fundraise later in the project for a portion of the construction. This fundraising comes with the expectation that a trail will be completed in the near future. Lastly, a unique organization is currently working with municipalities to remove the rails at no cost to the Town. If the project is delayed, this opportunity may no longer be an option and may increase the price significantly.

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**

An estimate has been prepared by BETA Engineering at the request of the Sudbury Greenways for design and construction, and is attached. Also attached is a recent presentation to the Board of Selectmen by Andrew Sullivan of Sudbury Greenways.



# Sudbury Greenways- Mass Central Rail Trail (MCRT)

[www.sudburygreenways.org](http://www.sudburygreenways.org)

**Recreational rail trails connecting  
Sudbury's neighborhoods, schools,  
playing fields, and retail areas**



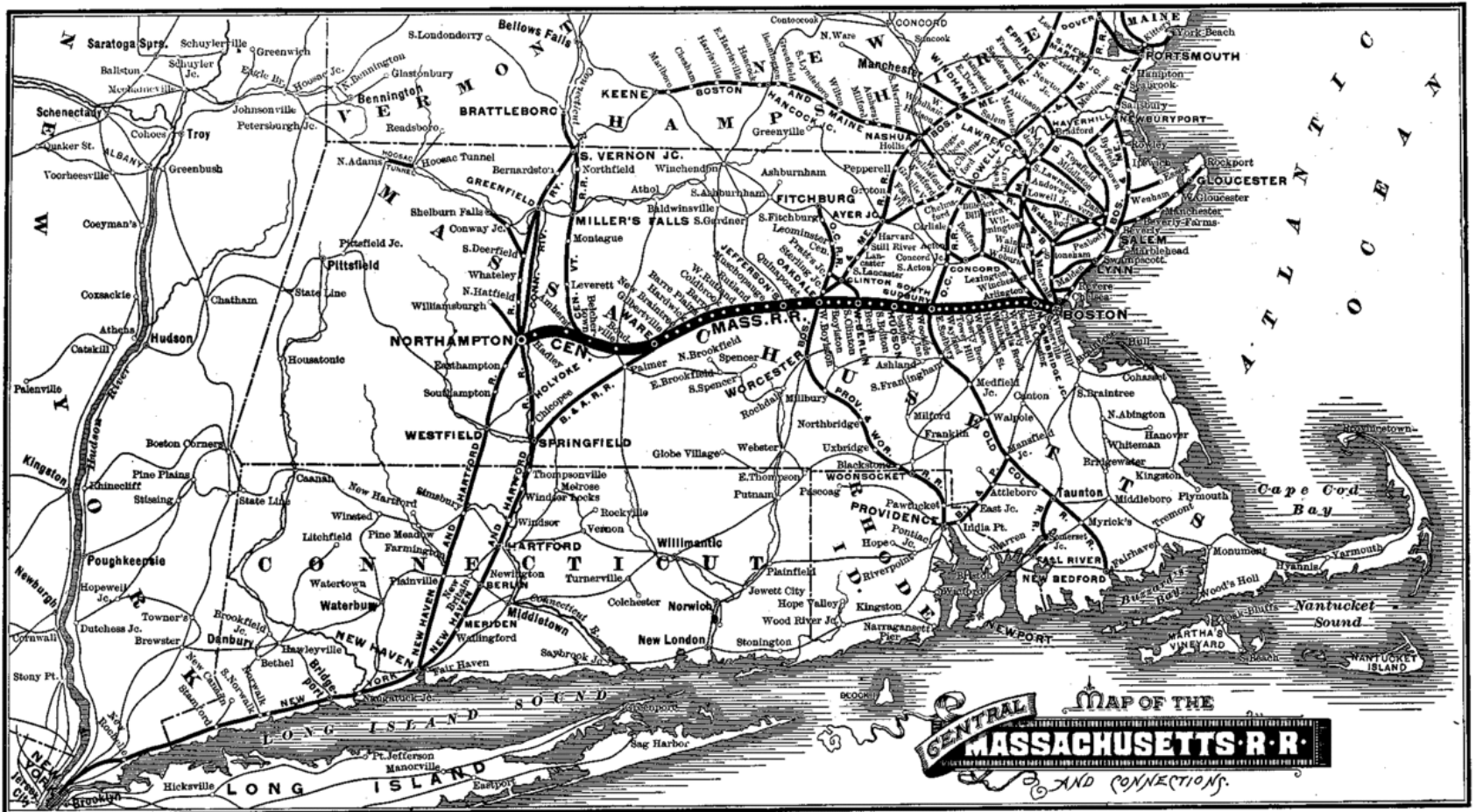
# MA Central Railroad History& Facts

- Chartered 1869
- Ran east to west from Boston to North Hampton, 104 miles
- Large stretch redirected due to the construction/ flooding of the Wachusett Reservoir from 1897-1906
- The New England Hurricane of 1938 destroyed a large portion of the western end of the rail line
- From 1938 on the active portion of the line continued to be reduced from west to east.
- In 1962 a portion of the rail right-of-way (ROW) is utilized as part of the Mass Pike Extension east of Route 128/ 95 to Boston
- MBTA took control of service on the line in 1965 after decades of railroad company mergers and bankruptcies
- Service ran until November 1971 in Sudbury (2 Stops- East and South Stations, Flag Stop at Wayside Inn destroyed in 1940's)
- MBTA takes ownership of the ROW in 1976

# MA Central Railroad ROW more recently

- Beginning in the late 1990's many towns west of Worcester began converting the rail ROW to multi-use recreational rail trails
- 24 communities have converted 25 miles of the ROW into rail trails
- Wachusett Greenways- great example of low cost, town driven trail conversion in the MCRT ROW, public- private partnership

# Historic Map of MA Central Railroad



# The “Wayside Branch” and DCR

- In 2011 the MA Department of Conservation and Recreation (DCR) executes a 99 year lease of the 23 mile stretch of ROW from Waltham to Berlin for the purpose of developing it into a multi-use recreational trail through partnership with local communities and names it the Wayside Branch
- In November 2013 the DCR files an Expanded Environment Notice Form (EENF) with the MA Department of Energy and Environmental Affairs (EEA) proposing the construction of the Wayside Branch rail trail and seeks a waiver from being required to prepare an Environmental Impact Report (EIR)
- In January 2014 the secretary of MA EEA grants a waiver from the mandatory EIR and issues the DCR a Mass Environmental Policy Act (MEPA) certificate for the project
- DCR begins to engage the 8 towns along the ROW regarding developing the trail. The project has no funding through DCR/ MA.

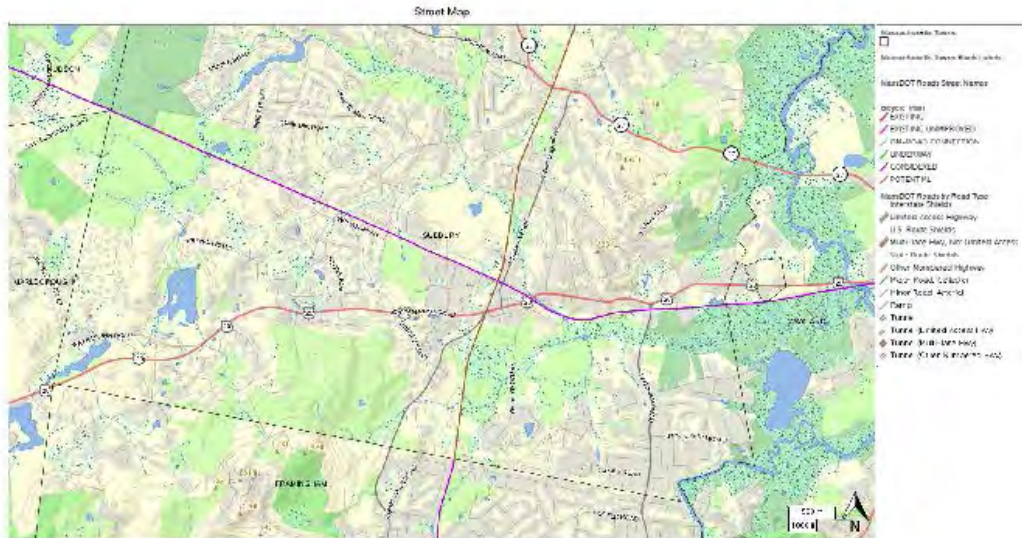
# MCRT- Wayside Branch in Sudbury

- 4.6 miles east-west in the southern section of town
- ROW averages 60-80 feet
- From the Wayland town line heading east it goes under Landham Rd and crosses Boston Post Rd/ Route 20, Union Ave, Horse Pond Rd, Peakham Rd and Dutton Rd at grade.
- Crosses the Hop Brook west of Dutton Rd and again behind Mill Village

# MCRT in Sudbury

Street Map

Page 1 of 1



# General DCR Trail Specifications

- 19 foot construction corridor (60-80 foot ROW)
- 10 foot wide multi-use recreational trail
- No surface mandates
- Surface must be hard and firm
- Must provide Americans with Disabilities Act (ADA) compliant access
- Safe road crossings- Manual of Uniform Traffic Control Devices (MUTCD) standards
- Rehabilitated bridges- decking and railing installation

# DCR, Town of Sudbury, Sudbury Greenways Meeting- July 2014

- DCR presented on status of trail and there is a discussion with respect to how trail development will take place
- The project is unfunded at the state/ DCR level and DCR is looking to partner with towns on each communities vision of the trail, funding will need to come from the towns
- DCR confirms they will not mandate trail surface and stone dust can we used
- DCR confirms they would allow a phased approach to developing the trail in Sudbury



# DCR, Town of Sudbury, Sudbury Greenways Meeting- July 2014

- DCR states they have control of the steel rails and have no use for them and are willing allow towns to use the value of the steel rails to offset some of the development costs
- DCR states Sudbury must use standard MA Chapter 30B procurement procedures for the bidding of the project
- A cost discussion follows, DCR states they estimate trail development will cost \$1,200,000 per mile if federal transportation funds are used through MA-DOT at some future date (unfunded). The high estimated cost is due to the numerous mandates and layers of bureaucracy associated with the expenditure of federal and state transportation funds
- Neither the representative from DCR nor Sudbury's DPW Director were surprised the cost the develop the trail is in excess of 10 times the cost using federal transportation funds
- A conceptual cost estimate obtained by Sudbury Greenways from Beta Environmental/ Iron Horse Preservation Society is discussed, the estimate does not seem too far out of line for engineering and constructing a greenway style rail trail.

# Example of 10 foot wide rolled stone dust greenway style rail trail in Danvers



# The Conversion Process

- Towns receive permitting for the construction from their Conservation Commission (ConCom), a Notice of Intent (NOI) must be filed.
- Towns are granted an access and construction permit by DCR
- Towns fund the project, hire an environment engineering firm and construction company, control and manage the trail development in partnership with DCR

# The Proposed Phase 1 of the MCRT in Sudbury

- From Union Ave to Dutton Rd, 1.8 miles
- Lowest cost section of the trail- no bridges, no high volume road crossing, less wetlands abutment than other sections- all areas of increased costs
- Conceptual Cost Estimate: \$160,000
- Connects numerous neighborhoods
- Provides access to Route 20/ Union Ave commercial area

Sudbury Greenways - MA Central Rail Trail Phase I (Dutton Road to Union Street)					Engineer's Conceptual Cost Estimate	
Item	Description	Qty	Units	Unit Price	Total	
1	Project Management	1	LS	na	\$7,500	
2	Wetlands Delineation (WS)	1	LS	na	\$5,000	
3	Notice of Intent (NOI) & SWPPP Preparation / Filing	1	LS	na	\$9,000	
4	ConComm Public Hearings	3	Each	\$2,100	\$6,300	
5	Implement Erosion Controls	1	LS	na	\$10,000	
6	Engineering Design Drawings - Crossing Details - 80' Scale	2	sheets	\$3,800	\$7,600	
7	ADA Layout, Slope & Misc. Details (field verify)	1	sheet	\$7,500	\$7,500	
8	Grade Crossings, including MUTCD Signage - three locations	1	Each	\$2,500	\$2,500	
9	RRFB Signs at Route 20 and Union Street	0	Each	\$12,500	\$0	
10	Rail & Tie Removal by IHPS, with Grading	10,000	LF	\$0/LF	\$0	
11	Bridge and Stream Crossings - Deck Replacement	0	LF	\$220/LF	\$0	
12	Stone Dust & Granite Stabilizer at up to 4 ADA Access Locations (in place)	10,000	LF	\$5/LF	\$50,000	
13	Flexible shoulders	1	LS	na	\$14,000	
14	Survey Layout & Verification	4	Days	\$2,400	\$9,600	
15	Contingency	1	Allowance	na	\$31,000	
Total Estimate of Probable Construction Cost.....					\$180,000	

**Assumptions:**

1. Up to four (4) ADA trail access points
2. Stone dust surface, including stabilized granite at ADA access points
3. O&M of ADA access points & trail by Sudbury Greenways
4. No contamination to be addressed under this phase.
5. Comply with Best Management Practices, but incomplete stone dust cover.
6. Layout based on MassGIS Drawings
7. ADA Compliant Stone Dust Surface
8. MEPA Certificate already issued

Sudbury Greenways - MA Central Rail Trail - Wayside Branch					Engineer's Conceptual Cost Estimate	
Item	Description	Qty	Units	Unit Price	Total	
1	Project Management	1	LS	na	\$15,000	
2	Wetlands Delineation (WS)	1	LS	na	\$18,000	
3	Notice of Intent (NOI) & SWPPP Preparation / Filing	1	LS	na	\$32,500	
4	ConComm Public Hearings	4	Each	\$2,100	\$8,400	
5	Implement Erosion Controls	1	LS	na	\$40,000	
6	Engineering Design Drawings - Crossing Details - 60' Scale	10	sheets	\$3,800	\$38,000	
7	ADA Layout, Slope & Misc. Details (field verify)	1	sheet	\$7,500	\$7,500	
8	Grade Crossings, including MUTCD Signage - three locations	3	Each	\$2,500	\$7,500	
9	RRFB Signs at Route 20 and Union Street	2	Each	\$12,500	\$25,000	
10	Rail & Tie Removal by IHPS, with Grading	24,300	LF	\$0/LF	\$0	
11	Bridge and Stream Crossings - Deck Replacement	200	LF	\$220/LF	\$44,000	
12	Stone Dust & Granite Stabilizer at up to 12 ADA Access Locations (in place)	24,300	LF	\$5/LF	\$121,500	
13	Flexible shoulders	1	LS	na	\$30,000	
14	Survey Layout & Verification	8	Days	\$2,400	\$19,200	
15	Contingency	1	Allowance	na	\$43,400	
<b>Total Estimate of Probable Construction Cost.....</b>					<b>\$450,000</b>	

**Assumptions:**

1. Up to twelve (12) trail access points
2. Stone dust surface, including stabilized granite at ADA access points
3. O&M of ADA access points & trail by Sudbury Greenways
4. No contamination to be addressed under this phase
5. Comply with Best Management Practices, but incomplete stone dust cover
6. Layout based on MassGIS Drawings
7. ADA Compliant Stone Dust Surface
8. MEPA Certificate already issued

# Suggested Next Steps to Set Phase 1 in Motion

- Fall 2014: Sudbury Greenways donates for the cost of wetlands delineation and preparation of the NOI for Sudbury ConCom, estimated to be \$15,000
- Fall 2014: The Town of Sudbury through the leadership of the Board of Selectman, determines a funding source, creates a binding Warrant Article to fund the project, and holds a Town Meeting for voter approval
- Estimated cost to the town to complete Phase 1 is \$160,000
- Possible funding sources are free cash, capital exclusion, or Community Preservation Act Funds (CPA)

# A Sudbury Greenways partnership with town of Sudbury

- Confirm the town's residents want the trail developed and want the board of selectman to complete phase 1 of the trail through voting on the 2 non-binding MCRT articles on Warrant at the September 4 Town Meeting
- Donate for cost of Phase 1 wetlands delineation and NOI, ~\$15,000
- Donate the materials for split rail fencing along trail in elevated sections- need identified by Sudbury Planning and Development during walk through of Phase 1 section. Awaiting estimate.



# Making the MCRT in Sudbury a near term reality

- Estimated Cost: \$450,000 (engineering and construction) for the entire 4.6 mile trail. \$160,000 (engineering and construction) for phase 1 from Dutton Rd to Union Ave, 1.8 miles
- Next Steps: Sudbury Greenways will fundraise to pay for the cost of wetlands delineation and a Notice of Intent (NOI) filing for phase 1 of the MRCT in Sudbury. The Sudbury Conservation Committee will be the permitting agency for this project. We hope to be in a position to file the NOI this fall. We have an estimate of \$15,000 for the work from an environmental engineering firm with experience in rail trail development.
- Funding considerations for Phase 1 design build: Free cash, capital exclusion, Community Preservation Act (CPA) funds

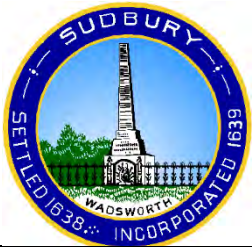
Thank you.  
To learn more visit  
[www.sudburygreenways.org](http://www.sudburygreenways.org)  
Like us on Facebook.



Sudbury Greenways - MA Central Rail Trail Phase I (Dutton Road to Union Street)				Engineer's Conceptual Cost Estimate	
Item	Description	Qty	Units	Unit Price	Total
1	Project Management	1	LS	na	\$7,500
2	Wetlands Delineation (WS)	1	LS	na	\$5,000
3	Notice of Intent (NOI) & SWPPP Preparation / Filing	1	LS	na	\$9,000
4	ConComm Public Hearings	3	Each	\$2,100	\$6,300
5	Implement Erosion Controls	1	LS	na	\$10,000
6	Engineering Design Drawings - Crossing Details - 60' Scale	2	sheets	\$3,800	\$7,600
7	ADA Layout, Slope & Misc. Details (field verify)	1	sheet	\$7,500	\$7,500
8	Grade Crossings, including MUTCD Signage - three locations	1	Each	\$2,500	\$2,500
9	RRFB Signs at Route 20 and Union Street	0	Each	\$12,500	\$0
10	Rail & Tie Removal by IHPS, with Grading	10,000	LF	\$0/LF	\$0
11	Bridge and Stream Crossings - Deck Replacement	0	LF	\$220/LF	\$0
12	Stone Dust & Granite Stabilizer at up to 4 ADA Access Locations (in place)	10,000	LF	\$5/LF	\$50,000
13	Flexible shoulders	1	LS	na	\$14,000
14	Survey Layout & Verification	4	Days	\$2,400	\$9,600
15	Contingency	1	Allowance	na	\$31,000
<b>Total Estimate of Probable Construction Cost.....</b>					<b>\$160,000</b>

**Assumptions:**

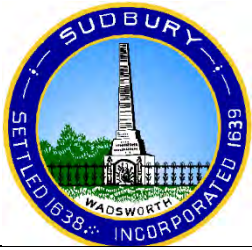
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3. O& M of ADA access points & trail by Sudbury Greenways
4. No contamination to be addressed under this phase.
5. Comply with Best Management Practices, but incomplete stone dust cover.
6. Layout based on MassGIS Drawings
7. ADA Compliant Stone Dust Surface
8. MEPA Certificate already issued



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

<b>Department/Committee:</b> Park and Recreation Department/ Park and Recreation Commission
<b>Item/Project Name:</b> Lighting Cutting Field

<b>Initial Year of Request:</b> FY 16	<b>Estimated Total Project Cost:</b> \$200,000	<b>Estimated Future Savings:</b> None
<b>Estimated Incremental Costs:</b> None	<b>Staffing Changes:</b> None	
<b>Justification Code:</b> C	<b>R or NR:</b> NR	<b>Priority:</b> 4
<b>Project Description:</b> Add field lighting to Cutting Turf Field.		
<b>Justification and Need:</b> By adding field lighting we will be able to extend the usage of this field resulting in more playing time and less stress on some of our natural grass fields		
<b>Benefit:</b> Extended play time on the artificial grass field and reduced stress on the natural grass fields especially during the early spring and during wet play days.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> This is a new item.	<b>Typical Replacement Cycle:</b> 30 years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Could not do the lights. Would eliminate extended time on the field		
<b>Consequences of Not Implementing/Delaying Implementation:</b> None		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Would likely use MUSCO lighting which can be controlled via computer so you can set start and end times remotely. Also it is hands off for 25 years so you won't have to replace so much as a light bulb during that time period.		

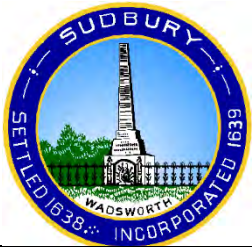


**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Park and Recreation Department/ Park and Recreation Commission

**Item/Project Name:**  
Lighting Turf 1 and Turf 2 at LSRHS

<b>Initial Year of Request:</b> FY 16	<b>Estimated Total Project Cost:</b> \$400,000	<b>Estimated Future Savings:</b> None
<b>Estimated Incremental Costs:</b> None	<b>Staffing Changes:</b> None	
<b>Justification Code:</b> C	<b>R or NR:</b> NR	<b>Priority:</b> 5
<b>Project Description:</b> Add field lighting to Turf Field 1 and Turf Field 2 at LSRHS.		
<b>Justification and Need:</b> By adding field lighting we will be able to extend the usage of these fields resulting in more playing time and less stress on some of our natural grass fields		
<b>Benefit:</b> Extended play time on these artificial grass fields and reduced stress on the natural grass fields especially during the early spring and during wet play days.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> This is a new item.		<b>Typical Replacement Cycle:</b> 30 years
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Could not do the lights. Would eliminate extended time on the fields		
<b>Consequences of Not Implementing/Delaying Implementation:</b> None		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> Would likely use MUSCO lighting which can be controlled via computer so you can set start and end times remotely. Also it is hands off for 25 years so you won't have to replace so much as a light bulb during that time period.		



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Park and Recreation/Park and Recreation Commission

**Item/Project Name:**  
Davis Field Development

<b>Initial Year of Request:</b> FY14 – received design money	<b>Estimated Total Project Cost:</b> \$3,573,512.00	<b>Estimated Future Savings:</b> none
<b>Estimated Incremental Costs:</b> FY16, FY17 none, FY18+ would need @\$20,000 to maintain with Seed, irrigation, manpower ect.	<b>Staffing Changes:</b> none	
<b>Justification Code:</b> D	<b>R or NR:</b> NR	<b>Priority:</b> 1
<b>Project Description:</b> Development of Davis Field into 2+ multi use rectangular fields, increased parking, drainage, paving, irrigation, 4- 100’ diamond fields, all grading work, ect to make the site a playable field complex.		
<b>Justification and Need:</b> There is a need for additional flat field large open play spaces in town as indicated in the Gale Field Use Master Plan. Additionally 100’ baseball diamonds currently in use at the elementary schools are completely overused and in unsafe playing conditions, the overuse does not allow for ample time to rest these fields or allow for us to bring them back into proper playing conditions. Moving of the 4 100’ diamonds to one location would improve these conditions and provide for safe playing conditions for our users. Finally with the installation of the rail trail there will be a need for additional parking at Davis Field so improvements to this lot, drainage, stormwater management, paving and increasing the number of available parking spots will benefit a large number of residents in the community.		
<b>Benefit:</b> This project will benefit lacrosse, soccer, baseball, bicyclists, walkers, nature enthusiasts, and many others with the improvements made to the facility and additional parking on this site.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> N/A	<b>Typical Replacement Cycle:</b> N/A	

**Alternatives Considered/Reasons for Rejecting Alternatives:**

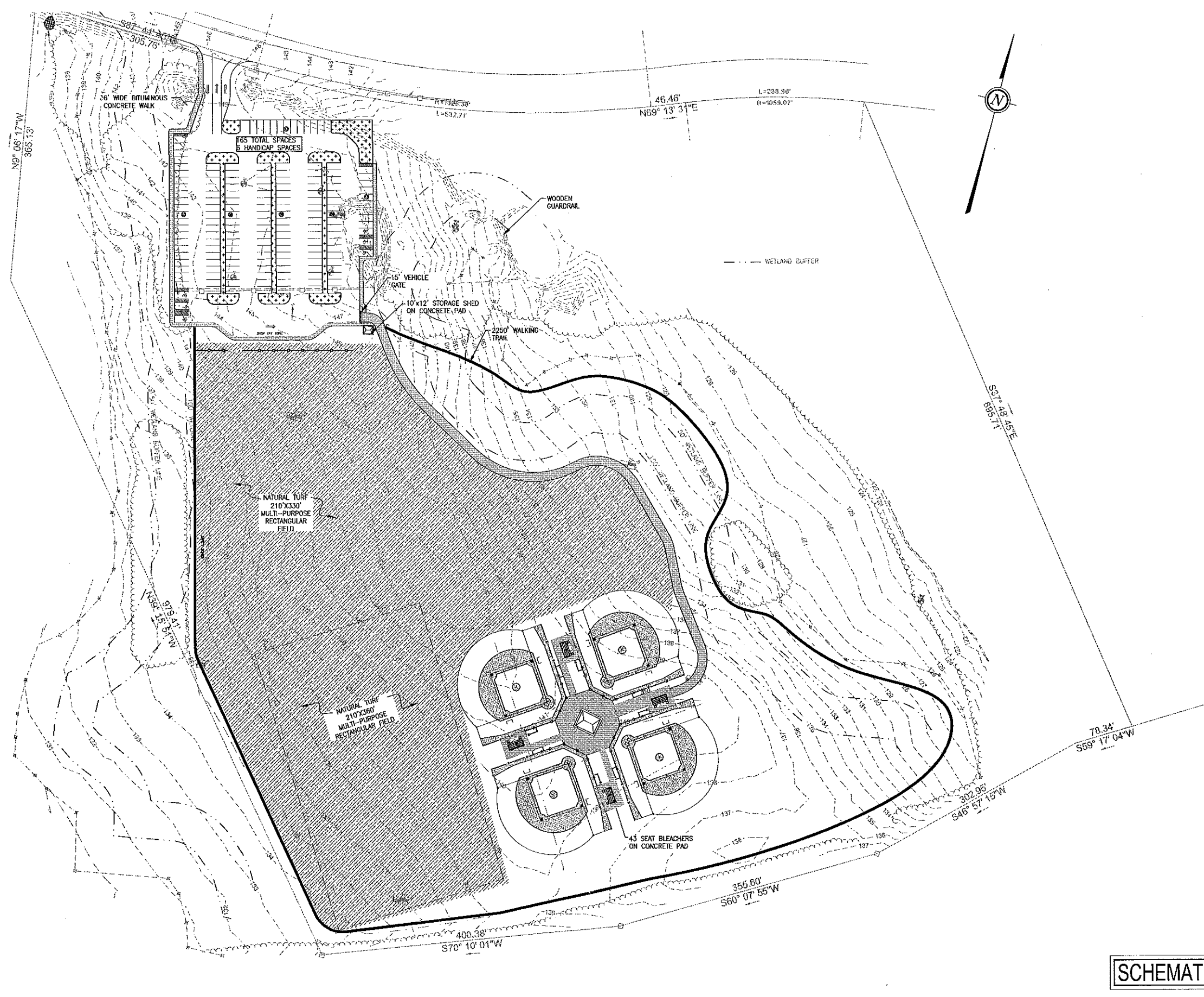
The site could remain as it currently is. This is a large site and very suitable for the types of fields that we would like to place on the site. We have few sites that would be as conducive to this type of development as Davis Field is.

**Consequences of Not Implementing/Delaying Implementation:**

Delaying this work will continue to place unnecessary demand on some fields that we are already overusing resulting in unsafe playing conditions for our residents. As these will be natural grass fields, delay will result in significant time before we can actually have playing time available on these fields.

**Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):**

Cost estimate included with schematic design.



**GALE**  
 Gale Associates, Inc.  
 Engineers and Planners  
 163 LIBBEY PARKWAY | WEYMOUTH, MA 02189  
 P 781.335.6465 F 781.335.6467  
 www.galeinc.com  
 Boston Baltimore Orlando San Francisco

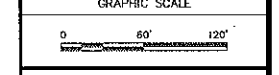
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PROJECT  
**DAVIS AND FEATHERLAND FIELD PROJECT**  
 40 FAIRBANK ROAD  
 SUDBURY, MA

OWNER  
 TOWN OF SUDBURY  
 322 CONCORD ROAD  
 SUDBURY, MA 01776

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	716100_C101
DESIGNED BY	RMM
DRAWN BY	RMM
CHECKED BY	EDR
DATE	08/18/2014
DRAWING SCALE	1"=60'



SHEET TITLE  
**DAVIS LAYOUT PLAN**

**SCHEMATIC**

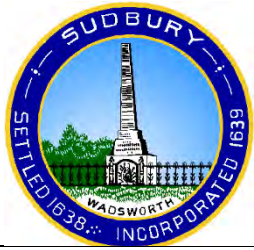
DRAWING NO.  
**C101**  
 PROJECT NO. 716100

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**DAVIS FIELDS - SUDBURY MA**  
**50 % DESIGN ESTIMATE - AUGUST 18, 2014**

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST	TOTAL COST	REMARKS
<b>1</b>	<b>General Conditions</b>					<b>\$ 82,023.23</b>	
a	Bonds and Insurance (2%)	LS	1	\$ 57,023.23	\$ 57,023.23		
b	Mobilization/Demobilization	LS	1	\$ 25,000.00	\$ 25,000.00		
<b>2</b>	<b>Erosion Control</b>					<b>\$ 26,000.00</b>	
a	Erosion Control	LF	4,000	\$ 6.50	\$ 26,000.00		
<b>3</b>	<b>Well Installation</b>					<b>\$ 341,531.36</b>	
a	Irrigation Wells	EA	3	\$ 50,000.00	\$ 150,000.00		Assume 3
<b>4</b>	<b>Site Preparation / Demolition</b>					<b>\$ 538,639.36</b>	
a	Misc. Demolition (wooden guard rail, signs, etc.)	LS	1	\$ 5,000.00	\$ 5,000.00		
b	Strip and screen and stockpile topsoil (assume 10")	CY	17066	\$ 8.00	\$ 136,531.36		
c	Stump Removal	LS	1	\$ 50,000.00	\$ 50,000.00		
d	Earthwork Cut/fill (to remain on Site)	CY	40951	\$ 8.00	\$ 327,698.00		
e	Earthwork Fill (from off Site)	CY	750	\$ 26.00	\$ 19,500.00		
<b>6</b>	<b>Multi-Purpose Rectangular Field Construction</b>					<b>\$ 785,788.06</b>	
a	Prepare sub-base, shape and compact	SY	31,872	\$ 2.25	\$ 71,262.50		
b	Gravel Drainage Base under Field (4")	Ton	5,279	\$ 45.00	\$ 237,541.67		
c	Drainage System	LS	1	\$ 75,000.00	\$ 75,000.00		
d	Place and amend root zone materials, 8"	CY	7038	\$ 18.00	\$ 126,688.89		
e	Install irrigation system and controller	Zone	50	\$ 2,500.00	\$ 125,000.00		
f	Fine Grade and Seed	SF	285,050	\$ 0.40	\$ 114,020.00		
g	Turf establishment requirements	LS	1	\$ 25,000.00	\$ 25,000.00		
e	20' Safety Netting	LF	205	\$ 55.00	\$ 11,275.00		
<b>6</b>	<b>Four (4) Little League Fields</b>					<b>\$ 717,596.68</b>	
a	Prepare sub-base, shape and compact	SY	10,319	\$ 2.25	\$ 23,218.00		
b	Gravel Drainage Base under Field (4")	Ton	1,720	\$ 45.00	\$ 77,393.33		
c	Drainage System	LS	1	\$ 150,000.00	\$ 150,000.00		
d	Place and amend root zone materials, 8"	CY	2293	\$ 18.00	\$ 41,276.44		
e	Install irrigation system and controller	Zone	20	\$ 2,500.00	\$ 50,000.00		
f	Fine Grade and Seed	SF	79,272	\$ 0.40	\$ 31,708.80		
g	Turf establishment requirements	LS	1	\$ 10,000.00	\$ 10,000.00		
e	Skinned infield	Ton	1,000	\$ 90.00	\$ 90,000.00		
f	Backstop	EA	4	\$ 15,000.00	\$ 60,000.00		
h	6' Perimeter Fence	LF	1,800	\$ 55.00	\$ 99,000.00		
i	Temporary Bleachers	EA	4	\$ 15,000.00	\$ 60,000.00		
j	Storage Building	LS	1		\$ -		
k	Paved Areas	LS	1	\$ 40,000.00	\$ 25,000.00		
<b>7</b>	<b>Parking Lot</b>					<b>\$ 441,605.97</b>	
a	Prepare sub-base, shape and compact	SY	8089	\$ 2.25	\$ 18,199.75		
b	Drainage System	LS	1	\$ 50,000.00	\$ 50,000.00		
c	Gravel Base (12" base)	Ton	2696	\$ 36.00	\$ 97,065.33		
d	Pavement (2.5" Binder course and 1.5" Wearing Course)	SY	8,089	\$ 32.00	\$ 258,840.89		
e	Striping of Parking lot	LS	1	\$ 10,000.00	\$ 10,000.00		
f	Signage	LS	1	\$ 7,500.00	\$ 7,500.00		
<b>8</b>	<b>Walkways</b>					<b>\$ 47,016.80</b>	
a	Prepare sub-base, shape and compact	SY	1473	\$ 2.25	\$ 3,314.50		
b	Gravel Base (8" base)	Ton	327	\$ 30.00	\$ 9,820.74		
c	Pavement (1.5" Binder course and 1.5" Wearing Course)	SY	1,473	\$ 23.00	\$ 33,881.56		
<b>9</b>	<b>Multi-Use Walking Trail</b>					<b>\$ 37,200.00</b>	
a	Strip and Haul Vegetation / Topsoil	CY	200	\$ 42.00	\$ 8,400.00		
b	Prepare sub-base, shape and compact	SY	600	\$ 8.00	\$ 4,800.00		
c	Crusher Run (6")	CY	200	\$ 120.00	\$ 24,000.00		
<b>10</b>	<b>Site Electrical</b>					<b>\$ 40,000.00</b>	
a	Site Electrical (Baseball Bldg/ Wells Only)	LS	1	\$ 40,000.00	\$ 40,000.00		
<b>11</b>	<b>Site Amenities</b>					<b>\$ 50,000.00</b>	
a	Landscaping / Flag pole / wooden guardrail / plantings	LS	1	\$ 50,000.00	\$ 50,000.00		
						<b>Subtotal \$ 3,107,401.34</b>	
						<b>Contingency (15%) \$ 466,110.20</b>	
						<b>Total \$ 3,573,511.55</b>	



**Town of Sudbury  
Capital Improvement Budget Request  
FY2016 Form A**

**Department/Committee:**  
Park, Recreation, Aquatics

**Item/Project Name:**  
Atkinson Pool Roof and Envelope  
Replacement and Repair

<b>Initial Year of Request:</b> FY14 through the Facilities Dept.	<b>Estimated Total Project Cost:</b> \$380,000	<b>Estimated Future Savings:</b> none
<b>Estimated Incremental Costs:</b> None	<b>Staffing Changes:</b> None	
<b>Justification Code:</b> B	<b>R or NR:</b> NR	<b>Priority:</b> 2
<b>Project Description:</b> Replace roof and siding on the Atkinson Pool; make improvements to the building envelope.		
<b>Justification and Need:</b> The roof and siding are 27 years old and are at the end of their life cycle.		
<b>Benefit:</b> Preserve the building, prevent further deterioration of a town asset.		
<b>Last time this was replaced (i.e., year roof was previously replaced or year vehicle):</b> 1987	<b>Typical Replacement Cycle:</b> 20 years	
<b>Alternatives Considered/Reasons for Rejecting Alternatives:</b> Submit this project at Town Meeting as a separate article- debt exclusion or capital exclusion. Put it off for another year.		
<b>Consequences of Not Implementing/Delaying Implementation:</b> Building deterioration, failure, and more costly repairs.		
<b>Other Pertinent Background Information (e.g., Quotes, Brochures, Pictures, etc):</b> See attached roof condition survey for Fairbank Complex.		



6 June 2013

Mr. James Kelly  
Facilities Director  
Town of Sudbury  
Department of Public Works Building  
275 Old Lancaster Road  
Sudbury, MA 01776

Project 130447 – Facade Condition Assessment, Atkinson Pool, Fairbank Community Center, 40 Fairbank Road, Sudbury, MA

Dear Mr. Kelly:

Per your request, we performed a visual survey and made probe openings in the Exterior Insulation and Finish System (EIFS) cladding and ballasted EPDM roofing at the Atkinson Pool natatorium building. This report contains a summary of our findings, as well as a sketch and outline specification sections related to recommended repairs.

## 1. BACKGROUND

The Atkinson Pool was constructed in 1987 as an addition to the Fairbanks school, which was constructed in 1959. The Fairbanks school and the Atkinson Pool are now a part of the Fairbank Community Center (Photo 1). The Atkinson Pool building natatorium is approximately 10,000 sq ft, with a swimming and diving pool. The natatorium is constructed with a wood-framed roof structure and load-bearing masonry walls on concrete footings.

We reviewed the existing as-built drawings dated 6 March 1987. The exterior walls are constructed of a combination of concrete masonry units (CMU) and an exterior insulation finish system (EIFS). The lower portion of the masonry wall consists of a 4 in. split-faced CMU veneer, 3/4 in. air space, 1 in. rigid insulation, and 8 in. CMU. The upper portion of the masonry walls consists of an EIFS system installed over 12 in. CMU. The architectural design lacks a flashing at the joint between the EIFS system and the lower split-faced CMU veneer wall.

The roof assembly over the natatorium is a gabled roof sloped at 2 in. per foot toward gutters at the roof eaves. The architectural drawings indicate that the roof assembly over the natatorium is a ballasted single-ply roof membrane on 3 in. rigid insulation over 3 in. x 6 in. tongue and groove laminated wood deck. Several of the architectural details indicate that a vapor barrier is to be installed between the wood deck and the rigid insulation.

## 2. INTERIOR OBSERVATIONS

The interior of the Atkinson Pool natatorium has exposed acoustical CMU walls, laminated wood roof beams, and tongue and groove laminated wood roof deck (Photo 2). We observed staining on the laminated wood beams that appears to originate from the joint between the wood beams and the wood deck (Photo 3). During our visit, the interior temperature inside of the space was

80.5°F, and the relative humidity was 53%. We observed that the building is negatively pressurized with respect to the exterior.

### **3. EIFS OBSERVATIONS**

We performed a visual assessment of the EIFS finish, and made exploratory openings at three locations in the EIFS to evaluate the condition of the EIFS and details, and to evaluate the source of isolated cracks in EIFS finish.

#### **3.1 Visual Assessment**

We performed a visual assessment of the existing EIFS and observed the following conditions:

- Cracking of the existing EIFS finish in multiple locations on the southwest and northwest elevations (Photo 4).
- Damage and dents in the existing EIFS finish in multiple locations on the southwest and southeast elevations from rocks or balls (Photo 5).
- Burrowed holes in the existing EIFS finish and insulation on the southwest and northwest elevations from birds (Photo 6).
- Failed sealant at EIFS expansion joints (Photo 7).
- Failed sealant between the EIFS and the split-face CMU veneer brick below (Photo 8).
- Scouring of the EIFS finish with the reinforcing mesh visible below joints in the roof gutter at the southwest elevation (Photo 9).
- EIFS expansion joints generally align with the CMU expansion joints below.
- An aesthetic EIFS reveal is installed at regular intervals. This reveal is not intended to be an expansion joint for the EIFS. Several reveals are cracked (Photo 10).

#### **3.2 Exploratory Openings**

We made three exploratory openings in the EIFS at different locations. At all locations we observed that the EIFS is a reinforced acrylic finish installed directly over 2 in. of expanded polystyrene insulation. The insulation is adhered to the CMU backup with a discontinuous cementitious based adhesive. At areas without adhesive, the insulation is spaced approximately 1/4 in. to 1/2 in. off of the CMU backup wall and is not adhered to the CMU backup (Photo 11). We used a GE Protimeter Moisture Measurement System (Protimeter) to record moisture readings in existing wood construction. Measured wood moisture contents in excess of 16% are considered "wet" and may cause accelerated decay and promote mold growth within or on the wood. When moisture contents of wood substrates are below 8%, the Protimeter does not provide a moisture reading. We observed the following conditions at the individual openings:

- **Opening 1:** We made an exploratory opening at the transition between the EIFS and the lower portion of the masonry wall with the 4 in. CMU veneer. The EIFS terminates approximately 1/2 in. from the top of the 4 in. CMU. The EIFS finish reinforcement fabric wraps the bottom of the insulation panel, however the base and finish coat do not wrap around the bottom of the insulation (Photo 12). A sealant joint is installed between the bottom of the EIFS panel and the CMU veneer. The sealant joint failed adhesively and cohesively. Below the failed sealant joint, we observed staining on the CMU veneer (Photo 13). We noted a gap of approximately 1/8 in. between insulation boards (Photo 14).
- **Opening 2:** We made an opening at the end of the laminated wood beams and observed that the end of the laminated wood beam is exposed behind the EIFS. The end of the wood beam did not show signs of deterioration due to moisture. We attempted to record the percent moisture content with the Protimeter, however the Protimeter did not register a reading; this means that the percent moisture content at the end of the wood beam was below 8% (Photo 15).
- **Opening 3:** We made an opening at the cracked EIFS at the northwest elevation. The crack in the EIFS is diagonal beginning at the window head-to-jamb corner. We observed that the CMU backup wall mortar joints are cracked at this location along a similar to the crack in the EIFS (Photo 16).

#### 4. CMU OBSERVATIONS

We performed a visual assessment of the exposed CMU veneer masonry walls. We observed staining on the CMU veneer across all elevations. The staining emanates from the joint between the EIFS and the top of the exposed CMU (Photos 17 and 18).

The CMU mortar joints are cracked on all elevations. We observed that the cracking is more prevalent at the building corners and below the windows along the southwest elevation (Photos 19 and 20). We also observed a dislodged CMU veneer at the south corner of the building (Photo 21).

At the northeast elevation of the building, a 1 in. x 1 in. steel relieving angle is installed to support the outer edge of the veneer (Photo 22). At the north side of the northeast elevation the steel relieving angle is corroded (Photo 23). This area is directly below exhausts from the pool filter room.

Below a leaking joint in a roof gutter on the southwest elevation, the smooth-faced CMU veneer blocks are scoured and the mortar within joints has cracked and has fallen out (Photo 24).

#### 5. ROOF OBSERVATIONS

We made three exploratory openings in the roof assembly to determine the existing construction and the condition of concealed materials. The roof membrane is a loose laid and ballasted ethylene propylene diene (EPDM) single-ply membrane with approximately 2 in. of river rock ballast. The membrane is installed over 3 in. loose laid, polyisocyanurate insulation and two layers of asphalt-impregnated felt over 3 in. x 6 in. tongue and groove wood plank deck (Photo 25).

At all of the openings, we observed moisture on the underside of the EPDM roof membrane (Photo 26). The top 1 to 2 in. of insulation is wet to the touch. We measured the moisture content of the wood planks with the Protimeter moisture meter and found that the wood planks have acceptable moisture content (9.5-11.4%). We observed surface corrosion on several fasteners securing the asphalt-impregnated felt to the wood plank deck (Photo 27).

We observed that the river rock ballast is degrading. Many of the stones are cracked and splitting, which results in sharp edges that can penetrate the roof membrane particularly under foot traffic (Photo 28). We understand that this roof does not experience much traffic; however, you indicated that the roof is occasionally shoveled in the wintertime to reduce the roof snow load.

## 6. CONCLUSIONS

### 6.1 EIFS

The installed EIFS is a barrier system that relies on the exposed finish and sealant joints to form a continuous barrier and resist water penetration. Therefore, breaches in the barrier such as sealant discontinuities or cracks and holes in the finish result in water penetration behind the EIFS.

The insulation boards are not continuously adhered to the CMU backup wall, and rely on discontinuous cementitious adhesive for support. EIFS manufactures require that the board insulation be adhered to the substrate to resist cracking and wind loads. The insulation board spanning between areas of adhesive is prone to cracking and delamination in a high wind event. Due to the space between the existing EIFS insulation board and the backup CMU, providing supplemental fasteners through the EIFS insulation board would deflect the insulation and result in more cracks and a non-plumb (wavy) appearance.

### 6.2 CMU

The portions of the CMU wall exposed to the exterior are 4 in. thick smooth-faced and split-faced veneer CMU blocks installed over a 1/2 in. air cavity, 1 in. insulation, and 8 in. CMU backup wall. We observed cracking in the split-faced veneer CMU at building corners and below and above window corners. However, we do not know if the cracks are static or moving. The cracking appears to be the result of building settlement over the history of the building. If the cracks are static (non-moving), then cutting and re-pointing the affected joints will eliminate the aesthetic impacts of the cracked joints and will help to prevent water infiltration through them. The corroded shelf angle on the southeast elevation is located directly below the pool filter room exhaust louvers. Replacing the corroded shelf angle with a stainless steel angle that is more resistant to corrosion will reduce the possibility of corrosion in the future.

### 6.3 Roof

Ballasted roofing systems typically have a shorter lifespan than similar adhered or mechanically fastened (non-ballasted) systems for the following reasons:

- The ballast tends to inhibit drainage of water from the surface of the membrane, resulting in prolonged exposure of the membrane seams to moisture; over time, this can result in premature deterioration of the seams and eventual leakage
- Over the life of the roof the initially relatively smooth stone ballast tends to crack into smaller pieces with sharper edges. Under foot traffic or moving of ballast, these sharper edges lead to holes in the membrane and leakage into the building.

The existing roof assembly is approximately 25 yrs old and is near or at the end of its useful service life. We understand that the roof currently does not have reported leaks to the interior. The deteriorating ballast presents an increasing risk of damage to the single-ply EPDM membrane. The sharp cracked stone can puncture the EPDM roof membrane from foot traffic on the roof during snow shoveling and other activities. Leaks that develop in ballasted, loose laid single-ply roof assemblies can be difficult and costly to trace since the membrane is not visible, and inspection of the membrane often requires temporary removal of a significant amount of stone ballast. In addition, the foot traffic and moving of sharp ballast associated with the inspection process can lead to additional punctures in the membrane.

The current roof assembly lacks a vapor retarder and air barrier; the two layers of asphalt-impregnated building paper provide little resistance to air or vapor flow. Today it is common practice to install a vapor retarder and air barrier to separate relatively humid natatorium spaces from the exterior environment, especially in cold climates. The vapor retarder and air barrier prevent the warm moist interior air and interior water vapor from reaching the cold portions of the roof assembly. As the interior air or vapor travel through the roofing assembly, the water vapor condenses on cold surfaces (such as on the underside of the roof membrane, as our exploratory openings revealed). During prolonged periods of cold weather (wintertime), condensation may build up inside of the roof assembly and result in the water staining that we observed at the top of the laminated beams. In addition, the wet roof insulation is no longer providing the expected thermal protection.

## 7. RECOMMENDATIONS

We have included an outline specification section in Appendix A to address the following recommended repairs.

### 7.1 EIFS

We recommend removing and replacing the EIFS with new fully adhered, drainable EIFS. Such a system will maintain the original appearance of the building and drain water that bypasses the EIFS finish or sealant joints back to the exterior.

Prior to installing the new EIFS, we recommend installing a through-wall flashing (with an exterior drip edge) at the base of the drainable EIFS and above the CMU veneer to direct any incidental moisture away from the exterior surface of the CMU (thereby reducing staining on the CMU). The through-wall flashing should have an upturned leg that is integrated with the water resistive barrier behind the EIFS.

Additionally, we recommend repairing the gutter joints to eliminate water from escaping the gutter and flowing down the face of the new EIFS (which currently results in scouring of the

EIFS finish). We recommend removing the gutter sealant that is currently installed and stripping the gutter seams with EPDM membrane backed with a butyl adhesive. The EPDM membrane will allow movement between the gutter sections.

We have included specification sections and sketches in Appendix A for these recommended repairs.

## 7.2 CMU

While we do not know whether the cracks in the CMU are active, we recommend repointing the cracks at this time to help reduce water penetration at these locations. If the cracks re-open with time, we will then know that they are active and we then can provide guidance on the possibility of a further study or investigation.

We expect that the installation of a flashing above the top course of the flush and split-face concrete CMU will prevent water staining of the CMU. The current stains can be removed with a masonry cleaner.

We recommend replacing the relieving angle at the southeast elevation with a stainless steel angle to reduce the possibility of corrosion in the future. Temporary support of the CMU above the angle will be required to replace the angle.

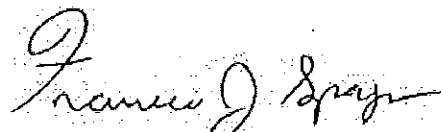
## 7.3 Roof

We understand that the roof system is not scheduled for replacement at this time. Due to the wet insulation, condition of the ballast and lack of a vapor retarder and dedicated air barrier in the current assembly, we recommend replacing the ballasted EPDM roof assembly when budgets allow. The new assembly should include a dedicated vapor retarder and air barrier that are continuous across the roof and integral with the building walls to reduce the possibility of condensation within the roof assembly. We recommend avoiding a ballasted assembly and installing either mechanically fastening or fully adhered roofing membrane over insulation and cover board that are fastened directly to the wood deck. If you would like to pursue roof replacement, we can provide you with a proposal for a roof design at a future date.

Sincerely yours,



David W. Fox  
Staff II



Francesco J. Spagna  
Senior Project Manager



**OUTLINE SPECIFICATIONS**  
**Atkinson Pool, Fairbank Community Center**  
**40 Fairbank Road**  
**Sudbury, Massachusetts**

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Mr. James Kelly  
Facilities Director  
Town of Sudbury  
Department of Public Works Building  
275 Old Lancaster Road  
Sudbury, MA 01776

Simpson Gumpertz & Heger Inc.  
41 Seyon Street  
Building 1, Suite 500  
Waltham, MA 02453  
SGH Project 130447

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**1.0 SCOPE OF WORK**

**1.1 Mockups**

- A. For all repairs listed below, unless otherwise specified, prepare one full-sized mockup for inspection and water testing by the Owner's representative. Mockup shall demonstrate transition of all materials. If approved, the mockups may remain on the building as part of the permanent construction. Reconstruct or modify mockup as many times as required to provide a watertight system and obtain approval from the Owner's representation.

**1.2 Exterior Insulating Finish System (EIFS)**

- A. Remove and dispose of existing EIFS system around the exterior of the Atkinson Pool down to the CMU backup wall.
- B. Repoint any exposed cracked or otherwise deteriorated mortar joints in the CMU backup wall
- C. Install metal flashing as shown in included sketches
- D. Install water resistive barrier and associated flashings for a fully drained EIFS system.
- E. Install drainage material and 2 in. rigid insulation for a fully drained EIFS system.
- F. Install fabric reinforcement and base coat.
- G. Install expansion sealant joints.
- H. Install EIFS finish coat

**1.3 Concrete Masonry Unit (CMU) Repointing**

- A. Repoint all cracked and otherwise deteriorated exterior mortar joints.

#### 1.4 Sealant Joints

- A. Remove existing polyurethane sealant joint and open-cell backer rod at all CMU expansion joints.
- B. Clean and prepare CMU substrate for sealant joint installation, including any primer recommended by sealant manufacturer.
- C. Install closed-cell backer rod and silicone sealant into expansion joint as shown in attached sketches.

#### 2.0 PRODUCTS

##### 2.1 Exterior Insulating Finish System (EIFS)

- A. Drainable EIFS cladding system: Provide a complete, drainable, exterior insulation and finish system (drainable EIFS). Obtain materials from the same manufacturer and as required by the EIFS manufacturer to provide a complete warrantable system.
  - 1. Basis of Design: StoTherm Classic NEXt by Sto. Corp.
    - a. Alternate approved System Manufacturers:
      - (1) Dryvit
      - (2) Synergy by BASF
  - 2. Air/Moisture Barrier: Sto Gold Coat ready mixed waterproof coating for wall substrates and sheathing or as approved by manufacturer.
  - 3. EIFS Adhesive: Sto BTS Plus one component polymer-modified, cement based high build adhesive or as approved by manufacturer
  - 4. EPS Insulation Board: Polystyrene, ASTM C578, extruded or expanded type; minimum average density 1.5 pcf; thickness to match existing EIFS insulation, hot wire cut to special shapes indicated, maintaining tolerances necessary to achieve tolerances specified for finished installation.
  - 5. EIFS Base Coat: Sto RFP one component non-cementitious, fiber reinforced acrylic base coat.
  - 6. EIFS Reinforcing Mesh:
    - a. All Areas
      - (1) Sto Mesh, 4.5 oz per square yard, symmetrical, interlaced open-weave glass fiber fabric made with alkalkine resistant coating for compatibility with Sto materials.

- b. Southwest Elevation (adjacent to playground)
  - (1) Sto Armor Mat 15 oz per square yard, ultra high impact, double strand, interwoven, open-weave glass fiber fabric with alkaline resistant coating for compatibility with Sto materials. Install Sto Armor Mat below Sto Mesh.
- 7. EIFS Primer: Sto Primer
- 8. EIFS Finish Coat: Stolit – Acrylic-based textured wall coating. Color to match existing or as approved by Owner.
- B. Sheet Metal Flashing: 24 ga stainless AISI Type 304 steel sheet metal with 2D finish.
  - 1. Solder: ASTM B32, Class 50A or 50B, Bar Form, 50% block tin and 50% pig lead or 60% block tin and 40% pig lead.
  - 2. Flux: Conforming to ASTM B 813. Clean metal immediately after soldering to ensure that no acid remains on the metal.
  - 3. Rivets for sheet metal connections: Solid stainless steel 3/16 in. dia. Flat head rivets of proper length for the material being fastened.

## 2.2 Concrete Masonry Unit (CMU) Repointing

- A. Water: Potable.
- B. Sand: ASTM C144, fineness modulus 2.0 to 2.5.
- C. Hydrated Lime: ASTM C 207, Type "S" (Type SA/air entrained is not permitted)
- D. Portland Cement: ASTM C 150, Type I (white, non-staining), low alkali (equivalent alkalis less than 0.6%). The use of "masonry cement" is prohibited.
  - 1. Mortar Pigment: Use integral coloring material consisting of inert, nonfading, finely ground, alkali-fast mineral oxides, meeting ASTM C979. Limit coloring additive to 10% by weight of cementitious material.
  - 2. Mortar color to match existing or as selected and approved by the Owner.
- E. Mortar: ASTM C 270, Type N. Proportions by volume 1:1:6 (portland cement: hydrated lime: mason's sand). Do not use ground limestone or prepared masonry mortar mixes. Use the same brands of cement and lime, and the same source of sand throughout the project, for each mix. Do not use chlorides or any admixture without written approval by the Engineer.

## 2.3 Sealant Joints

- A. Sealant and Primer for Joints:

1. 790 Silicone Building Sealant by Dow Corning, color selected by the Owner. Dow Corning 1200 Primer or primer as recommended by Dow Corning.
- B. Sealant Backer Rod: Closed-cell nongassing polyethylene foam rod, "HBR" by Nomaco. The diameter of the rod is to be 25% in excess of joint width. Surface skin of the rod shall be continuous and unbroken to preclude outgassing and formation of voids in the overlying sealant.
- C. Joint Cleaner: Isopropyl alcohol, Xylene, or as recommended by sealant manufacturer and as approved in jobsite adhesion tests.

### 3.0 EXECUTION

#### 3.1 EIFS Demolition and Installation

- A. EIFS workmanship is to comply with all applicable recommendations provided by EIMA, details and recommendations provided by the manufacturer, and as prescribed in these Specifications. Do not proceed with EIFS installation until all associated backup waterproofing and flashings are installed. Coordinate work to incorporate all upturned legs and ends of flashing into EIFS work.
- B. Mix all EIFS components according to manufacturer's recommended quantities, proportions, consistencies, and mixing times.
- C. "Back wrap" all insulation board edges with detail mesh at bases of walls and at all EIFS terminations. Mesh must be wide enough to adhere a 4 in. strip of mesh to the back of insulation board, fully wrap board edge, and extend a min. 4 in. onto the exterior face of the insulation board. Installation of Metal Lath at Areas of Drainable EIFS:
- D. Adhesive Application and Insulation Board Installation
  1. Bridge joints substrate by a min. of 8 in. Interlock insulation board at all inside and outside corners. Cut insulation board in an L-shaped pattern to fit snugly around openings – do not align board joints with corners of openings.
  2. Butt all board joints tightly; holidays are not allowed. Prevent adhesive from entering board joints. Fill any open joints solid with slivers of insulation board.
  3. After insulation boards are firmly adhered to substrate, rasp surface to remove any residue or damage due to ultraviolet ray exposure.
- E. Installation of Base Coat and Reinforcing Mesh
  1. At corners of all penetrations in EIFS, install min. 9 in. x 12 in. diagonal strips of detail mesh. Embed strips in wet base coat adhesive and trowel from center to edges to avoid wrinkles in the mesh.

2. Apply base coat over insulation board to a thickness of approximately 1/8 in., or thick enough to fully embed mesh. Work horizontally or vertically in strips of 40 in. and immediately embed mesh in wet base coat by troweling from center to edge of mesh. Allow base coat to dry. Mesh must be fully embedded in base coat so that mesh color is not visible. Re-skim with additional base coat if mesh color is visible.
3. Complete back wrapping procedure by applying base coat to exposed board edges and 4 in. onto face of insulation board. Pull mesh tight around board edge and embed in base coat with stainless steel trowel. Use a corner trowel for clean, straight lines. Smooth any gaps or wrinkles in mesh.
4. Allow base coat to dry thoroughly before applying primer or finish.

F. Primer and Finish Coat Application

1. Apply primer evenly with brush, roller, or proper spray equipment over clean, dry, base coat. Allow primer to dry thoroughly before applying finish coat.
2. Apply finish directly over primed base coat or concrete by spraying or troweling with stainless steel trowel. Abide by the following general rules for finish coat application:
  - a. Avoid application in direct sunlight.
  - b. Apply in continuous application, and work to a wet edge or natural break in wall. Avoid cold joints in finish coat application, and do not install separate batches of finishes side-by-side.
  - c. Adjust schedule of work according to climatic conditions. Hot or dry conditions limit working time and accelerate drying; cool or damp conditions extend working time and retard drying. Protect finish coat from extreme temperatures, wind, dust, dirt, rain, freezing, or moisture of any kind.
  - d. Do not apply finish into or over sealant joints; apply to outside face of wall only. All sealant joints in EIFS are to be installed to base coat only.
  - e. Do not apply finish over irregular, unprepared, dirty, or unprimed surface.

3.2 CMU Repointing

- A. Masonry workmanship shall comply with all applicable recommendations of the Brick Industry Association (BIA). Report any damage to new or existing flashing within the work area to the Engineer and provide for repairs by appropriately skilled mechanics at no cost to the Owner.

- B. Conduct all masonry work in a neat and workmanlike manner to prevent staining any surface with mortar or other spills. Avoid dropping mortar on completed masonry work or other elements of the building. If mortar drops or spills, spot-clean immediately using a sponge and clean water.
- C. Hot Weather (above 90°F): Do not use mortar when masonry surface temperature is above 90°F. At air temperatures over 80°F, protect the mortar from direct sunlight and exposure to wind to prevent rapid evaporation of water in the mortar before, during and after installation.
- D. Mix mortar using sufficient quantity of water to ensure good workability in accordance with BIA recommendations. For each batch, measure cement and lime by volume or equivalent weight. Measure sand by weight or in calibrated containers, with allowance made for moisture content, bulking, and consolidation. Do not use shovel measurements. Mix by machine only for at least 3 min. but not more than 5 min. Use mortar within 2 hrs of mixing at temperatures over 74°F, and 2-1/2 hours at temperatures between 50°F and 74°F. Do not re-temper mortar; discard hardening mortar.
- E. Where required, cut masonry with a motor driven saw to obtain true, even, and undamaged edges.
- F. Strike exterior of mortar joints flush during laying. When mortar is thumbprint hard on exposed surfaces, tool joints concave with a cylindrical pointing tool slightly larger than the masonry joint to compact the mortar thoroughly.
- G. Unless shown otherwise on drawings, place weep baffles horizontally in bed joints immediately above flashing at no more than 24 in. on center and at low spots on the metal flashings.
- H. Clean all masonry work promptly after curing by wetting surfaces and washing with a stiff bristle brush to produce a clean and unmarred appearance. Begin cleaning with clean water only, without chemical cleaners. If water alone with a scrub brush is not successful, as determined by the Engineer, use an approved cleaning compound. Dilute the compound with the maximum amount of water that will allow proper cleaning, as approved by the Engineer.

### 3.3 Sealant Joint Installation

- A. General Sealant Joint Construction:
  1. All sealant joints shall contain backer rod as shown on the Drawings. Avoid three-sided adhesion in all joints.
  2. Centerline depth of butt joints shall be one-half of joint width, with minimum depth of 1/4 in. and maximum depth of 1/2 in.
  3. Use an appropriate removable tape to protect all adjacent surfaces from staining or errant sealant application.
- B. Sealant Substrate Preparation:

1. Grind all masonry surfaces to remove all remnants of existing polyurethane sealants.
2. Remove all dirt or other foreign substances, including existing sealant, from substrates to receive sealant. All substrates shall be dry before preparation begins. Solvent clean substrates immediately before insertion of the final backer rod or bond breaker.
3. Solvent Cleaning: Use two clean, white, lint-free cloths to solvent clean. Pump solvent onto the first cloth and wipe substrate vigorously. Do not dip cloth into solvent to avoid contamination of the solvent. Use second cloth to clean substrate before solvent evaporates. Repeat this two-cloth procedure until substrate does not discolor cloth and repeat at least once. Allow solvent to evaporate from substrates before continuing.

C. Backup Material Installation:

1. Install clean and dry backer rod, release tape, or compressible filler into joint openings against dry solvent-cleaned substrates. Remove all wet materials from the jobsite. Replace any backer rod not sealed over by the end of the day and solvent clean the surface again.
2. Inspect the surface of the backer rod for any punctures before sealant installation. Remove any rod containing punctures. Do not rupture the skin of the closed-cell backer rod during installation. Remove any rod punctured during installation.
3. Place the rod and release tape so that the sealant shape will meet the shape requirements of this Section and as shown on the Drawings.
4. Use as long a piece of backer rod as possible. Change rod sizes as frequently as required by the variation in the joint width. Do not twist rods together. The diameter of the rod is to be 25% in excess of joint width. Butt ends of rods tightly. Provide a full range of backer rod and release tape sizes at the site of all sealant work.
5. Account for slight concave tooling of joints when setting backer rod depths. Do not touch with fingers or otherwise contaminate the substrates while inserting the backer rod.

D. Sealant-Joint-Primer Installation:

1. Do not install sealant until all surfaces to receive sealant have been cleaned and primed.
2. Prime all surfaces to receive sealant after backer rod, release tape, or compressible filler installation. Apply a thin coating with a clean cloth and allow to dry for at least 1 hr or as required by the manufacturer's approved instructions. Apply primer to clean, dry substrates at ambient temperatures above 40°F.

3. Mask all surfaces before priming. Apply primer with a clean brush. Do not allow primer on exposed surfaces beyond sealant.
4. Allow primer to dry. If the primed area turns milky white in color, remove primer with specified cleaner and reprime.
5. Do not allow primer to become wet or dirty before sealant application.

E. Sealant Joint Installation:

1. Inspect each cartridge or container of sealant before use and verify that the production date is within six months of the date of application. Remove from the site all sealant more than six months old. Each applicator shall understand the method of coding the production date on the cartridge.
2. Mask all exposed surfaces along joint before applying sealant.
3. Recheck backer rod and bond breaker tape positioning before applying sealant.
4. Apply sealant only to clean, dry, primed surfaces at ambient temperatures above 40°F. Seal joints within 10 hrs of primer application.
5. Fill all joints solidly and continuously with sealant, neatly applied with a standard caulking gun in a continuous motion, using a slight pressure. Push the sealant bead ahead of the nozzle; do not drag the nozzle.
6. Within 5 min. of sealant application and before skin develops on sealant, dry tool the joint surface with a concave tool to ensure intimate contact with substrate and to eliminate air bubbles. Do not use any liquid for tooling. Provide a smooth, uniform finished surface.
7. Remove masking within 10 min. of tooling. Avoid contaminating adjacent surfaces with excess sealant. Remove all traces of smears and droppings on metal or glass surfaces promptly, using a solvent that is recommended by the sealant manufacturer and that will not damage or discolor the building surfaces. Remove smears and droppings on porous surfaces by mechanical means after the initial cure of the sealant.
8. Coordinate work with other trades to prevent contamination of fresh sealant by dust or other debris.

### 3.4 Sheet Metal Flashing Workmanship

- A. Completed metal shall be straight, flat, and without buckles, dents, scratches, or other blemishes.
- B. Form sheet metal on a bending break. Perform shaping, trimming, and hand seaming in the shop as far as practicable, with the proper sheet-metal-working tools. Make the angle of the bends and the folds for interlocking the metal with



full regard for expansion and contraction to avoid buckling or other deformation in service. All lines shall be straight and crisp except where thickness of metal dictates radius bend, and all exposed edges shall be hemmed 1/2 in. minimum.

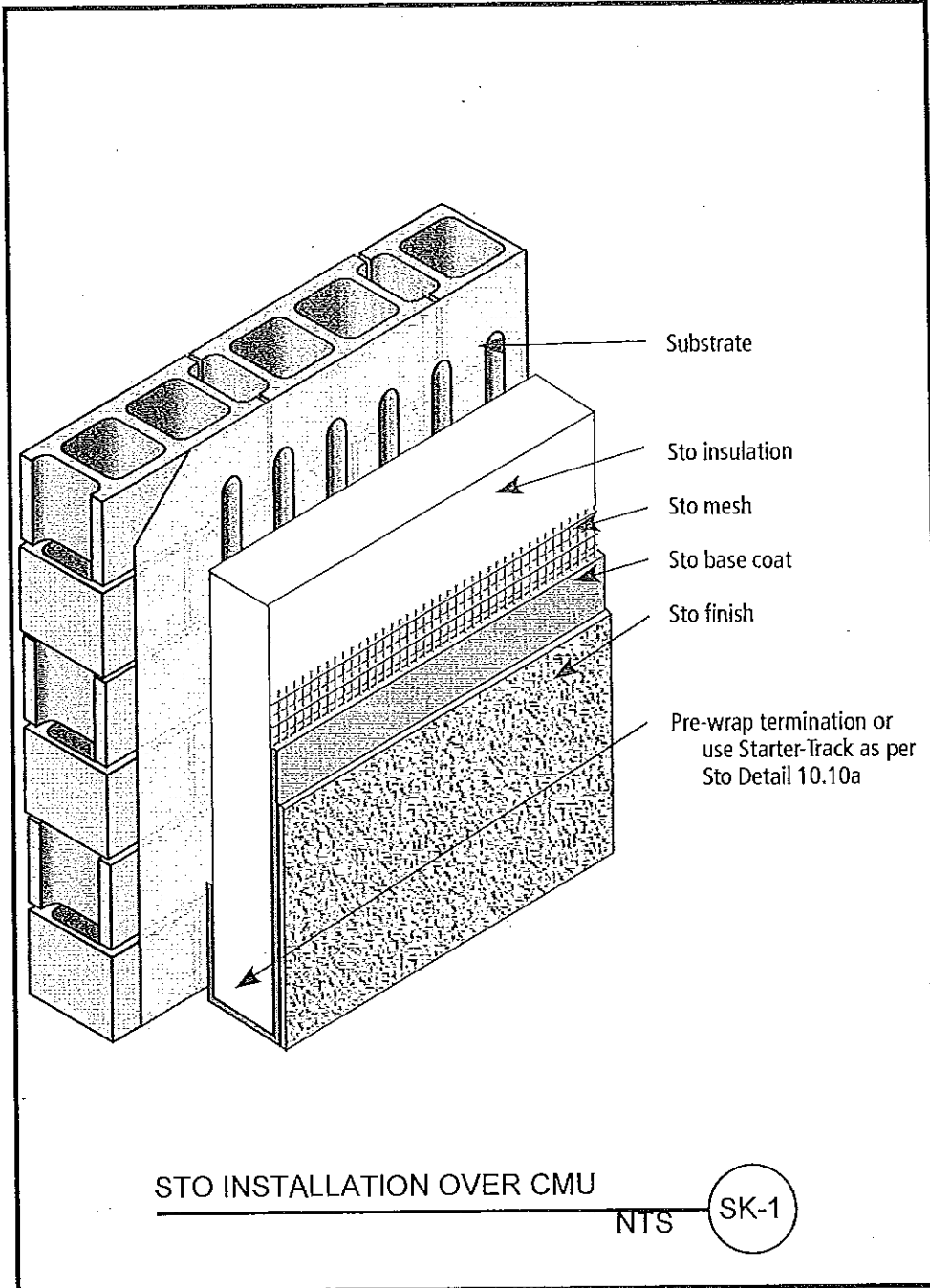
- C. Immediately before soldering, mechanically clean all metal to be soldered with steel wool or by other acceptable means, apply flux, and pre-tin. Clean metal again if it is not soldered on the same work day. Perform all soldering slowly with well-heated heavy (10 lb) irons with properly tinned clean blunt tips. Do not use torches. Apply enough heat to sweat the solder completely through the full width of the seam. Close clinch lock seams gently with a block of wood and mallet; then flux and show at least one full inch of continuous and evenly flowed solder. Whenever possible, do all soldering in flat position. All sloped and vertical seams shall be laced and soldered a second time. Wipe and wash clean soldered joints to remove all traces of acid from the flux immediately after the joints are made.
- D. Reinforce all metal flashing corners as required; rivet and solder all flashing corners for permanently waterproof connections. Space rivets at 1 in. o.c. in staggered pattern unless otherwise indicated. After soldering, immediately remove all traces of acid or flux with an appropriate neutralizer, followed by repeated washing and scrubbing.
- E. Lay out metal flashing to minimize transverse joints. Detail transverse joints in all flashing pieces to provide a watertight connection, and allow for expansion/contraction of the metal. Provide prefabricated corner pieces with joints locked, riveted, and soldered watertight. Space rivets at 1 in. o.c. in staggered pattern unless otherwise indicated.
- F. Unless specified otherwise, provide expansion joints at 20 ft o.c. maximum and 2 ft away from all changes in flashing direction (each side) and from all terminations of flashing. Space expansion joints in flashing appropriately to ensure that there are no expansion joints directly in front of windows.
- G. Form typical flashing joints by overlapping 4 in. and soldering.
- H. Integrate all metal flashings with waterproofing systems.
- I. Flashing Splice Installation:
  - 1. Lap all metal through-wall flashing at least 6 in. at transverse expansion joints, and apply strip flashing and metal cover plate as shown on the details. Apply release tape, centered over exposed edge of joint, and adhere strip flashing over joint as follows:
    - a. Cut and position strip flashing sheets in place. Inspect sheet for any discontinuities or deficiencies; do not use defective sheets.
    - b. Apply release tape over all joints and edges of the flashing covered by adhered neoprene sheet.
    - c. Clean all metal surfaces to receive strip flashing with clean, lint-free rags. Wet one rag with solvent and wipe surface. Use

second rag to clean surface before solvent evaporates. Pump solvent from cans onto first rag. Do not dip rag into solvent to avoid contamination of solvent. Allow to dry.

- d. Prime all substrates to which strip flashing is to be adhered with appropriate primer, and allow primer to dry. Recoat primed areas not covered by strip flashing within 12 hrs.
- e. Brush apply a full continuous coat of adhesive without holidays to the substrate and the sheet, using circular motion; roller application is not allowed. Allow adhesives to dry until tacky. Do not exceed maximum "open time" recommended by the manufacturer, or 12 hrs. Do not use, and remove from the site, all strip flashing that has been coated with adhesive and allowed to exceed the maximum "open time" or exposed for more than 12 hrs, or that has been exposed to any moisture before being applied to the substrate, or that has partially or fully cured. Do not expose adhesive coated substrate to any moisture, or to air for more than 12 hrs. Protect adhesive from airborne dust and debris while drying.
- f. Once the adhesive is dry, lay sheets into it promptly. Do not move or reposition sheets once they have contacted the adhesive. Immediately roll entire sheet into firm contact with the substrate using a smooth metal roller. Form sheets tightly into bends in flashing without stretching or cutting sheet.
- g. After 1 hr, continuously caulk all edges of strip flashing with lap sealant and tool out over edges. Apply release tape overlap sealant and install metal cover plate.

CLIENT Mr. James Kelly; Town of Sudbury  
SUBJECT Atkinson Pool; Fairbank Community Center

SHEET NO. 1 of 3  
PROJECT NO. 130447  
DATE 6 June 2013  
BY DWF  
CHECKED BY FJS



**Notes:**

Detail shows the components of StoTherm NEXt<sup>®</sup> installed over a CMU substrate:

- 1) StoGuard™ Moisture and Air Barrier installed as per Sto Detail 20.01G or 20.02G and Sto Specification.
- 2) Sto adhesive
- 3) Sto insulation
- 4) Sto base coat
- 5) Sto mesh
- 6) Sto finish

**Attention**

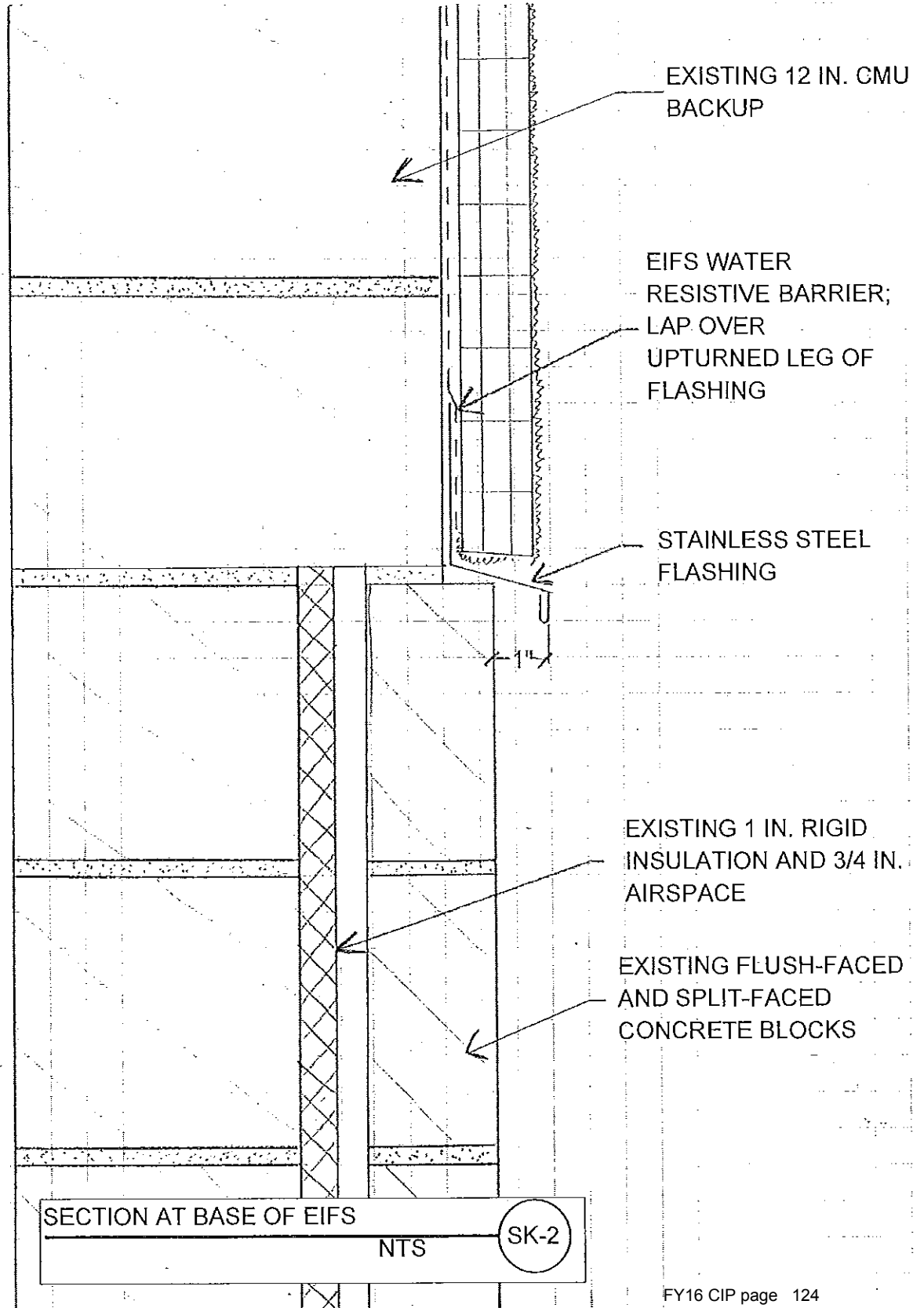
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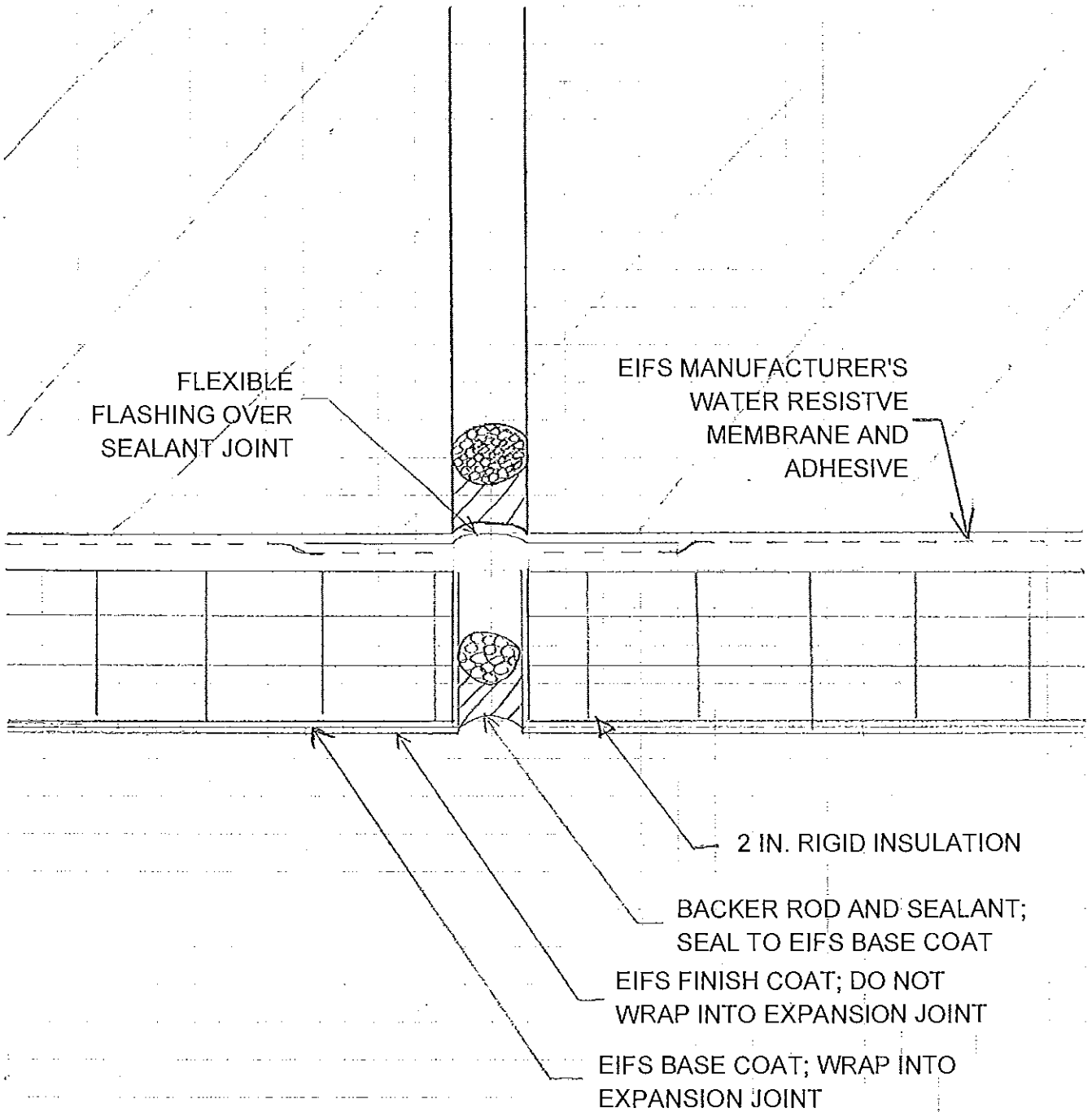
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PLAN AT BUILDING EXPANSION JOINT  
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