



**To:** Dr. Mike Riggle  
Board of Education

**From:** Kimberly Ptak

**Date:** Monday, October 23, 2017

**Re:** Approval of Summer 2018 Life Safety Projects

### **Recommendations**

It is recommended that the Board of Education:

1. Authorize the District architect, ARCON & Associates, to begin developing bid specifications for the recommended Summer 2018 Life Safety Projects..
2. Authorize the administration to submit a life safety amendment to the State of Illinois to add the GBN tennis court replacement and GBS pool boiler replacement to the overall Life Safety scope of work.
3. Authorize the administration to schedule a public hearing on November 13, 2017 to seek public input on the possible inclusion of the GBN tennis courts on the Life Safety list as required by state code.

### **Background**

Every ten years, public school districts in the State of Illinois, are required to have a Life Safety survey completed by a licensed architect. The survey identifies Life Safety code concerns throughout the buildings. Items identified can be safety related, such as an egress or aging fire detection devices or may be critical components of the building infrastructure such as roofing, mechanical systems, carpeting and bleachers that are at, or approaching, the end of their life cycle and, if not replaced, could impact the health and/or safety of the occupants.

In order to use Life Safety funds, through a bond issuance, to pay for Life Safety projects a Life Safety amendment must be filed with the State of Illinois. At the June 25, 2016 regular meeting, the Board approved submitting a \$15M Life Safety amendment to the State of Illinois; the original list is attached. The amendment identifies building infrastructure needs and safety concerns and the state approved projects must be completed within three years (Summers of 2017, 2018 and 2019) in order to be funded by Life Safety bond proceeds.

Additional, Life Safety projects can be added to the state list of approved projects via an amendment. The list of projects originally submitted to the state for approval were targeted to not exceed the overall Life Safety bond proceeds procured during the 2015-2016 school year. The actual bond proceeds exceeded the original estimate and the actual cost of the 2017 projects was less than anticipated, which allows the District to pursue additional items from an amended list.



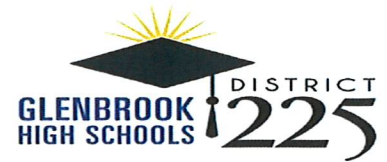
Following is a summary to-date of revenue and actual/estimated expenditures.

<b>Revenue</b>			
Description	Initial Estimate (6/21/2016)	Actual (10/10/2017)	Difference
Life Safety Bond Proceeds	\$15,000,000	\$15,171,718	\$171,718
Interest Earned to-date	\$0	\$46,222	\$46,222
<b>Revenue Totals</b>	<b>\$15,000,000</b>	<b>\$15,217,940</b>	<b>\$217,940</b>

<b>Expenditures</b>			
Description	Initial Estimate Document Attached (6/21/2016)	Actual or Updated Estimate (10/10/2017)	Difference
Summer 2017 Life Safety Projects			
Cost of Projects	\$5,549,000	\$5,459,313	\$89,687
Architect Fee (7.5%)	\$416,175	\$409,448	\$6,727
Construction Mgmt Fee (7.5%)	\$416,175	\$409,448	\$6,727
Contingency (2%)	<u>\$110,980</u>	<u>\$0</u>	<u>\$110,980</u>
Total Cost	\$6,492,330	\$6,278,209	\$214,121
Summer 2018 Life Safety Projects			
Cost of Projects	\$4,592,000	\$5,315,000	(\$723,000)*
Architect Fee (7.5%)	\$344,400	\$398,625	(\$54,225)
Construction Mgmt Fee (7.5%)	\$344,400	\$398,625	(\$54,225)
Contingency (2%)	<u>\$91,840</u>	<u>\$106,300</u>	<u>(\$14,460)</u>
Total Cost	\$5,372,640	\$6,218,550	(\$845,910)
Summer 2019 Life Safety Projects			
Cost of Projects	\$2,215,000	\$2,215,000	\$0
Architect Fee (7.5%)	\$166,125	\$166,125	\$0
Construction Mgmt Fee (7.5%)	\$166,125	\$166,125	\$0
Contingency (2%)	\$44,300	\$44,300	\$0
Additional Reserve	<u>\$543,480**</u>	<u>\$0</u>	<u>\$543,480</u>
Total Cost	\$3,135,030	\$2,591,550	\$543,480
<b>Expenditure Totals</b>	<b>\$15,000,000</b>	<b>\$15,088,309</b>	<b>(\$88,309)</b>
<b>Excess Reserve</b>			<b>\$129,631</b>

\*two additional life safety projects are being recommended that are not on the original life safety list - GBN tennis court replacement and the replacement of two GBS pool boilers.

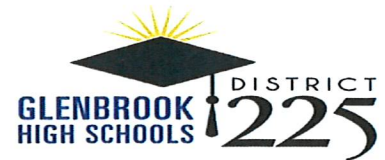
\*\*typically a 2% contingency is budgeted. Since the scope of the work was not defined at the time the life safety survey was submitted, additional contingency was built in.



## Summer 2018 Recommended Life Safety Projects

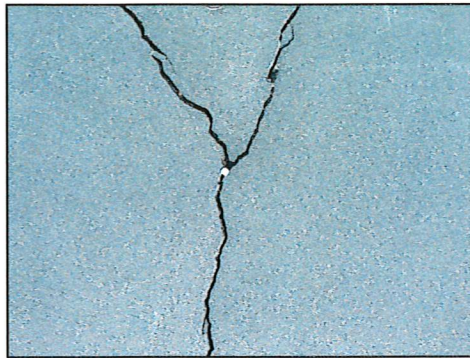
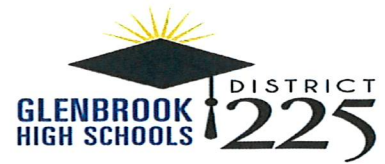
The projects listed below, with the exception of the GBN tennis courts and GBS pool boilers have been reviewed by the Board of Education and submitted on the Life Safety amendment filed with the State. The GBN tennis courts and GBS pool boilers have been added and an addendum will need to be filed. Since the tennis courts are an outdoor facility unattached to the school building, the District is required by state code to conduct a public hearing to gain public input prior to submitting them to the State as part of an amended list. These projects can be funded with the overall Life Safety bond proceeds. Attached are maps of GBN and GBS showing the location of the various life safety projects recommended for the summer of 2018.

<b>Roofing</b>		
<b>Project</b>	<b>Description</b>	<b>Estimate</b>
GBS Fieldhouse Roof Replacement	The Fieldhouse roof system at GBS is 45,500 s.f. and was part of the new construction in 1989. The existing roof system has reached the end of its serviceable life and is experiencing a number of deficiencies typical for the age of this type of roof system. The proposed new roof system would consist of roof insulation with an R-value of 30.0 minimum and a multi-ply modified bitumen built-up roof membrane with gravel surfacing. The life expectancy of the new roof is 30+ years.	\$1,100,000
GBS Weight Room and Student Activity Corridor Roof Replacement	The Weight Room roof system at GBS is 4,650 s.f. and was last replaced in 1989. The Student Activity Corridor roof system at GBS is 8,700 sq.ft. and was last replaced in 1994. Both existing roof systems have reached the end of their serviceable life and are experiencing a number of deficiencies typical for the age of this type of roof system. The proposed new roof systems would consist of roof insulation with an R-value of 30.0 minimum and a multi-ply modified bitumen built-up roof membrane with gravel surfacing. The life expectancy of the new roofs is 30+ years.	\$425,000
		<b>\$1,525,000</b>

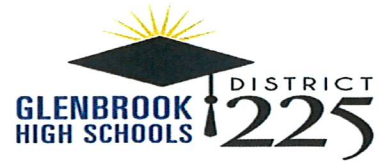


<b>Architectural (flooring, structure, tennis courts)</b>		
<b>Project</b>	<b>Description</b>	<b>Estimate</b>
GBN Floor Replacement, Painting and Lighting (4) Back Gyms	The wood flooring in each of the four back gyms at GBN were original to the building in 1957 and have reached the end of their useful lives. The floors will be replaced with a cushioned maple wood flooring system, similar to the main gym floors at GBN and GBS. The scope of this project also includes painting the ceilings & walls where the old HVAC equipment was removed during the summer 2017 work as well as an LED retrofit. Core samples of the existing floors were taken and a moisture prevention system is not needed.	\$480,000
GBS Address Slab Settling in Corridor West of Cafeteria ("State and Madison")	The existing concrete slab is showing signs of settlement, causing the carpet to tear which creates a tripping hazard. The scope of this project includes removing a 20'x20' section of concrete, adding a stone base and replacing with new concrete. New flooring will also be installed.	\$50,000
GBS Carpet Replacement/Asbestos Removal	There are several areas in the building with carpeting that is 20+ years old with asbestos underneath. This project will abate asbestos from the area and replace the carpeting.	\$380,000
GBN Flooring Replacement/Asbestos Removal	There are two areas in the building with flooring that is 20+ years old with asbestos underneath. This will abate asbestos from the area and replace the flooring.	\$80,000
GBN Tennis Court Replacement*	The GBN tennis courts were built in 1957 and have been resurfaced several times over the years. Additionally, the courts were overlaid with an asphalt slip sheet twice. There is significant cracking which allows water to enter and get trapped between the multiple layers of asphalt. The water freezes in the winter which causes the pavement surface to further crack and heave. The cracks have gotten significantly worse over the last winter and need to be replaced. The scope of work includes removing all existing asphalt and fencing, installing new asphalt surface, applying a new tennis surface coating, a new vinyl coated fence, new tennis posts and netting. Soil borings were taken and the subbase under the tennis court is adequate to support the new surface - no undercuts are necessary.	\$520,000
		<b>\$1,510,000</b>

\* These were not part of the original LS list and will need to be added via an amendment.



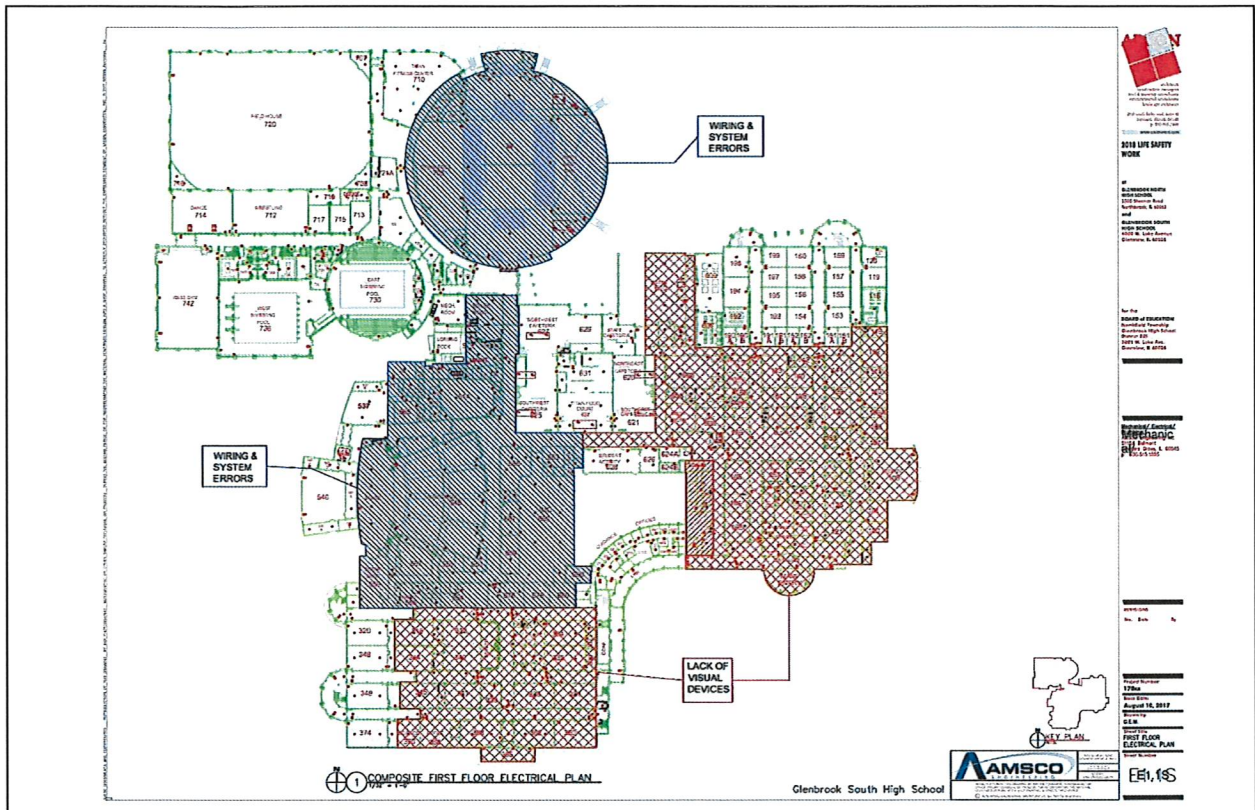
<b>Electrical</b>		
<b>Project</b>	<b>Description</b>	<b>Estimate</b>
GBS Replace 5 original transformers	There are 5 transformers located throughout the building's academic wing that are original to the building and in need of replacement. Several transformers are currently in poor locations and will be relocated.	\$160,000
GBS Rebuild Electrical Distribution System	Existing electrical distribution equipment is older and exceeds the six switch rule. This project is intended to will rebuild the distribution equipment and will include replacement of the main circuit breaker.	\$60,000
GBS Replace Main Electrical Switch	Electrical service has a Pringle main bolted pressure switch. These switches have a known failure to re-close after fault or manual opening. Replace bolted pressure switch with new 100% rated main circuit.	\$50,000
GBS Upgrade Fire Alarm System	The existing fire alarm system at GBS is a hybrid system - parts of the building are addressable, meaning if the fire alarm goes off the exact location is identified, and parts of the building are zoned, meaning if the fire alarm goes off, a zone, rather than an exact location, is identified. Additionally, there are several areas in the building without an AV indicator in every classroom. In order to convert the entire building to an addressable system and put AV indicators in every classroom, it is recommended the existing fire alarm system be replaced with a new mass notification system as required by the 2015 International Fire Code (IFC). The Illinois Board of Education officially adopted the 2015 IFC starting with any project under contract on or after July 1, 2016. The new system shall include speakers, speaker/visual, pull stations, smoke detectors, heat detectors, etc. which make up a fully functioning voice (digital message and microphone for authorized personnel) based fire alarm/alert system.	\$1,350,000
		<b>\$1,620,000</b>



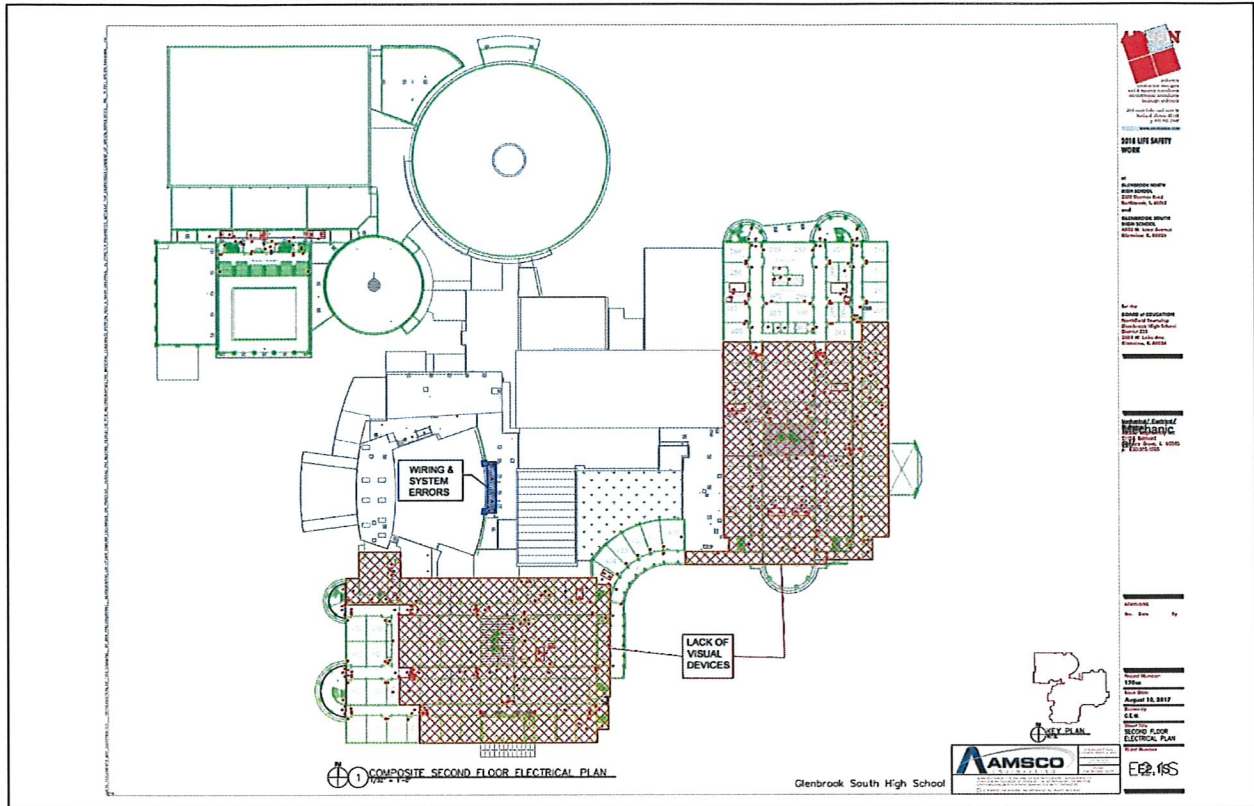
### GBS Fire Alarm Diagrams of Existing Condition

Blue: Wiring and System Errors, Zoned Areas  
Red: Lack of Audio/Visual Devices

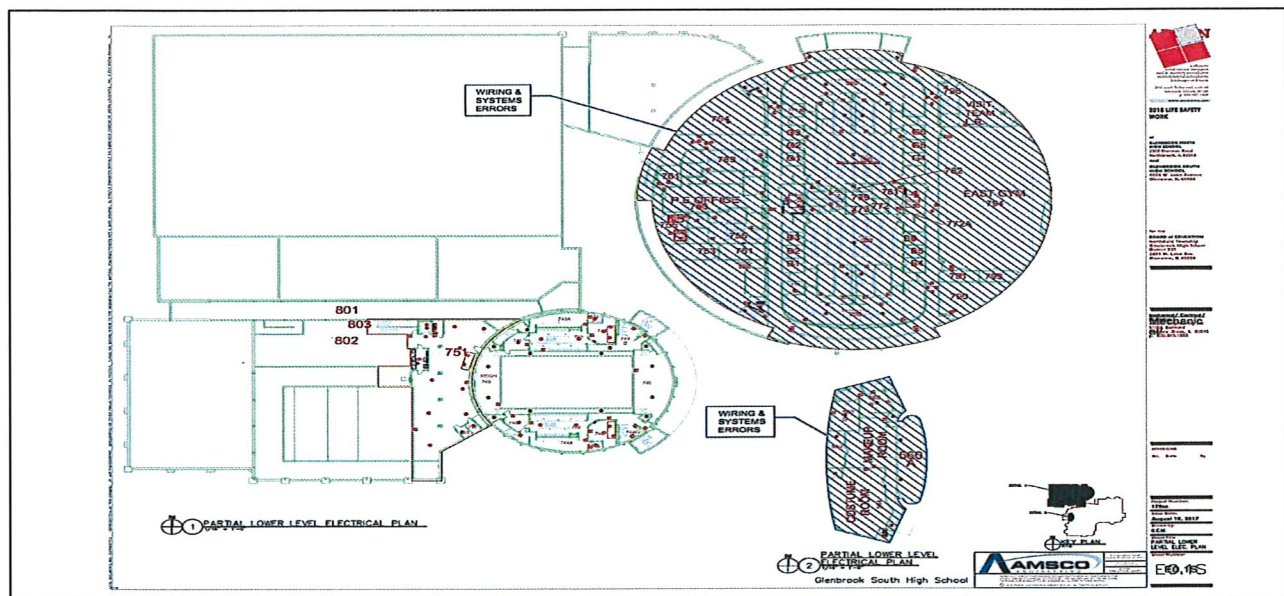
### GBS First Floor

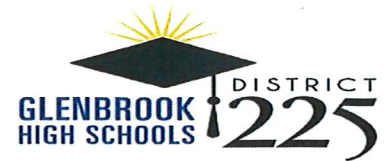


GBS Second Floor



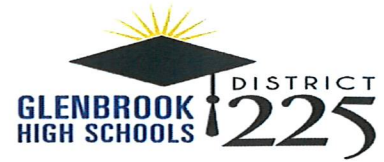
GBS Basement



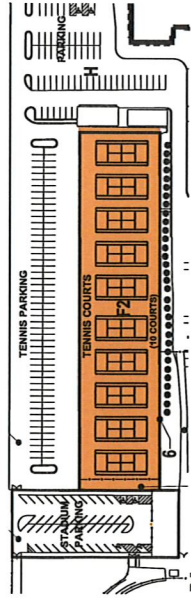


<b>Mechanical</b>		
<b>Project</b>	<b>Description</b>	<b>Estimate</b>
GBS hot Water Expansion Tank	In 2000, a new expansion tank system was installed as part of the boiler and chiller plant work. The system has been repaired several times over the years and is no longer maintaining consistent temperatures.	\$90,000
GBS Orchestra Pit Exhaust System	Due to dampness in the orchestra pit, an exhaust system is recommended to increase air flow in the pit to dry it out and reduce the chance of mold.	\$10,000
GBS Home Ec. Exhaust System	Currently, there is no exhaust system in the home economics room. This was cited during a recent ROE inspection.	\$15,000
GBS Auditorium Exhaust Grill	There is a sump pump for the sanitary line located in a closet in the basement of the auditorium that fills with sewer gas. An exhaust would relieve the smell which infiltrates into the auditorium. This project will add an exhaust grill to tie into the existing exhaust system.	\$15,000
GBS Dehumidification System Repair	The current Innovent system which provides dehumidification and temperature control in the natatorium is 8 years old and not working properly. Some of the refrigerant compressors and control valves have failed or leaked, resulting in a significant repair costs.	\$50,000
GBS Replace Pool Boilers*	The existing pool boilers were installed in 2007 and 2008. The boilers have been leaking and are approaching the end of their useful life. The pool heater being recommended has a separate heat exchanger so the chlorinated pool water does not circulate through the heater itself thus extending the life.	\$200,000
GBS Replace Rooftop Exhaust Fans	The existing rooftop exhaust fans are 30 years old and failing. The fans are required to maintain the proper static pressure in the fieldhouse along with the ventilation supply fans. Similar to the work done several years ago at GBN, intake louvers will be installed to draw in outside air and provide better ventilation.	\$70,000
* Note, these were not part of the original LS list and will need to be added via an amendment.		<b>\$450,000</b>



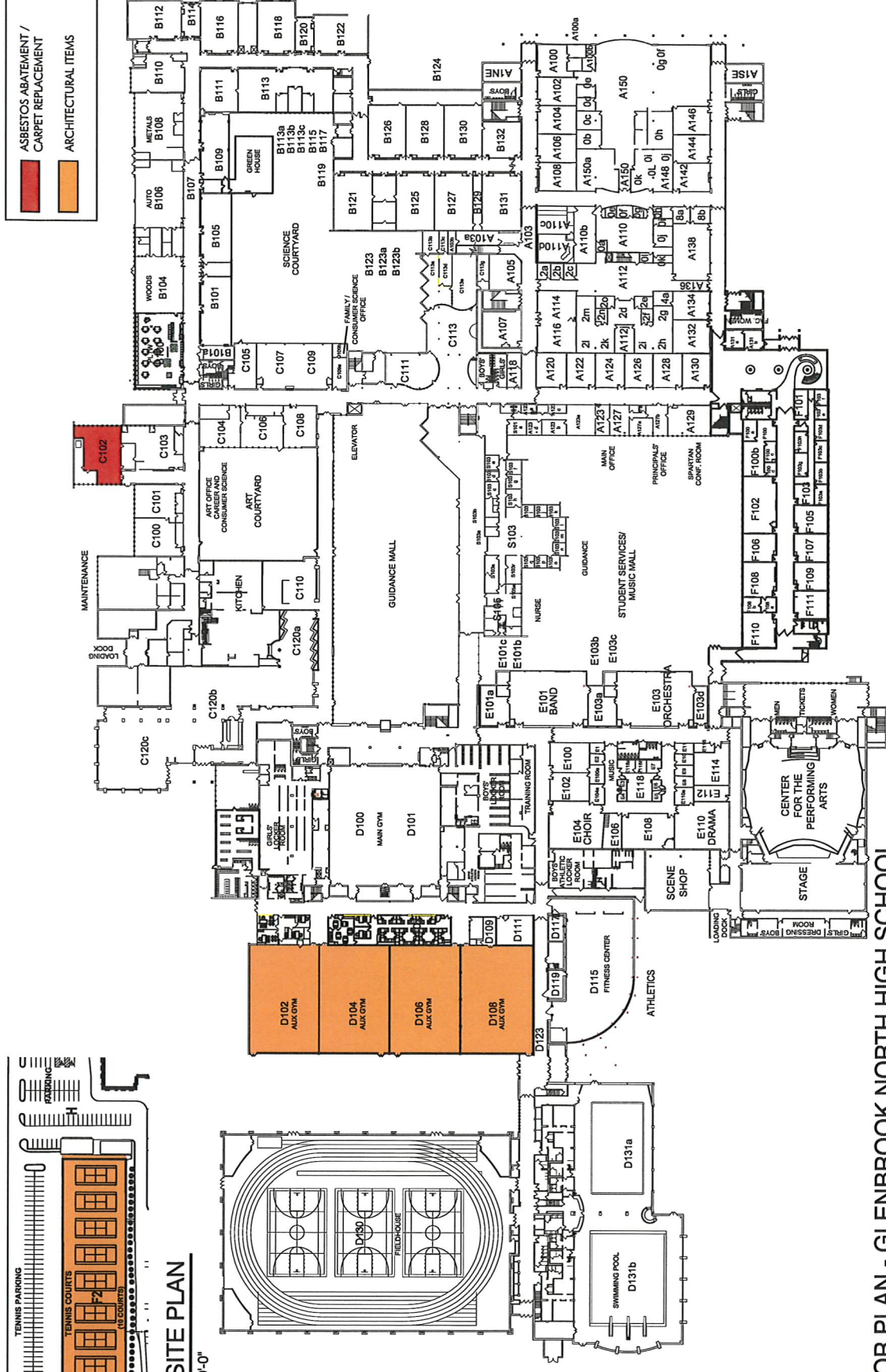


Plumbing		
Project	Description	Estimate
GBS Replace Old Pool Filtration System	The old pool filtration system is over 40 years old and in poor condition due to corrosion and age. The scope of this project is to replace the current high rate sand filter with a new version of a high rate sand filter and replace the existing surge tank.	\$210,000
		<b>\$210,000</b>
<b>Total of All Life Safety Summer 2018 Recommended Projects</b>		<b>\$5,315,000</b>



PARTIAL SITE PLAN

SCALE: 1" = 100'-0"



Glenbrook North High School - 2018 Life Safety Projects  
 Glenbrook High Schools District 225  
 Project No. 17044

September 20, 2017



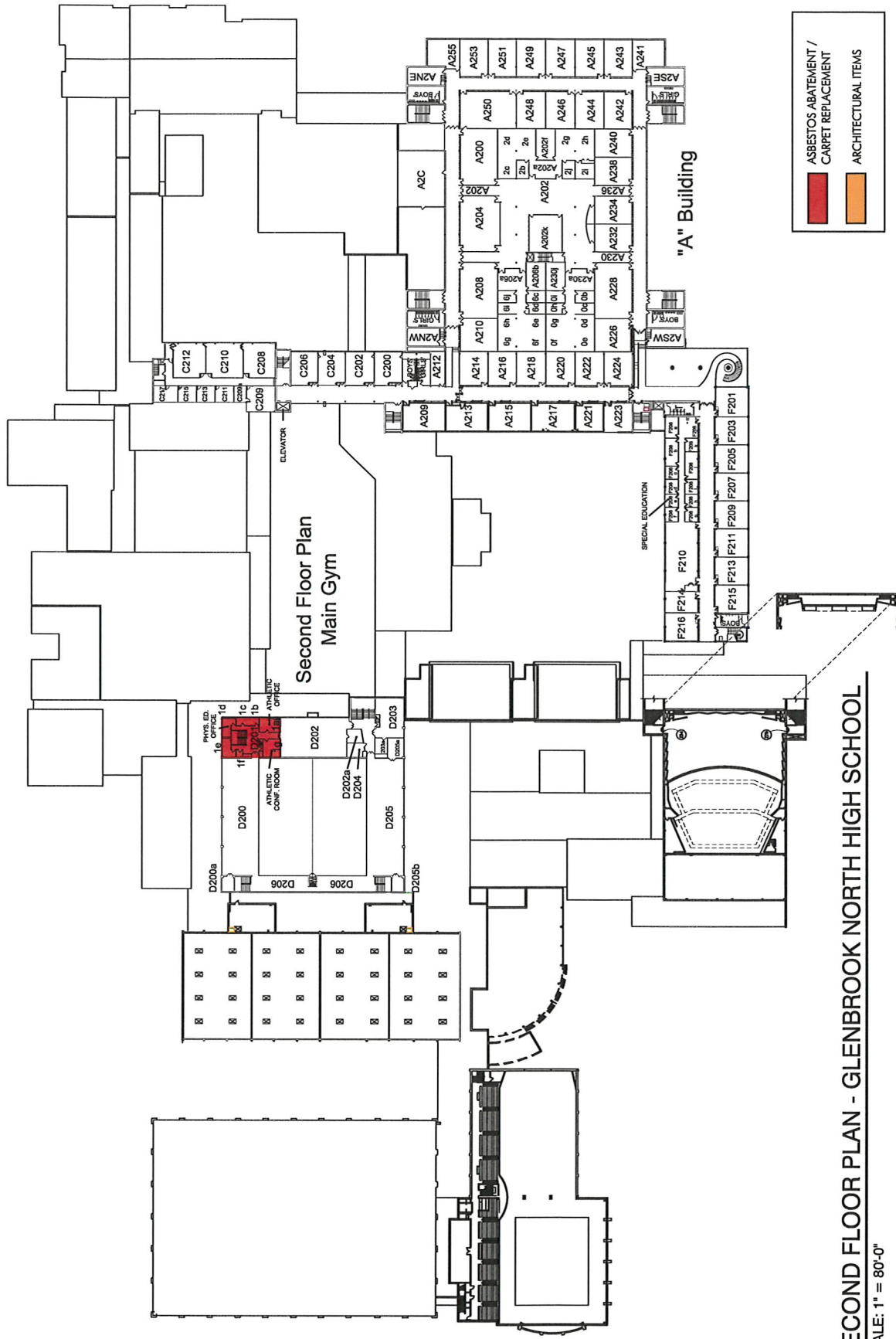
FIRST FLOOR PLAN - GLENBROOK NORTH HIGH SCHOOL

SCALE: 1" = 80'-0"





September 20, 2017

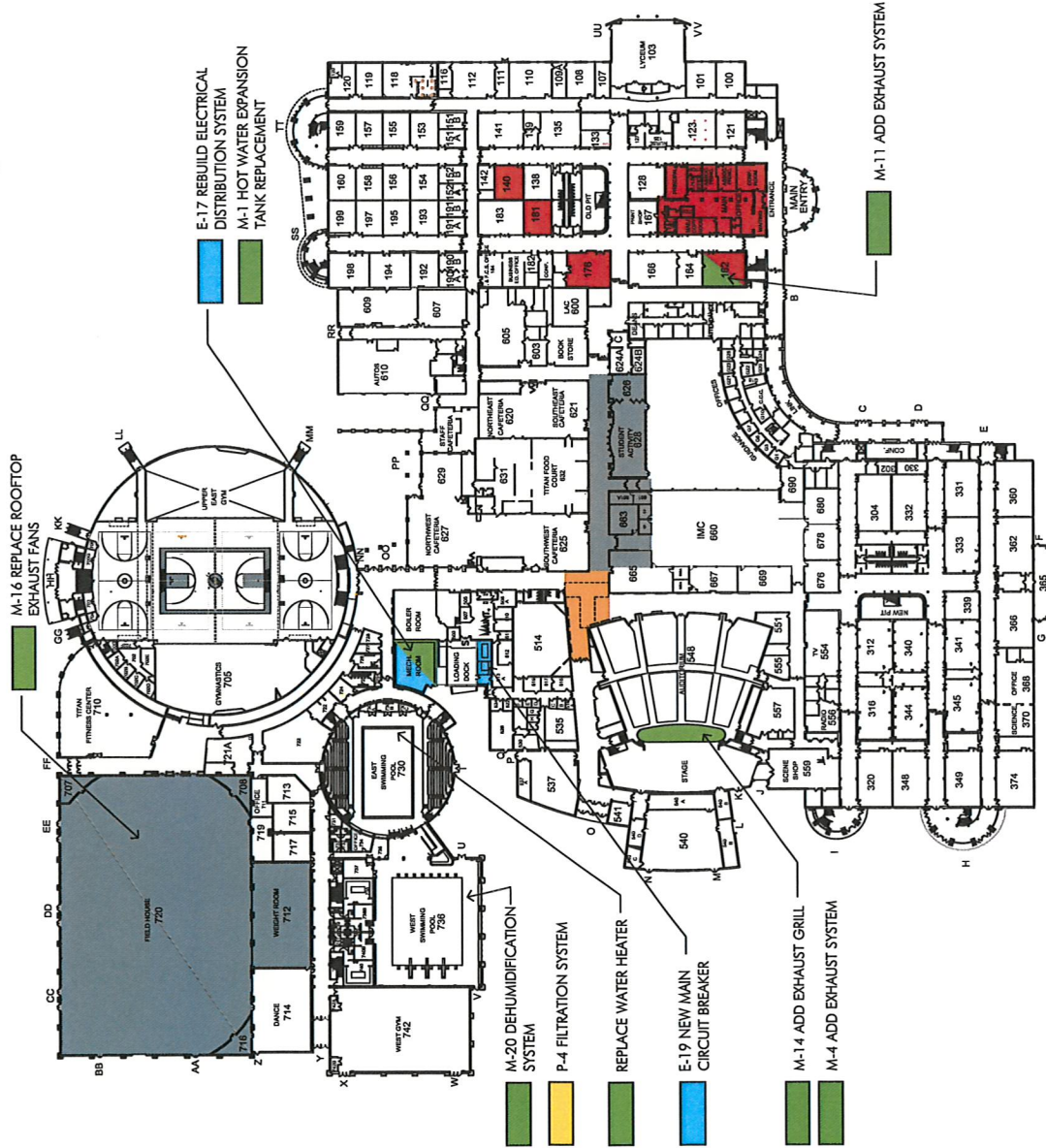


**SECOND FLOOR PLAN - GLENBROOK NORTH HIGH SCHOOL**  
 SCALE: 1" = 80'-0"

Glenbrook North High School - 2018 Life Safety Projects  
 Glenbrook High Schools District 225  
 Project No. 17044



	ASBESTOS ABATEMENT / CARPET REPLACEMENT
	ARCHITECTURAL ITEMS
	ROOFING REPLACEMENT
	ELECTRICAL ITEMS
	MECHANICAL ITEMS
	PLUMBING ITEMS



TYP. ITEMS THROUGHOUT BUILDING

	E-4 REPLACE TRANSFORMERS
	E-8-10 UPGRADE FIRE ALARM SYSTEM

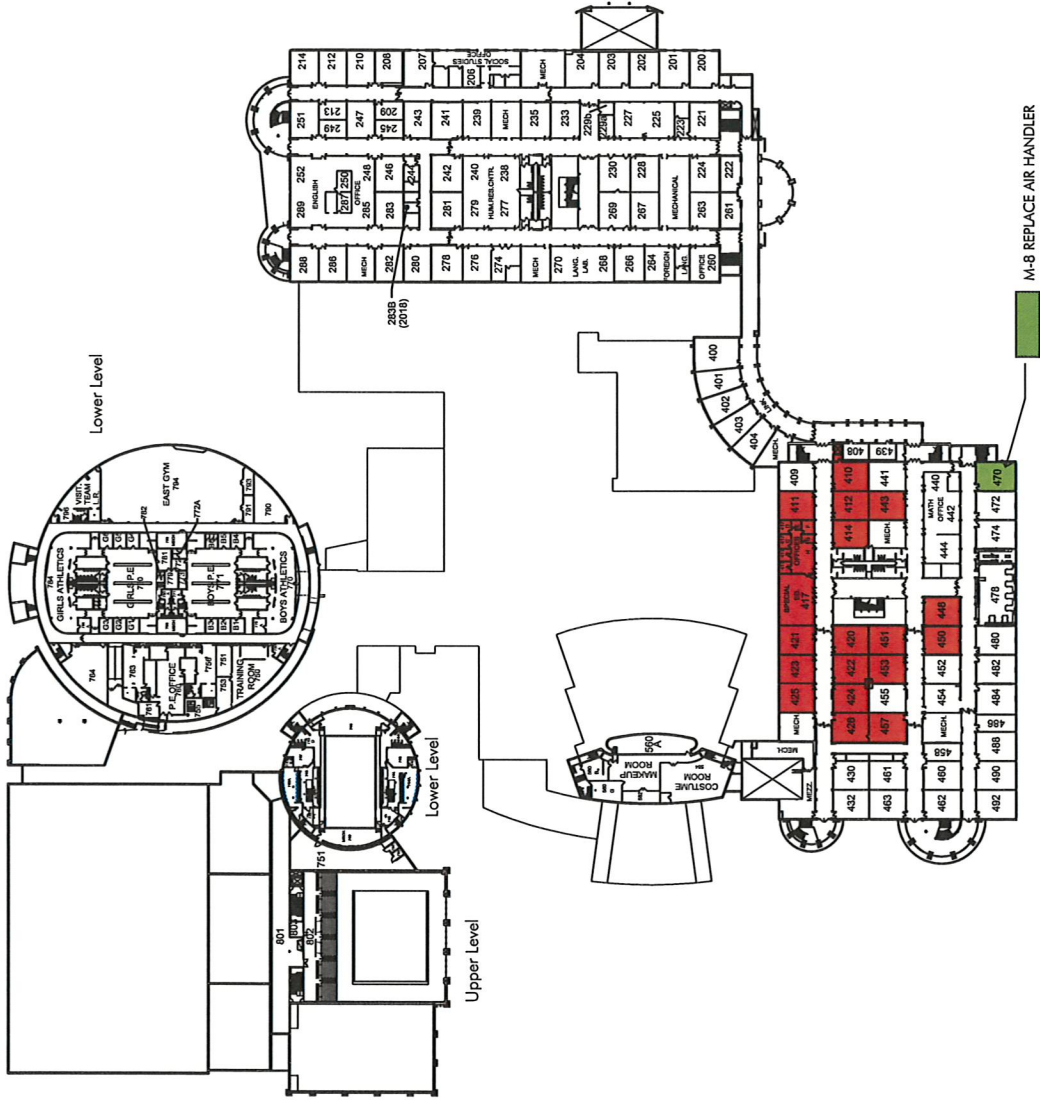
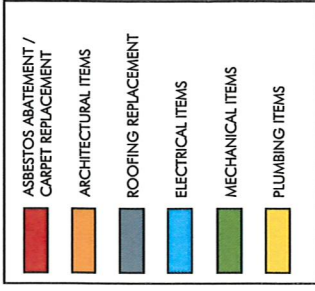
**N** FIRST FLOOR PLAN - GLENBROOK SOUTH HIGH SCHOOL  
 SCALE: 1" = 100'-0"



Glenbrook South High School - 2018 Life Safety Projects  
 Glenbrook High Schools District 225  
 Project No. 17044

September 20, 2017





**N** SECOND FLOOR PLAN - GLENBROOK SOUTH HIGH SCHOOL  
 SCALE: 1" = 100'-0"



Glenbrook South High School - 2018 Life Safety Projects  
 Glenbrook High Schools District 225  
 Project No. 17044

September 11, 2017



**Glenbrook High School District 225 - Life Safety Amendment - \$15M** submitted August, 2016

LS Code	School	Location	Description of the violation and recommended action	Cost Est. Total	Summer 2017	Summer 2018	Summer 2019
<b>Roofing</b>							
R-1	GBN	Training Room/Locker Room	The Training Room/Locker Room is 11,800 S.F. and was last replaced in 1993. The Guidance/Activity Corridor and the Activity Corridor are 13,500 S.F. and were last replaced in 1993. The CPA roof is 13,000 sf and last replaced in 1993. These roof areas have reached the end of their serviceable life. Roof replacement recommended.	\$1,330,000	\$1,330,000		
R-2	GBN	Guidance Activity Corridor	The Women's Locker Room is 5,600 S.F. and was last replaced in 1993. This roof area has reached the end of its serviceable life. Roof replacement recommended.	\$200,000	\$200,000		
R-3	GBN	CPA	The Fieldhouse is 42,000 S.F. and was part of new construction in 1989. The CPA House is 13,000 S.F. and was last replaced in 1993. These roof areas have reached the end of their serviceable life. Roof replacement recommended.				
R-4	GBN	Fieldhouse	The Fieldhouse is 42,000 S.F. and was part of new construction in 1989. This roof area has reached the end of its serviceable life. Roof replacement recommended.	\$1,050,000			\$1,050,000
R-4	GBN	Fieldhouse	The Fieldhouse is 45,500 S.F. and was part of new construction in 1989. This roof area has reached the end of its serviceable life. Roof replacement recommended.	\$1,320,000		\$1,320,000	
R-5		Weight Room Student Activity Corridor	The Weight Room is 4,600 S.F. and was last replaced in 1989. The Student Activity Corridor is 8,400 S.F. and was last replaced in 1994. Roof replacement recommended.	\$432,000		\$432,000	
				<b>\$4,332,000</b>	<b>\$1,530,000</b>	<b>\$1,752,000</b>	<b>\$1,050,000</b>
<b>Architectural</b>							
A-38		Auxiliary Gyms (4)	The flooring in the four back gyms at GBN is original to the building and has reached the end of its useful life. Gym floor replacement recommended.	\$400,000		\$400,000	
A-27		Main Gym	Flooring is original and has reached the end of its useful life. Gym floor replacement recommended.	\$585,000	\$585,000		
A-47		Main Gym	The bleachers in the main gym at GBS are original and in need of replacement. The recent bleacher inspection revealed that end rails, power operation wheels, connections and hardware warrant replacement. It is best to time this replacement with the replacement of the main gym floor. Bleacher replacement recommended.	\$350,000	\$350,000		
A-29		Lower Level Running Track	The lower level running track is original to the building and is cracking and deteriorating, which is creating a tripping hazard. The track is used for PE and athletic warm-ups. The existing floor contains mercury. Rather than tearing out the existing floor, abating and installing a new flooring system, it is recommended that the existing floor be encapsulated and overlaid with a new floor. Overlay and encapsulate existing floor with new floor is recommended.	\$55,000	\$55,000		
A-45		Corridor W of Cafeteria	The existing concrete slab is showing signs of settlement, causing the carpet to tear. This creates a tripping hazard. Recommendation under review.	\$50,000		\$50,000	
A-48		Various Areas	There are several areas in the building with carpeting that is 30+ years old and has asbestos underneath. This will abate the area and replace the carpeting in the remaining known 39 classrooms. Asbestos abatement and carpet replacement recommended.	\$500,000	\$160,000	\$340,000	
A-44		Various Areas	There are several areas in the building with carpeting that is 30+ years old and has asbestos underneath. This will abate the area and replace the carpeting. This will address of all remaining known asbestos under carpeted areas. Asbestos abatement and carpet replacement recommended.	\$244,000	\$164,000	\$80,000	
A-45		Various Areas	There are several areas in the building with ceilings that contain asbestos. This will abate the area and replace the ceiling. This will address the rest of the remaining known asbestos ceilings. Asbestos abatement and ceiling tile replacement recommended.	\$110,000	\$110,000		

**Glenbrook High School District 225 - Life Safety Amendment - \$15M** submitted August, 2016

LS Code	School	Location	Description of the violation and recommended action	Cost Est. Total	Summer 2017	Summer 2018	Summer 2019
A-57		Outside Track	The existing track is heaving due to an underground storm pipe. To correct this, sections of the pavement and flowable fill will be removed. Fill will be replaced with stone and pavement/track surface will be patched. Track repair and patching recommended.	\$60,000	\$60,000		
A-49		Girls Varsity Locker Room	A rated separation is required between a storage room and locker room. This project will install a rated wall to separate storage, to replace the existing metal gate. Fire rated separation wall between storage room and locker room recommended.	\$9,500	\$9,500		
A-06		Throughout Building	The windows at 1835 Landwehr Rd, the building used for Off Campus and Evening High School are original to the building. The windows leak air, water and are not energy efficient. Window replacement recommended.	\$130,000	\$130,000		
A-04		Various Areas	There are various doors that do not open without excessive force and/or do not latch without effort, resulting in egress concerns. Door and/or hardware replacement recommended.	\$25,000	\$25,000		
A-03		Various Areas	There are various doors that do not open without excessive force and/or do not latch without effort, resulting in egress concerns. This project replaces doors and/or hardware. Door and/or hardware replacement recommended.	\$25,000	\$25,000		
				<b>\$2,543,500</b>	<b>\$1,673,500</b>	<b>\$870,000</b>	<b>\$0</b>
<b>Electrical</b>							
E-3		Electrical Panels	It is an OSHA requirement to conduct an arc flash study of a workplace facility by a licensed engineer to determine the level of hazard & risk in relation to electrical systems. The arc flash hazard analysis calculation will be performed on all electrical panels to identify and label hazards as well as provide overall recommendations and required personal protective equipment. Arc flash study, analysis, labeling and report recommended.	\$60,000	\$60,000		
E-2		Electrical Panels	It is an OSHA requirement to conduct an arc flash study of a workplace facility by a licensed engineer to determine the level of hazard & risk in relation to electrical systems. The arc flash hazard analysis calculation will be performed on all electrical panels to identify and label hazards as well as provide overall recommendations and required personal protective equipment. Arc flash study, analysis, labeling and report recommended.	\$60,000	\$60,000		
E-4		Various Areas	Transformers located throughout the building's academic wing are original to the building, in a poor location (janitor's closet with water, etc.) Transformer replacement and relocation recommended.	\$160,000		\$160,000	
E-08		Various Areas	Furnish carbon monoxide detectors within 20 feet of any carbon monoxide emitting device. Connect to fire alarm system. This is a new state standard. Installation of carbon monoxide detectors tied into fire alarm system is recommended.	\$10,000	\$10,000		
E-12		Various Areas	Furnish carbon monoxide detectors within 20 feet of any carbon monoxide emitting device. Connect to fire alarm system. This is a new state standard. Installation of carbon monoxide detectors tied into fire alarm system is recommended.	\$10,000	\$10,000		
E-8		Auditorium Basement Fire Alarm	The auditorium and basement gymnasium has a subpanel that comes into conflict with the newer head-end installed in 2013. The fire alarm devices need to be changed out to correlate with the new head-end. Replace fire alarm devices and improve communication with newer head-end is recommended.	\$230,000		\$230,000	
E-9		Academic Areas	The current system is a mix of old and new fire alarm devices. The old devices are zoned and the new are addressable - all need to be upgraded to the newer addressable devices. Upgrade all fire alarm devices from zoned to addressable is recommended.	\$540,000		\$540,000	
E-10		Gym, FH, Old Pool	The current system is a mix of old and new fire alarm devices. The old devices are zoned and the new are addressable - all need to be upgraded to the newer addressable devices. Upgrade all fire alarm devices from zoned to addressable is recommended.	\$200,000		\$200,000	

**Glenbrook High School District 225 - Life Safety Amendment - \$15M** submitted August, 2016

LS Code	School	Location	Description of the violation and recommended action	Cost Est.	Summer	Summer	Summer
				Total	2017	2018	2019
E-12		Throughout School	There are certain components of the intercom system providing faults and overall communication and connection issues. Cost is to repair certain components and replace head-end unit and clock system. Replace head-end unit and repair various components of intercom system is recommended. Replace clock system with wireless clocks.	\$125,000			\$125,000
E-14		Throughout School	Fire alarm initiating devices are reaching the end of their useful life. Cost is to replace all heat and smoke detectors with new. Replace fire alarm initiating devices recommended.	\$50,000	\$50,000		
E-17		Mechanical Equipment Room	Existing electrical distribution equipment is older and exceeds the six switch rule. This project will rebuild the distribution equipment and include main circuit breaker. Rebuild the electrical distribution system and include a new main circuit breaker is recommended.	\$60,000		\$60,000	
E-19		Main Electrical Service	Electrical service has a Pringle main bolted pressure switch. These switches have a known failure to re-close after fault or manual opening. Replace bolted pressure switch with new 100% rated main circuit. Replace bolted pressure switch with new 100% rated main circuit is recommended.	\$50,000		\$50,000	
E-10		Main Electrical Service	Electrical service has a Boltswitch main bolted pressure switch. These switches have a known failure to re-close after fault or manual opening. Replace bolted pressure switch with new 100% rated main circuit. Replace bolted pressure switch with new 100% rated main circuit is recommended.	\$50,000	\$50,000		
E-13		Main Electrical Service	Electrical service is original service in facility dating to 1953. Replace all interior components of the original building electrical service (circuit breakers, fuses) is recommended.	\$70,000			\$70,000
				<b>\$1,675,000</b>	<b>\$240,000</b>	<b>\$1,240,000</b>	<b>\$195,000</b>
<b>Mechanical</b>							
M-1		Mechanical Room	In 2008, the 3 main hot water boilers for the overall heating system, were replaced with 10 modular boilers. The expansion tank system was not upgraded to best support the new modular boiler system. It is not supporting the system properly which results in leaks throughout the building. This cost will replace the expansion tank system. As a result of the expansion tank not working properly, the temperature control valves have higher stress and are now approaching the end of their useful life and need to be replaced. Replace expansion tank and control valves is recommended.	\$265,000		\$265,000	
M-1		Various	There are approximately 20 classrooms and the Spartan conference room served by unit ventilators that are over 20 years old. The units have original controls and are subject to failure. In addition it is difficult to maintain the proper temperature control and there are noise concerns in the classrooms with these units. Replace unit ventilators with a new system is recommended.	\$690,000	\$690,000		
M-1		Boiler Room	The existing gas fired hot water boilers are over 40 years old and showing signs of deterioration. Loss of the boilers would result in loss of heat to the entire building. Replace modular gas fired hot water boilers with new modular boilers is recommended.	\$190,000	\$190,000		
M-4		Orchestra Pit	Due to the potential for dampness in the orchestra pit an exhaust system is recommended. Purchase of an exhaust system is recommended.	\$7,500		\$7,500	
M-9		Main Gym	Snow and rain are infiltrating through the barometric relief dampers above the main gym floor. Games have had to be cancelled due to this issue. This project should be tied in with the replacement of the new gym floor. Replacement of barometric relief dampers is recommended.	\$128,000	\$128,000		
M-11		Home Economics	There is currently not an exhaust system in the home economics room. This was sited during an ROE inspection. This cost adds the exhaust. Purchase of an exhaust system is recommended.	\$20,000		\$20,000	
M-14		Auditorium	There is a sump pump for the sanitary line in a closet in the basement of the auditorium. This fills with sewer gas, the exhaust would relieve the smell which infiltrates into the auditorium. This project will add an exhaust grill to tie into the existing exhaust system.	\$15,000		\$15,000	



**Glenbrook High School District 225 - Life Safety Amendment - \$15M** submitted August, 2016

LS Code	School	Location	Description of the violation and recommended action	Cost Est. Total	Summer 2017	Summer 2018	Summer 2019
			Purchase of an exhaust grill to be tied into the existing exhaust system is recommended.				
M-20		Natatorium	The current Innovent system which provides the dehumidification and temperature control in the natatorium is 8 years old and is not working properly and the refrigerant compressors have failed numerous times resulting in a significant repair cost. Repair and recommissioning of dehumidification system is recommended.	\$145,000		\$145,000	
M-2		Natatorium	The current Dectronics system which provides the dehumidification and temperature control in the natatorium is at the end of its useful life. Replacement of dehumidification system is recommended.	\$760,000			\$760,000
M-3		Auxiliary Gyms	The auxiliary gyms are served by original air handling units that are over 40 years old and have the original controls. Failure would result in a loss of heating and ventilation. Replacement of mechanical system is recommended.	\$480,000	\$480,000		
M-5		CPA	The CPA is served by original air handling units that are over 40 years old and have the original controls. Failure would result in a loss of heating and ventilation. Replacement of mechanical system is recommended.	\$370,000	\$370,000		
M-6		Dressing Room/Stage	The scene shop is served by an original air handling unit that is over 40 years old and has the original controls. Failure would result in a loss of heating and ventilation. Replacement of mechanical system is recommended.	\$150,000	\$150,000		
M-16		Fieldhouse	The existing rooftop exhaust fans are failing. The fans are required to maintain the proper static pressure in the fieldhouse along with the ventilation supply fans. Replacement of exhaust fans is recommended.	\$67,500		\$67,500	
M-17		Janitor's Closet by B122	There currently is not a means of exhaust in the janitor's closet. Installation of exhaust grill that is connected to the existing exhaust system is recommended.	\$8,000	\$8,000		
M-21		Mechanical Tunnels	The existing pressure and temperature relief valve on the heat exchanger is showing signs of age and needs to be replaced. Valve replacement is recommended.	\$20,000	\$20,000		
				<b>\$3,316,000</b>	<b>\$2,036,000</b>	<b>\$520,000</b>	<b>\$760,000</b>
<b>Fire Protection</b>							
FP1		Various Areas	There are several areas where the sprinkler is corroded and needs to be replaced and/or additional sprinkler heads need to be added. Replace and/or add sprinkler heads is recommended.	\$15,000	\$15,000		
FP1		Various Areas	There are several areas where the sprinkler is corroded and needs to be replaced and/or additional sprinkler heads need to be added. Replace and/or add sprinkler heads is recommended.	\$17,000	\$17,000		
				<b>\$32,000</b>	<b>\$32,000</b>	<b>\$0</b>	<b>\$0</b>
<b>Plumbing</b>							
P-7		Home Economics	The domestic hot water line is not providing hot water into the home economics classrooms, which is needed for cleaning and sanitizing cooking equipment and hand washing. Modification of hot water return system and add booster heat is recommended.	\$24,000	\$24,000		
P-3		East Pool Filter Room	Piping is rusting due to corrosive environment from chlorine. Replace rusted piping is recommended.	\$13,500	\$13,500		
P-4		Natatorium	The old pool filtration system is over 40 years old and in poor condition due to corrosion and age. Replacement of pool filtration system and surge tank is recommended.	\$210,000		\$210,000	
P-4		Natatorium	The old pool filtration system is over 40 years old and in poor condition due to corrosion and age. Replacement of pool filtration system and surge tank is recommended.	\$210,000			\$210,000
				<b>\$457,500</b>	<b>\$37,500</b>	<b>\$210,000</b>	<b>\$210,000</b>
Subtotal for All Project Areas				\$12,356,000	\$5,549,000	\$4,592,000	\$2,215,000
Architect Fee 7.5%				\$926,700	\$416,175	\$344,400	\$166,125
Construction Management Fee 7.5%				\$926,700	\$416,175	\$344,400	\$166,125

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LS Code	School	Location	Description of the violation and recommended action	Cost Est. <u>Total</u>	Summer <u>2017</u>	Summer <u>2018</u>	Summer <u>2019</u>
			Contingency 2%	\$247,120	\$110,980	\$91,840	\$44,300
			General Contingency	\$543,480			\$543,480
			Grand Total	<b>\$15,000,000</b>	<b>\$6,492,330</b>	<b>\$5,372,640</b>	<b>\$3,135,030</b>