

TOWN OF SHREWSBURY
FACILITIES CONDITION ASSESSMENT OF
TOWN BUILDINGS

FINAL REPORT

June 01, 2016

**Shrewsbury
Police Station**

G | R | L | A

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Executive Summary

Gorman Richardson Lewis Architects and our consultants were retained by the Town of Shrewsbury to provide a comprehensive study of 10 Town-owned buildings with the goal to provide key information for each building outlining the condition of:

- Site and Landscape Elements
- Architectural Elements / Building Envelope Elements
- Structural Components
- Mechanical, Plumbing, Electrical and Fire Protection Systems / HAZMAT

This Final Report includes summaries of each building for the disciplines noted above, prioritization of the recommended repairs or replacement of any element or system and estimated costs for each on a 1-year, 5-year and 10-year basis to assist the town in its planning for capital improvements.

The architectural/ engineering team consists of:

- Waterman Associates – Site / Landscape
- Gorman Richardson Lewis Architects – Architecture and Building Envelope
- Structures North – Structural (as applicable)
- Weston and Sampson - Mechanical, Plumbing, Electrical and Fire Protection Systems / HAZMAT

The town-owned buildings addressed in the Report include:

	Building	Location	Size	Year	Additions	Renovations
1	Shrewsbury High School	64 Holden Street	296,000 sf	2002		
2	Oak Middle School	45 Oak Street	182,101 sf	1957	1981	2004
3	Floral Street Elem. School	57 Floral Street	94,000 sf	1997		
4	Spring Street Elem. School	123 Spring Street	37,200 sf	1967	1995 & 2000: 6 Modular Class Rooms	
5	Calvin Coolidge Elem. School	1 Florence Street	48,600 sf	1927	1940, 1969, & 1995: 4 Modular Class Rooms	1985

6	Walter J. Paton School	58 Grafton Street	39,103 sf	1950	2000: 3 Modular Class Rooms	
7	Shrewsbury Town Hall	100 Maple Avenue	36,319 sf	1966	1997	
8	Shrewsbury Senior Center	98 Maple Avenue	11,400 sf	2000		
9	Shrewsbury Fire Headquarters	11 Church Road	16,304 sf	2007		
10	Shrewsbury Police Station	106 Maple Avenue	17,485 sf	1971	1996	1996

Condition Assessment Matrix / Methodology

The objective of the Condition Assessment Matrix included in each section of the Report, is to provide a detailed summary of each condition/ deficiency observed regarding the aforementioned disciplines for each building, a level of priority as to when the condition should be addressed, a time-range relating to the remaining service life of the item, a commentary describing action (if any) to be taken, an approximate quantity and an estimate of cost to implement the recommended action:

- **Issue #:** Each observed condition is assigned an issue number relating to the floor level where it is located (*eg: 1F-17 = First Floor – Item 17*)
- **Discipline:** one of the 6 primary areas of concentration:
 - Architecture (Arch)
 - Building Envelope (Envelope)
 - Site/ Civil
 - Structural
 - Mechanical-Electrical-Plumbing-Fire Protection (MEP/FP)
 - Hazardous Materials (HazMat)
- **Location:** Specific room or area where the item is located in the building floor plan
- **System:** one of the 12 categories describing the type of building component being addressed (wall, ceiling, flooring, etc.)
- **Description:** detailed description of each observation
- **Photo #:** address of photo pertaining to the specific issue (as applicable)
- **PlanGrid Report #:** number of the PlanGrid Report included on the flash drive at the back of the binder, typically containing a photo of the item

- **Priority:** Low/ Medium/ High: a level of priority for addressing each condition
- **Service Life:** anticipated remaining service life of the component observed
- **Commentary:** Recommended action to be taken (if any)
- **Quantity:** quantity of the component/ system to be addressed and acted upon (*eg: 7,500 sf, 1 LS (Lump Sum), etc.*), used as a basis for the cost estimate
- **Cost Estimate:** estimate of anticipated construction cost to implement the recommended action within the timeframe relating to the level of priority and service life (including Contractors' General Conditions, fees, etc. and escalation factors relative to 2016 dollars).

GRLA and our consultants want to thank Bob Cox and the Town of Shrewsbury for the opportunity to work with you on this Facilities Condition Assessment. After having reviewed the information and findings herein, please contact us with any questions or follow-up information required.

Sincerely,

GORMAN RICHARDSON LEWIS ARCHITECTS, INC.



Scott Richardson, AIA, LEED AP

Principal

1. Building Summary / Narratives

a. Waterman Design Associates

i. Site & Landscape

b. Gorman Richardson Lewis Architects (GRLA)

i. Architecture - Interior

ii. Building Envelope

c. Weston & Sampson

i. MEP/FP/Hazmat

2. Cost Matrices Summary

a. Waterman Design Associates

i. Site & Landscape

b. Gorman Richardson Lewis Architects (GRLA)

i. Architecture - Interior

ii. Building Envelope

c. Weston & Sampson

i. MEP/FP/Hazmat

Appendix A: Floor Plans

Appendix B: Plan Grid Reference

Overview:

In this section of the Facilities Condition Assessment Report, Waterman Design Associates presents a summary of observations regarding the condition of the Shrewsbury Police Station site, including commentary and recommendations for action to be taken. The observations are organized according to the following “categories” in order to address the various components comprising the existing condition of the Shrewsbury Police Station site:

1. General Site Conditions
2. Vehicular Entrances and Circulation
3. Parking Location, Arrangement, and Quantity
4. Pedestrian Circulation
5. Pedestrian Accessibility and MAAB Compliance
6. Loading Docks and Service Areas
7. Site Lighting For Building, Vehicular and Pedestrian Areas
8. Site Furnishings
9. Site Vegetation

General Site Conditions:

1. Observations:

- i. The Shrewsbury Police Station is located on Maple Avenue, and shares a site with the Shrewsbury Town Hall and the Shrewsbury Senior Center. The site is adjacent to undeveloped woodland to the north and west and single-family neighborhoods to the south and east. The residential properties are all buffered by undeveloped woodlands. The portion of the site populated by the existing building is relatively flat, not showing any perceivable topographic relief. The site contains the Municipal buildings, along with the associated vehicular and pedestrian circulation systems.

Vehicular Entrances and Circulation:

B.

1. Observations:

- i. There are two main vehicular access routes along Maple Ave. The Police Station's access and egress drive is shared by both the Town Hall and the Senior Center. Vehicles approaching the Police Station may enter from the southernmost access drive, and arrive with the police station to their left. The simple circulation route does not create any foreseeable traffic conflicts.

2. Commentary:

- i. The pavement condition of the vehicular entrances and interior circulation system ranges from good to fair throughout the site.

3. Recommendation:

- i. Implement a program of replacing damaged or worn pavement throughout the site.



SPS E1

Parking Location, Arrangement, and Quantity:

C.

1. Observations:

- i. Existing parking for employees and visitors is located on the west side of the building, directly adjacent to the main entrance. There is also a lot to the north of the Police Station that is also shared with the Town Hall. There exists approximately 14 striped spaces adjacent to the main entrance, 43 shared spaces, and 14 additional spaces for police cruiser vehicles. It is our understanding that the existing quantity of parking spaces is sufficient for normal hours. There is one (1) marked accessible parking space.

2. Commentary:

- i. The pavement condition of the parking areas mirrors that of the vehicular entrances, ranging from good to fair to poor throughout the site, with little evidence of recent repairs.

3. Recommendations:

- i. Implement a program of replacing damaged or worn pavement throughout the site.



SPS E2



SPS E3

Pedestrian Circulation:

D.

1. Observations:

- i. A paved bituminous sidewalk runs along the entirety of the frontage of the property along Maple Ave. This sidewalk directly connects to an internal bituminous sidewalk on the southernmost access drive. This walk continues along the frontage of the Police Station and intersects with a Portland cement concrete walk that leads pedestrian to the main entrance. There are no crosswalks both within the site, and leading to the site, that would indicate where pedestrians are to safely cross vehicular travel lanes.

2. Commentary:

- i. The condition of the pavement on the site ranges from fair to poor throughout.

3. Recommendation:

- i. Implement a program of replacing damaged or worn pavement throughout the site.
- ii. Implement a program to review accessible pedestrian routes throughout the site for safety and compliance with current MAAB standards.



SPS E4

Pedestrian Accessibility and MAAB Compliance:

E.

1. Observations:

- i. A total of one (1) accessible parking space was identified within the property, directly adjacent to the main building entrance.

2. Commentary:

- i. The parking space, signage, access aisle and accessible route all appear to comply with current MAAB standards.

3. Recommendation:

- i. Implement a program of continued maintenance to ensure the site remains compliant with current MAAB standards.

Loading Docks and Service Areas:

F.

1. Observations:

- i. There is one (1) loading area located at the north side of the building. The loading area services a bay door and two full size garage doors for vehicle entry to the building.

2. Commentary:

- i. The pavement in the loading area, and concrete aprons into the garage doors all appear in good to fair condition.
- ii. Confirm that loading area meets current needs of the building.

3. Recommendations:

- i. Maintain condition of loading area.



SPS E5

Site Lighting for Building, Vehicular and Pedestrian Areas:

G.

1. Observations:

- i. Exterior wall-mounted or overhead-mounted lighting exists at most entrance doors to the building. The parking areas are predominantly illuminated by pole mounted light fixtures. The walkways areas are lit with pedestrian scaled, period – themed lighting fixtures.

2. Commentary:

- i. Exterior lighting appears to sufficiently illuminate the site and building entrances to meet minimum safety requirements.

3. Recommendations:

- i. Implement a program of continued maintenance for the site lighting.



SPS E6

Site Furnishings:

H.

1. Observations:

- i. Few site furnishings exist within the vicinity of the building. There is a wooden building identification sign along the access drive, in close proximity to the building.

2. Commentary:

- i. The sign appears to be in poor condition and is not visible from Maple Ave.

3. Recommendations:

- i. Develop a signage identity program for the campus to improve visibility from Maple Street.



SPS E7

Site Vegetation:

I.

1. Observations:

- i. There exists very little vegetation throughout the site. Several shrubs adorn the main entrance at the front of the building, and appear in fair condition. The majority of the mature vegetation exists around the perimeter of the site, buffering the Police Station from Maple Ave, and surrounding properties.

2. Commentary:

- i. The condition of the site vegetation ranges from good to fair for all canopy tree and shrub plantings.

3. Recommendations:

- i. Implement a maintenance program for plant materials that includes regular trimming, watering, and soil testing.

Facilities Condition Assessment

Building Summary

Shrewsbury Police Station

Address: 100 Maple Ave., Shrewsbury, MA 01545
 Constructed: 1965
 Additions: 1995
 Renovations: 1995
 2015 Assessed Value: \$1,585,160
 (Building Only)

Building Characteristics

Gross Floor Area:
 First Floor: 9,083 gsf
 Second Floor: 5,068 gsf
 Second Floor (Storage): 3,334 gsf
 Total Building Area: 17,485 gsf

780 CMR Mass. Building Code:

Use Group Classification: B (Business); I-6 (Holding Cells)
 Construction Type: V-B (To be verified)

Building Envelope: (see Building Envelope Section for more detailed information)

Exterior Wall Assembly: Brick masonry veneer; Vinyl siding
 Windows: Wood Insulating (operable);
 Roofing: Sloped Asphalt Shingle / Black Flat Membrane

HVAC: (see MEP/FP Section for more detailed information)

Heating Fuel: Natural gas

Fire Protection: 0% automatic sprinkler system (assume NFPA 13)



Architecture - Interior

Overview:

In this section of the Facilities Condition Assessment Report, Gorman Richardson Lewis Architects (GRLA) presents a summary of observations regarding the condition of the interior architecture of the Shrewsbury Police Station, including commentary and recommendations for action to be taken. The observations are organized according to the following “categories” in order to address the various components, systems and issues comprising the existing condition of the Shrewsbury Police Station Interior:

1. Walls
2. Ceilings
3. Flooring
4. Doors
5. Windows/ Glazing
6. Casework/ Furnishings
7. Equipment
8. Mechanical Fixtures
9. Electrical/ Lighting Fixtures
10. Plumbing Fixtures
11. Code Issues
12. General

The Shrewsbury Police Station contains two distinct levels: First Floor and Second Floor. The main public entrance on the east side of the building accesses directly to the lobby which connects the main administrative, support, and office spaces. Additional employee entrances are on the north and west sides of the building.

Completed in 1965, Shrewsbury Police Station has been in service for 50 years and is reasonably well maintained. A renovation and addition occurred in 1995 adding the present garage, holding cells, sally port and second floor storage. Additional reconfiguration of the original building was included in this scope of work. Most, but not necessarily all, finishes appear to have been updated with this project. Due to the nature of the building and its use, some areas are in need of repair and replacement of materials.

Facilities Condition Assessment

Portions of the interior of the building appear to be functioning as intended with reasonable wear and tear of finishes appropriate to the age and type of the building with its number of occupants. However, other portions of the building are deemed inadequate and out of compliance with the current occupant needs and code guidelines. As noted in the Conditions Assessment Matrix included in this report, specific as well as general deficiencies are noted with recommendations for remediation (repair or replacement).

It is understood that the building permit for the latest renovation of the Police Station was issued prior to February 28, 1997 (*effective date of 780 CMR 6th Edition*), and therefore, the building design and construction reflect the requirements of the State Building Code 780 CMR 5th Edition. Nonetheless, a number of deficiencies regarding the requirements of the current Massachusetts State Building Code (780 CMR-8th Edition) and Massachusetts Architectural Access Board code (521 CMR) were observed and noted in the “Code Issues” category of this assessment report. Although allowed at the time the building was permitted and constructed, they are included in the assessment report for information purposes and may require corrective action triggered by future renovation projects or if deemed by the Authority Having Jurisdiction (typically the building official or fire department official) to pose a hazard to occupants or the public. In addition, any deficiencies regarding handicap accessibility and conformance with the Americans with Disabilities Act (ADA) may require immediate action.

The issues addressed in each Narrative category below are further itemized in the attached Condition Assessment Matrix with priority level, remaining service life (1 year/ 5 years/ 10 years) and associated costs for repair or replacement included for each issue. At the bottom of each matrix is a summary of the costs-- by building-- for each of the service life time periods, providing a summary of anticipated costs—by building—for capital planning purposes for the next 10 fiscal years: 2017 through 2026.

Methodology:

During the summer and fall of 2015, GRLA visited the Shrewsbury Police Station on multiple occasions and made visual observations of the condition of the interior architecture of the building, including walls, ceilings, flooring, doors, windows/glazing, casework/furnishings, miscellaneous equipment, mechanical-electrical-plumbing finish components and fixtures, as well as code issues regarding building code and accessibility code. Though this building is among the older operational town-owned buildings, a full structural assessment of the Police Station was not warranted.

PlanGrid:

Information gathering, field notes and photography for this section of the Conditions Assessment Report were accomplished using PlanGrid, a web-based “punch-list” tool utilizing an iPad. Floor plans (pdf format) of each level were uploaded to the PlanGrid program. Symbols representing observations of existing conditions by each of the twelve categories noted above were located on each floor plan. A “pop-up” page associated with each symbol provided a means to describe each observation, identify its location within the floor plan and include multiple photos. The “pop-up” pages could then be retrieved and sorted by

Facilities Condition Assessment

category into individual PlanGrid Reports, providing detailed information for each observation. The PlanGrid Reports for each building, by category, are included on the flash drive included in the back of the Report binder. In addition, the number of the PlanGrid Report associated with each observation is noted in the “PlanGrid” column of the Conditions Assessment Matrix.

This section addressing the condition of the Architecture Interior is followed by sections addressing:

- Site /Civil
- Building Envelope
- Mechanical, Electrical, Plumbing and Fire Protection (MEP/FP), Hazmat

Conclusion

The **Architecture-Interior** of the Shrewsbury Police Station building is primarily functioning as intended. Specific deficiencies and end-of-service-life issues are addressed in detail within the Condition Assessment Matrix.

Among the more notable issues of concern are included:

- Deficiencies regarding doors bearing a fire rated label in non-rated frames
- Deficiencies regarding conformance to requirements for handicap accessibility
- Deficiencies regarding protection and exposure of combustible finishes
- Deficiencies regarding ventilation, thermal comfort and air quality
- Deficiencies regarding storage of materials

Building EnclosureOverview:

In this section of the Facilities Condition Assessment Report, GRLA Building Envelope Sciences presents a summary of observations regarding the condition of the building envelope systems at the Shrewsbury Police Station, including commentary and recommendations for action to be taken. The observations are organized according to the following “categories” in order to address the various components, systems and issues comprising the existing condition of the structure:

1. Roofs
2. Exterior Walls
3. Windows

Methodology:

GRLA visited the Shrewsbury Police Station on September 10, 2015, and made visual observations of the condition of the building envelope systems. GRLA made observations from the ground using binoculars and from accessible roof areas. GRLA also made observations of representative interior areas.

ROOFS

1. Observations:

- i. The Shrewsbury Police Station has steep slope roofs with asphalt shingles over portions of the building; other portions of the building have low slope roofs with adhered EPDM membrane over mechanically attached insulation.
- ii. There is water staining on the wood framing members of the roof.
- iii. There are several areas with broken asphalt shingles, exposed nails, and face nailed shingles.
- iv. Shingles have map cracking and granule loss.
- v. There is a damaged downspout.

2. Commentary:

- i. The shingles at the southwest portion of the building are weathered and showing signs of aging, but typically appear functional.
- ii. Isolated damage (e.g. broken and displaced shingles) may present a leakage risk in the short term.

3. Recommendations:

- i. Repair isolated damage as soon as possible. Implement a program of annual inspections.
- ii. Plan to replace asphalt shingle roofing in 2022 to 2026.

EXTERIOR WALLS

1. Observations:

- i. The exterior walls are brick veneer with painted wood trim.
- ii. Sealant at wall transitions, penetrations, and expansion joints are typically failed.
- iii. Wood trim is deteriorated in many places, and paint is peeling.
- iv. Isolated areas of masonry are cracked.
- v. Isolated areas of mortar are deteriorated.
- vi. There is evidence of rodent damage to trim materials.
- vii. There is a displaced louver.
- viii. There is a broken conduit strap connector.

2. Commentary:

- i. Sealants require frequent replacement and should be considered an ongoing maintenance item.

- ii. Cracked and deteriorated masonry may become a falling hazard if not repaired.

3. Recommendations:

- i. Replace failed sealants; plan ongoing replacement approximately every 5-10 years.
- ii. Replace rotted and otherwise damaged wood trim. Scrape and paint areas of peeling paint.
- iii. Investigate cracked masonry to determine the cause. Remove any loose masonry as an interim measure. Repair cracks by routing and sealing (moving cracks) or pointing (static cracks).
- iv. Rout and point mortar joints. Plan for 100% pointing after 2026.
- v. Consult with pest management expert to reduce risk of future damage.
- vi. Reposition louver and properly secure. Replace perimeter sealant.
- vii. Secure conduit to wall with new connector.

WINDOWS

1. Observations:

- i. Windows are predominantly double hung wood frame windows.
- ii. Sealants at window perimeters are typically failed.

2. Commentary:

- i. Sealants require frequent replacement and should be considered an ongoing maintenance item.

3. Recommendations:

- i. Replace failed sealants; plan ongoing replacement approximately every 5-10 years.

Refer to the GRLA Building Enclosure Conditions Assessment Matrix for additional detail regarding observations and recommended repairs.

Shrewsbury Police Station
Representative Existing Conditions Photographs



Northeast Elevation, overall view



Northwest Elevation, partial view



Southeast Elevation, partial view



Southwest Elevation, partial view

Shrewsbury Police Station
Representative Existing Conditions Photographs



Northeast Elevation, rotted windowsill



Northeast Elevation, failed sealant around louver



Northeast Elevation, peeling paint below a window



Northeast Elevation, soffit intake vents

Shrewsbury Police Station
Representative Existing Conditions Photographs



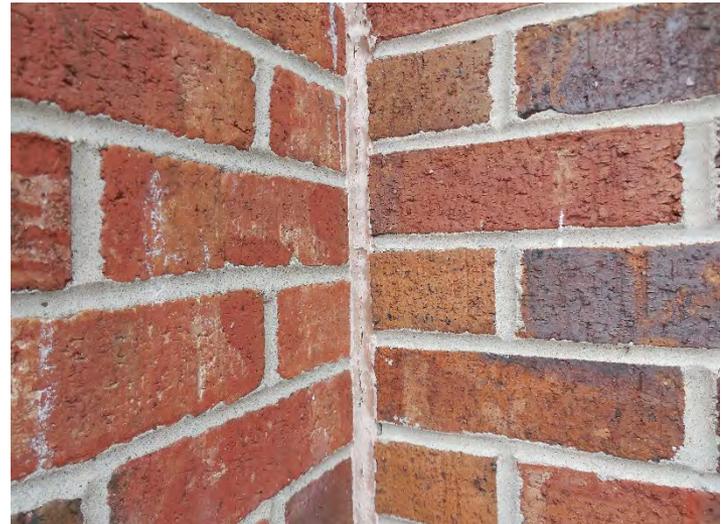
Northeast Elevation, window perimeter sealant failure



Northeast Elevation, rotted windowsill



Northwest Elevation, peeling paint and an open joint



Northwest Elevation, sealant failure at an expansion joint

Shrewsbury Police Station
Representative Existing Conditions Photographs



Northwest Elevation, sealant failure around a louver



Northwest Elevation, staining and mortar deterioration under a louver



Northeast Elevation, corroded corner guards



Northeast Elevation, damaged trim

Shrewsbury Police Station
Representative Existing Conditions Photographs



Northeast Elevation, damaged overhead door



Northeast Elevation, damaged trim



Northwest Elevation, damaged downspout



Southwest Elevation, gap in pipe penetration sealant

Shrewsbury Police Station
Representative Existing Conditions Photographs



Southwest Elevation, damaged trim



Southwest Elevation, failed patch



Southwest Elevation, open pipe penetration and failed perimeter sealant at a louver



Southeast Elevation, hole in mortar

Shrewsbury Police Station
Representative Existing Conditions Photographs



Southeast Elevation, open edges at roof corner flashing



Southeast Elevation, open joint in concrete foundation



Southwest Elevation, crack through brick and mortar joints



Southwest Elevation, failed sealant and displaced louver

Shrewsbury Police Station
Representative Existing Conditions Photographs



Southwest Elevation, staining along base of wall



Southwest Elevation, deteriorated trim



Southwest Elevation, no soffit intake vents



Southwest Elevation, peeling paint

Shrewsbury Police Station
Representative Existing Conditions Photographs



Southwest Elevation, deteriorated concrete foundation



Southeast Elevation, stained and cracked concrete, deteriorated trim, dripping condensate line



Southeast Elevation, crack in concrete



Southeast Elevation, failed perimeter sealant

Shrewsbury Police Station
Representative Existing Conditions Photographs



Attic, water staining on interior framing



Partial view of roof, facing West



Partial view of roof, facing Southeast



Typical roof shingles with granule loss and algae growth

Shrewsbury Police Station
Representative Existing Conditions Photographs



Broken shingle tab



Broken shingle tabs



Deteriorated and stained shingles; several spots of algae



Buckled shingles around the cupola

Overview:

In this section of the Facilities Condition Assessment Report, Weston & Sampson presents a summary of observations regarding the condition of Police station site, including commentary and recommendations for action to be taken. The observations are organized according to the following “categories” in order to address the various components comprising the existing condition of the Police Station site:

1. Electrical
2. HVAC
3. Plumbing
4. Fire Protection
5. Hazardous Materials

Electrical

A.

1. Observations:

i. Main service is 600A at 120/208V, 3-phase, 4-wire



ii. There are several code violations within the main electrical room.



Facilities Condition Assessment

iii. Lighting is predominantly fluorescent throughout the building

iv. Lighting controls are via wall mounted switches.



SPS E3 Recess Florescent Lights

v. Emergency lighting is served via power generated by an interior 26KW emergency generator.



SPS E5 Interior Emergency Generator

vi. There is no Fire alarm system

vii. There is a UPS system located in the data room. There are several code violations within this room.

2. Commentary:

i. Main Electrical Service

The building is served by a single electrical service rated 600 amperes, 120/208volts, 3-phase, 4-wire and is located in the main electrical closet. The service equipment consists of utility company pad mounted transformer located outback of the police station and an underground feed to two existing conduit risers and weather heads mounted on the back of the police station. These two weather heads are accessible from the ground. The service then enters the building and runs overhead above the ceiling to a 600amp main disconnect switch. Per the Massachusetts electrical code all services entering a building shall enter into a main building disconnect switch. The existing service does not immediately hit the main disconnect switch for the building which violate the code. The main panelboard is a GE Distribution panel and feeds other panels located in the electrical closet. There is not sufficient Code working clearances between any of the equipment within the closet. The electrical closet is also used as a storage room which violates the Massachusetts Electrical Code. The panels are the original to the building and should be replaced. A new electrical room should be built to provide adequate space for the electrical equipment.

ii. Emergency System

There is an onsite 26w Diesel emergency generator manufactured by CAT. The generator feeds one automatic transfer switch for emergency life safety. The ATS is located on the wall directly behind the generator with insufficient code required working clearances. The generator, ATS and life safety panel are located in the garage. None of the life safety electrical equipment is located within a separate 2HR rated room as required by the Massachusetts Electrical Code.

iii. UPS System

The UPS is located in the data/telephone/mechanical room. Within this room there is a large main exhaust fan and duct work, the main telephone equipment and the main Data racks for the facility.

The UPS is a Powerwave UPS system with maintenance bypass. The Main circuit breaker for the UPS is located on the back wall of the garage. There is a small 4 pole panelboard located behind the UPS and next to the maintenance by pass disconnect switch. Both of these are located behind the UPS and are not accessible which violates the Massachusetts Electrical Code working clearance requirements. The UPS system feeds the main data rack, the telephone equipment and the access control system equipment.

The telephone system is by Nynex.

There is a DSX access control system for the facility and this equipment is located within this room.

iv. Lighting

The lighting consists of mainly surface and recessed mounted 2 lamp 2x4 fluorescent T8 32w fixtures. There are 1x4, 2-lamp 32W T8 surface mounted fluorescent strip fixtures in the garage, storage and mechanical areas and 1x4, 2-lamp fluorescent wall mounted fixtures within the cells. All lighting throughout the facility is controlled with manual wall switches. The lighting throughout the facility appears to be in fair condition. The light levels appear to be within recommended levels.

There are compact fluorescent light fixtures mounted on the exterior of the building at each entrance to the facility. The pedestrian site lighting along the walkway is Metal Halide decorative pole mounted fixtures. Site lights appear to be in fair condition.

Life safety emergency lighting is provided via the generator and emergency life safety panelboard. The emergency light fixtures appear to be in fair condition.

Battery powered exit lighting is installed throughout the facility, and is in fair condition.

3. Recommendations:

- i. Replace all existing lighting with new LED fixtures.
- ii. Provide all new automatic lighting controls to meet the current energy codes.
- iii. Replace all existing exit signs with new LED exit signs and provide new LED exit signs to meet current code.
- iv. Replace the existing main electrical service entering to the building. Main service shall enter the building at the main service disconnect switch per the Massachusetts electrical code.
- v. Replace all existing electrical panels.
- vi. Provide a new electrical room to provide the code required working clearances.
- vii. Provide a new addressable fire alarm system to meet all current codes.
- viii. Provide a new 2hr rated emergency electrical room to house the life safety panels and transfer switch.
- ix. Provide a new dedicated Telephone/Data room to house all of the telephone, security and data equipment.

HVAC

B.

1. Observations:

- i. The Police Station’s heating and cooling system consists of two (2) gas fired natural draft hot water boilers (B-1 & B-2), an air-cooled chiller (ACC-1), perimeter fan coil units (FCU’s), finned tube radiation, an air indoor handling unit (serving the 2nd floor) and multiple ductless split systems.
- ii. Heating hot water from the boilers is circulated by two (2) constant volume in-line pumps. Hot water is supplied to 4-pipe perimeter fan coil units, an indoor air handling unit and cabinet unit heaters. The heating water is reportedly a 30% propylene glycol mixture. There is no glycol charging station.
- iii. Chilled water from the air cooled chiller is circulated by two (2) constant volume inline pumps. Chilled water is supplied to the perimeter fan coil units and the indoor air handling unit. The chilled water is reportedly a 30% propylene glycol mixture also.
- iv. Supplemental cooling is provided by ductless split systems for the dispatch room, the IT room and the detective’s room. The associated outdoor air cooled condensing units are located outside on grade.
- v. There are two (2) indirect gas fired unit heaters serving the garage.
- vi. Exhaust for the toilet rooms is by inline exhaust fans.
- vii. During the winter months the chiller is off but not drained.
- viii. General exhaust is done by an inline exhaust fan located in the 1st floor storage room.
- ix. The police station was renovated in 1995.



SPS M1 Boilers B-1 & B-2



SPS M2 - Dampers

2. Commentary:

i. Heating Equipment

- Boilers: The existing gas fired hot water boilers are Burnham model 807B-WI each with a net output of 275 MBH. Both have a dedicated boilers pump and are natural draft. Upon visual inspection the burners appeared to be in good condition although the outer shell is showing signs of rusting. The boilers appear to be original to the 1995 renovation. The boilers are controlled by a Tekmar Boiler Control system. The two combustion air dampers for the boiler room are not functioning. The high damper is closed and not opening and the lower damper is stuck open.
- FCU's: The existing FCU's are manufactured by Trane and are original to the 1995 renovation. The units have a single coil that provides either cooling or heating dependent on the season. It was reported that there have been heating complaints with the FCU's.
- Hot Water Pumps: The existing inline constant volume hot water pumps are original to the 1995 renovation and are in poor condition. Upon visual inspection it was noticed that the glands are showing signs of leaking and there is significant signs of corrosion. The Hot water pump labeled PHW-2 is extremely noisy.
- AHU: The existing AHU is modular climate changer manufactured by Trane and is original to a 1995 renovation. The unit itself appears to be in fair condition but upon visual inspection of the interior of the unit the intake section had cob webs and the heating and cooling coils are dirty.



SPS M4 – Fan Coil Unit



SPS M3 – Hot Water Pumps

ii. Cooling Equipment

- The existing air cooled chiller is a Trane model CGAEC30 and is original to a 1995 renovation. The unit is a nominal 30 Ton single circuit unit and has R-12 as its refrigerant. It is located outside on grade. Upon visual inspection of the unit the compressors and condenser coils appeared to be in good condition but the condenser coils are dirty.
- Chilled Water Pumps: The existing inline constant volume chilled water pumps are original to a 1995 renovation and are in poor condition. Upon inspection it was noticed that there are significant signs of corrosion.
- The existing ductless split systems are newer are appeared to be in good condition. Most of the units are in the ton to 1.5 ton range.

iii. Building Management System

- The existing control system is a Trane Tracer BMS. The BMS is original to the 1995 renovation and it may be problematic and expensive to get new parts as components start to fail.



SPS M5 – Air Cooled Chiller



SPS M6 – Chilled Water Pumps

3. Recommendations:

- i. Suspect water system quality issues. Check heating and cooling system water/glycol mixture and quality for proper chemistry.
- ii. Replace boilers with high efficiency condensing boilers.
- iii. Repair/Replace combustion air dampers and actuators.
- iv. Replace existing Hot Water Pumps.
- v. Replace existing perimeter FCU's.
- vi. Replace existing BMS System
- vii. Replace existing air cooled chiller.
- viii. Replace existing chilled water pumps.

Bob Cox Comment: "Pipes run through unheated attic space must be glycol in system. System has 4 pumps: 2 cooling + 2 heating (4 pipes throughout building)"

Plumbing

C.

1. Observations:

- i. Domestic Water Service: The building is served by a 3” domestic water service.
- ii. Domestic Hot Water Service: The building’s domestic hot water service is generated by (1) one 75 gallon gas fired hot water heater.
- iii. Natural Gas: The building has a 4” natural gas service.
- iv. Sanitary: The building has a 4” sanitary service.
- v. Fixtures:

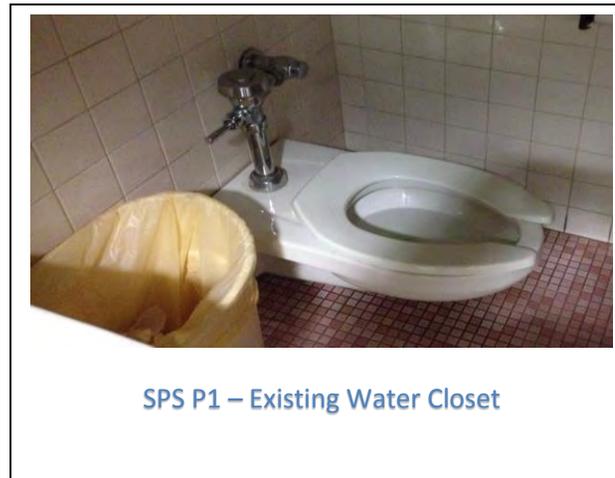
- Water closets are wall mounted; manual flush valve and vitreous china.
- Urinals are wall mounted, manual flush valve and vitreous china.
- Lavatories are wall hung, dual handle faucets and vitreous china,
- Drinking fountains are wall mounted stainless steel units.

2. Commentary:

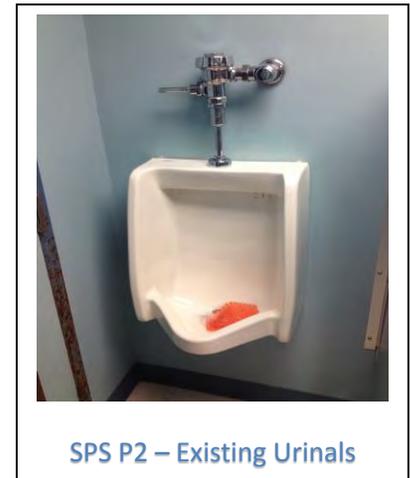
- i. Most of the plumbing fixtures are original to a 1995 renovation and appear to be in fair condition.

3. Recommendations:

- i. Replace existing water closets with low flow water closets with automatic flush valves (not in jail cells).
- ii. Replace existing urinals with low flow urinals with automatic flush valves (not in jail cells).
- iii. Replace existing lavatories with low flow automatic faucets



SPS P1 – Existing Water Closet



SPS P2 – Existing Urinals



SPS P3 – Existing Lavatories

Fire Protection

D.

1. Observations:

- i. The building is not sprinkled.

2. Commentary:

- i. There is no fire protection system.

3. Recommendations:

- i. Install Fire Protection system per NFPA 13

Hazardous Materials

E.

1. Observations:

- i. Asbestos-Containing Materials

Numerous suspect asbestos-containing materials were observed within the building, including but not limited to: roofing materials, plaster, gypsum board, floor tile, resilient flooring, acoustical ceiling tile, molded cove base, caulk, etc. All materials were observed to be in generally good condition.

- ii. Other Hazardous Materials

Fluorescent light fixtures are present throughout the building. Other materials present include hydraulic door closers and exit lights. All materials were observed to be in generally good condition.

2. Commentary:

i. Asbestos-Containing Materials

The building has undergone renovations in the past with various asbestos-containing materials being removed or encapsulated. Asbestos-containing floor tile with associated mastics and generator breeching were reportedly abated in the past. However, concealed materials may exist within plumbing chases, walls and ceilings.

ii. Other Hazardous Materials

Fluorescent light fixtures contain small amounts of mercury. Fluorescent light ballasts often contain polychlorinated biphenyls (PCBs) or Diethylhexyl Phthalate or Di (2-ethylhexyl) phthalate (DEHP). Hydraulic door closers often contain oils. Exit lights historically contained batteries. None of these materials typically present hazards unless they are damaged.

3. Recommendations:

i. Asbestos-Containing Materials

The Massachusetts Department of Environmental Protection (DEP) revised asbestos regulation, effective June 20, 2014, requires that any Suspect Asbestos-Containing Material be sampled by a Massachusetts Department of Labor Standards (DLS)-certified asbestos inspector prior such materials being impacted by renovation or demolition. Alternatively, materials may be assumed to contain asbestos. We recommend that any suspect asbestos-containing materials expected to be impacted by renovation or demolition be sampled prior to disturbance. Roofing materials under EPDM roofing, roof shingles, façade damp-proofing, door caulk, window caulk and roof caulk are all suspect asbestos-containing materials that may be present at the building. The following is a list of potential asbestos-containing materials found at the building.

Material	Location	Approximate Quantity	Condition
Floor tile and associated mastics	Throughout	9,350 SF	Good
Façade damp-proofing	Exterior	3,200 SF	Good
Door caulk	Exterior	90 LF	Good
Window caulking and glazing	Exterior	300 LF	Good
Roof caulk	Exterior – roof at penetrations/transitions	100 LF	Good
Roofing materials	Exterior – roof	9,350 SF	Good
Gypsum board	Throughout	6,100 SF	Good

ii. Other Hazardous Materials

The fluorescent light fixtures and ballasts, door closers and exit lights may require special handling and disposal should they require removal from the building. The following is a summary of such materials found at the building.

Material	Approximate Quantity
Fluorescent light bulbs	300
Fluorescent light ballasts	150
Hydraulic door closers	20
Exit light batteries	20

Shrewsbury Police Station - Total Estimated Costs

Consultant	Discipline		Cost Estimate		
			1 yr	5 yr	10 yr
Waterman Design Associates	Site & Landscape			\$109,858	\$130,036
Gorman Richardson Lewis Architects	Architecture		\$284,630	\$309,339	\$245,445
Gorman Richardson Lewis Architects	Building Envelope		\$104,690	\$20,389	\$828,962
Weston & Sampson	MEP/FP/Hazmat		\$300,200	\$712,177	\$180,839
		Totals	\$689,520	\$1,151,763	\$1,385,282

Condition Assessment Matrix

BUILDING:		SHREWSBURY POLICE STATION															
AREA:		FIRST FLOOR															
Issue #	Discipline	Loc	System	Description	Photo #	PlanGrid Report #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
							Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr
1F-1	Arch	First Floor	Walls	Rotted fascia, gutter and eave area of exterior.		322			X	X			Cut and removed rotted wood and other material. Fully flashing transition areas. Install new fascia, gutter and wood blocking as required. Finish all materials to match existing.	12sf	\$1,596		
1F-2	Arch	107	Walls	According to detail 2 on providing drawing, the head of the infill wall and window assembly does not have thermal insulation installed.		Refer to Photos		X		X			Remove interior wall finish and infill wall framing with batten insulation and appropriate vapor barrier on warm side of wall.	300sf	\$13,680		
1F-3	Arch	First Floor	Walls	Surface cracks in GWB wall finish; damaged paint finish due to abrasion of adjacent furnishings against the walls.		Refer to Photos	X				X Phased		Implement a program of repainting of painted wall and interior door frame surfaces, including repair of damaged GWB (gypsum wallboard) and vinyl wall base. Repainting program may be divided into primary areas of the building spread over a 5- to 7-year period such that finish surfaces are refreshed every 5 to 7 years. (assume 50% SF each phase)	6469.98sf		\$24,091	\$28,515
1F-4	Arch	130	Mech.	HV Unit leaks.		Refer to Photos			X	X			Repair or replace HV unit.	4lf	\$1,824		
1F-5	Arch	First Floor 123	Mech.	Mechaical grills heavily soiled and partially blocked with organic material. Staff complain of odors, mold and poor thermal comfort at various locations of first floor.		324			X	X			Implement cleaning program of supply and return grills. Clean and seal all ducts in HVAC system. Continually replace HVAC filters on a routine basis. Evaluate insulation value of exterior walls and roof assembly. Seal all air leaks in exterior wall and fenestrations.	600lf duct / 3000sf insul. / 30 grills	\$18,240	\$22,344	
1F-6	Arch	130	Mech.	Staff and custodian complain of odors and mold growth in locker room.		Refer to Photos			X	X			Evaluate existing HVAC equipment serving area. Verify exhaust system is operable. Clean associated ductwork.	see 1F-5			
1F-4	Arch	107	Window	Existing window assembly appears to have limited insulation value in glass unit which may be leading to staff thermal discomfort.		Refer to Photos		X		X			Remove and replace window assembly with insulated assembly meeting IECC 2012 standards for insulating value.	56sf / 14wide x 5'h fixed unit	\$9,789		

Condition Assessment Matrix

BUILDING:		SHREWSBURY POLICE STATION															
AREA:		FIRST FLOOR															
Issue #	Discipline	Loc	System	Description	Photo #	PlanGrid Report #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
							Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr
1F-5	Arch	First Floor	Flooring	VCT is heavily stained, discolored and worn in various areas.		Refer to Photos		X				X Phased	Implement program to replace all VCT at end of useful service life; full replacement rather than refinishing / spot replacement is recommended as more cost effective.	5887.68sf		\$56,178	\$66,497
1F-6	Arch	103	Flooring	Porcelain tile and grout have some signs of wear and staining.		Refer to Photos	X					X	Refinish tile and grout. Seal grout and tile surfaces to extend visual appearance.	210sf			\$17,588
1F-7	Arch	First Floor	Doors	Various doors are stamped to be fire rated with frames that are not clearly identified for rating.		Refer to Photos			X		X		Evaluate existing room designations for requirement of fire separation. If determined to requiring fire separation from adjacent space, remove and replace door frames with proper framing rating.	(+/-) 12 doors		\$26,813	
1F-8	Arch	121	Doors	Exterior door jamb and strike as signs of wear and does not fully close and seal weathertight. Door binds on frame.		Refer to Photos			X	X			Adjust door hinges to allow door to open and close properly. Or remove and replace door frame, transom and door assembly. Ensure wall opening is square.	1	\$1,368		
1F-9	Arch	123	Caswork	Metal lockers are dented and finish is worn.		Refer to Photos	X				X		Replace lockers that are beyond service life. Replace hardware as required. Refinish lockers.	30lf of 5' tall lockers		\$16,758	
1F-10	Arch	First Floor	Ceiling	Various areas of ACT ceiling on first floor have slight wear and stains from leaks, air diffusers and maintenance handling.		Refer to Photos	X					X Phased	Implement a program of replacing soiled and damaged ceiling tiles to maintain high quality appearance of spaces. Consider use of cleanable tiles near HVAC diffusers to allow for cleaning of dust/dirt buildup within the supply air coming through the diffusers.	3235sf		\$12,047	\$14,260
1F-11	Arch	First Floor	Ceiling	Small cracks and light staining in g.w.b. ceiling in various areas.		Refer to Photos	X					X Phased	Implement a program of cleaning and repainting ceiling and soffit surfaces. Repainting program may be divided into primary areas of the building spread over a 5- to 7-year period such that finish surfaces are refreshed every 5 to 7 years.	1617.5sf		\$13,549	\$16,037
1F-12	Arch	127	Code	Electrical closet does not appear to have required clearance in front of electrical panel in accordance with 527 CMR		Refer to Photos			X	X			Remove obstructions to provide clearance or relocate electrical panel to achieve required service clearance per 527 CMR.	1	\$3,800		

Condition Assessment Matrix

BUILDING:		SHREWSBURY POLICE STATION															
AREA:		FIRST FLOOR															
Issue #	Discipline	Loc	System	Description	Photo #	PlanGrid Report #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
							Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr
1F-13	Arch	127	Ceiling	Large void in GWB ceiling at conduit and wiring penetration. Kraft faced insulation appears to be exposed to interior space.		Refer to Photos			X	X				1	\$5,320		
1F-14	Arch	113	ADA	Employee restroom does not have ADA required clearance for door operation.		Refer to Photos			X	X				1	\$8,360		
1F-15	Arch	119	Flooring	Marble threshold at door has large crack.		Refer to Photos		X		X				3lf	\$798		
1F-16	Arch	124	ADA	Men's Restroom does not have the required ADA clearances for maneuvering. Common use shower is not accessible.		Refer to Photos			X	X				114sf	\$5,198		
1F-17	Arch	120	ADA	Womens's Restroom does not have the required ADA clearances for maneuvering. Common use shower is not accessible.		Refer to Photos			X	X				164sf	\$7,478		
1F-18	Arch	First Floor Rear Stair	Code	Existing handrail terminations do not comply with current code requirements.		Refer to Photos			X	X				60lf	\$12,768		
1F-19	Arch	First Floor Front Stair	Code	Existing handrail transitions and terminations do not comply with current code requirements.		Refer to Photos			X	X				60lf	\$12,768		
1F-20	Arch	First Floor	Flooring	Carpet has light staining and wear.		Refer to Photos	X				X			550sf		\$5,121	
1F-21	Arch	First Floor	Doors	Various doors and frames have chipped and worn paint. Evidence of binding of door on frames in some areas.		Refer to Photos	X					X		49		\$54,743	\$64,798

Condition Assessment Matrix

BUILDING:		SHREWSBURY POLICE STATION																
AREA:		FIRST FLOOR																
Issue #	Discipline	Loc	System	Description	Photo #	PlanGrid Report #	Priority			Service Life			Commentary	Quantity	Cost Estimate			
							Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr	
1F-22	Arch	First Floor	Glass	Various doors have wired glass. Traditional wired glass may have been code compliant for application at time of installation. Traditional wired glass has limited fire rating application.		Refer to Photos		X			X		Certify if installed vision lites in fire rated doors are thermally and impact resistance tested. Replace vision panels in fire rated doors where deemed not certified for application.	12		\$15,417		
1F-23	Arch	First Floor	ADA	Door knobs at common use locker rooms are not ADA compliant.		Refer to Photos			X	X		Replace door hardware with ADA compliant lever control sets.	8	\$14,592				
															1 yr	5 yr	10 yr	
															Architectural First Floor Cost Total	\$117,580	\$247,060	\$207,695

BUILDING:		SHREWSBURY Police Station															
AREA:		SECOND FLOOR															
Issue #	Discipline	Loc	System	Description	Photo #	PlanGrid Report #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
							Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr.	5 yr.	10 yr.
2F-1	Arch	Second Floor	Flooring	VCT tile and wood stair nosings worn and stained. VCT tile cracked and cupping in various areas.		Refer to Photos		X				X Phased	Remove and replace worn VCT. Refinish wood stair nosings. Evaluate existing subfloor for deflection prior to installation on new flooring. Reinforce floor as needed.	1703.38		\$16,251	\$19,236
2F-2	Arch	Second Floor	Door	Doors have wired glass. Traditional wired glass may have been code compliant for application at time of installation. Traditional wired glass has limited fire rating application.		Refer to Photos / 325		X			X		Certify if installed vision lites in fire rated doors are thermally and impact resistance tested. Replace vision panels in fire rated doors where deemed not certified for application.	2		\$11,172	
2F-3	Arch	Second Floor	Flooring	Areas of storage and workshop have exposed plywood installed as flooring. Plywood does not appear to have certification or treatment for exposed floor application in building construction type. Fire sprinkler coverage appears limited in storage area.		Refer to Photos			X	X			Verify classification of exposed plywood flooring. Cover with applicable class A-C finish material or remove and replace with properly fire-retardant treated plywood.	3334.71sf	\$60,812		
2F-4	Arch	Second Floor	CODE	Areas of storage have batten insulation installed with poly and kraft faced insulation installed with no thermal or ignition barrier over material. This poses fire hazard due to exposure of combustible material and adjacent gas HVAC equipment mounted in adjacent room.		Refer to Photos			X	X			Install furring strips and properly rated GWB over insulated wood rafters to provide separation of storage area and vapor barrier.	3334.71sf	\$60,812		
2F-5	Arch	Second Floor	Ceiling	Lighting stained painted GWB ceilings.		Refer to Photos	X				X		Clean and refinish ceiling surfaces.	1558sf		\$5,802	
2F-6	Arch	Second Floor	Mech.	Mechanical grills soiled. Staff complain of limited thermal comfort at perimeter offices. Some HV units are suspect as to fully operational.		Refer to Photos			X		X		Implement cleaning program of supply and return grills. Clean and seal all ducts in HVAC system. Continually replace HVAC filters on a routine basis. Evaluate insulation value of exterior walls and roof assembly. Seal all air leaks in exterior wall and fenestrations. Service or replace HV units as necessary.	30lf duct / 1000sf insulation. / 6 grills	\$4,993	\$6,117	

Condition Assessment Matrix

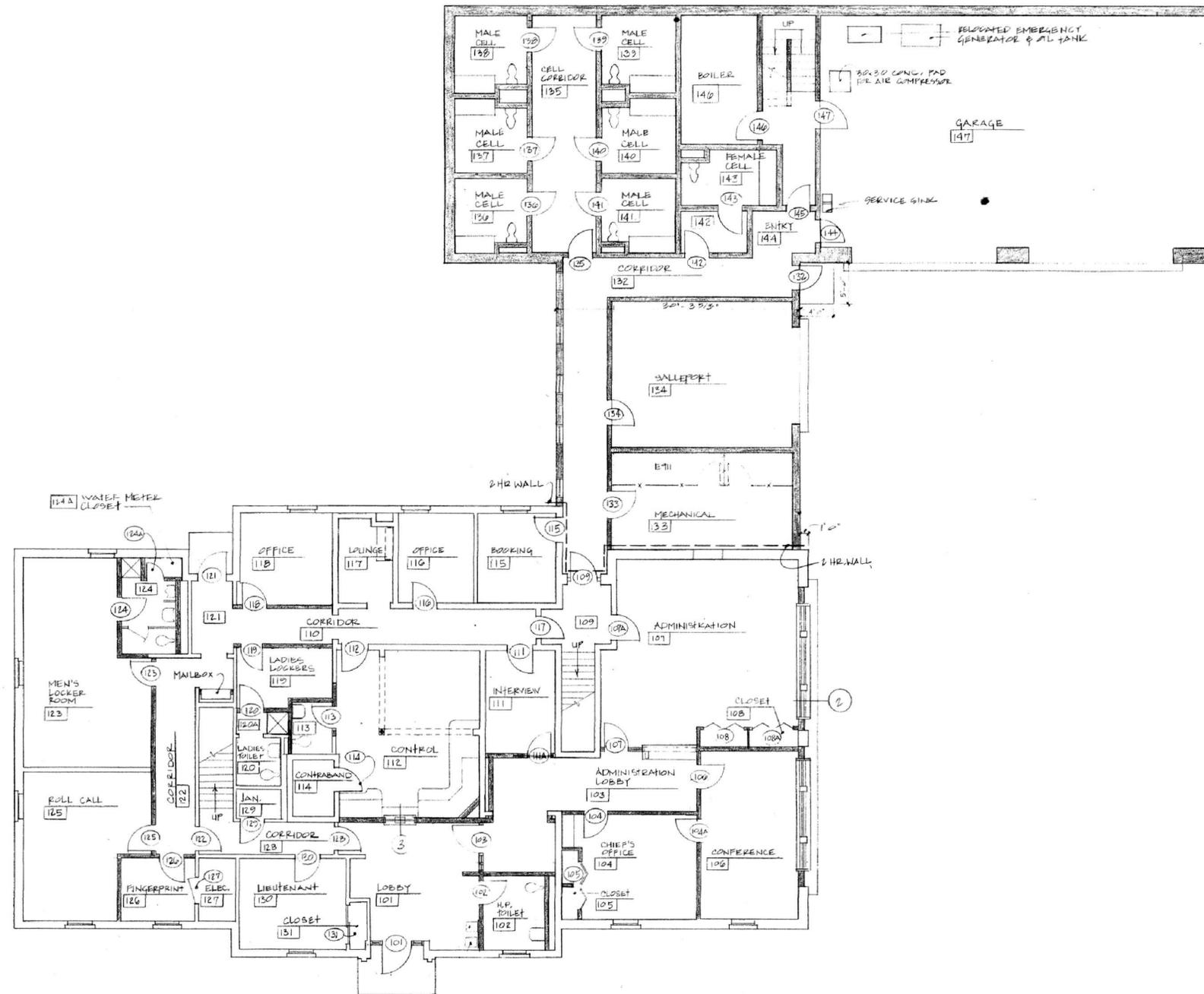
BUILDING:		SHREWSBURY POLICE STATION														
AREA:		Building Envelope														
Issue #	Discipline	Location	System	Description	Photo #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
						Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr
E1	Envelope	Typical	Walls	Failed sealants at wall transitions, penetrations, expansion joints, and window perimeters			X		X			Replace failed sealants; plan for regular sealant maintenance including replacement approximately every 5-10 years.	100% = ± 1,275 lf	\$48,450		
E2	Envelope	Typical	Walls	Peeling paint and deteriorated wood trim				X	X			Replace rotted and otherwise damaged wood trim. Scrape and paint areas of peeling paint.	100% = ± 1,500 sf	\$34,200		
E3	Envelope	Typical	Walls	Isolated deteriorated mortar joints			X		X			Rout and point mortar joints. Assume 5% pointing within 3-5 years. Assume 100% pointing after 2026.	5% = ± 350 sf 100% = ± 7,000 sf		\$19,551	\$462,840
E4	Envelope	Southeast Elevation	Walls	Isolated cracked brick masonry			X		X			Investigate cracked masonry to determine the cause of cracking. Repair cracks by routing and sealing (moving cracks) or pointing (static cracks).	15 sf		\$838	
E5	Envelope	Northwest Elevation	Roof	Damaged downspout		X					X	Repair damaged downspout.	1 location			\$1,322
E6	Envelope	Southwest Elevation	Walls	Displaced louver			X		X			Reposition louver and properly secure. Replace perimeter sealant.	1 location	\$1,824		
E7	Envelope	Attic	Roof	Water stains on attic roof framing				X	X			Investigate to determine cause of water staining. If stains are due to active roof leaks, repair roof.	50 sf section	\$2,280		
E8	Envelope	Typical	Roof	Shingles have granule loss and broken tabs; isolated unsealed face fasteners			X		X		X	Repair broken tabs and unsealed face fasteners in 2017. Granule loss is a sign of age, however shingles are functional currently. Plan for 100% asphalt shingle roof replacement in 2022 to 2026.	Repair = 300 sf 100% replace = 8,000 sf (not incl. ± 2,000 sf low-slope)	\$13,680		\$364,800
E9	Envelope	Various	Walls	Rodent damage to trim materials				X	X			Repair or replace materials damaged by rodents. Consult with pest management expert to reduce risk of future damage.	40 lf	\$2,432		
E10	Envelope	Southwest Elevation	Walls	Broken conduit strap connector				X	X			Secure conduit to wall with new connector.	1 location	\$1,824		
													1 yr	5 yr	10 yr	
												Envelope Cost Total	\$104,690	\$20,389	\$828,962	

Condition Assessment Matrix

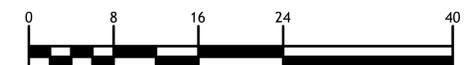
BUILDING:				POLICE STATION												
AREA: 11,000 sf																
Issue #	Discipline	Location	System	Description	Photo #	Priority			Service Life			Commentary	Quantity	Cost Estimate		
						Low	Med	High	2017	2018 to 2021	2022 to 2026			1 yr	5 yr	10 yr
EL1	Electrical	Main Elec. Room	Power	Provide a new electrical service.	SPS E1			X	X			See Electric Narrative	600 Amp 120/208 V 3 Phase	\$38,000		
EL2	Electrical	Main Elec. Room	Power	Replace all power distribution equipment and provide a new electrical room	SPS E2			X	X			See Electric Narrative	1	\$91,200		
EL3	Electrical	Through-out	Lighting	Provide all new LED lighting throughout	SPS E3	X				X		See Electric Narrative	11,000 Square Feet		\$163,856	
EL4	Electrical	Through-out	Lighting	Provide all new automatic lighting controls	-	X				X		See Electric Narrative	11,000 Square Feet		\$61,446	
EL5	Electrical	Through-out	Lighting	Provide all new LED Exit signs	SPS E4			X	X			See Electric Narrative	11,000 Square Feet	\$8,360		
EL6	Electrical	New Elec. Room	Power	Provide new 2HR rated room for life safety equipment - Relocate existing life safety equipment to this new room	SPS E5			X	X			See Electric Narrative	1	\$45,600		
H1	HVAC	Mech Room	HVAC	Replace existing boilers (B-1 & B-2) with high efficiency condensing boilers	SPS M1		X			X		See HVAC Narrative	2		\$102,410	
H2	HVAC	Mech Room	HVAC	Repair/Replace existing combustion air dampers & actuators	SPS M2			X	X			See HVAC Narrative	2	\$6,840		
H3	HVAC	Mech Room	HVAC	Replace existing Hot water pumps	SPS M3		X			X		See HVAC Narrative	2		\$19,551	
H4	HVAC	Mech Room	HVAC	Replace existing perimeter FCU's	SPS M4		X			X		See HVAC Narrative	25		\$232,750	



Project North



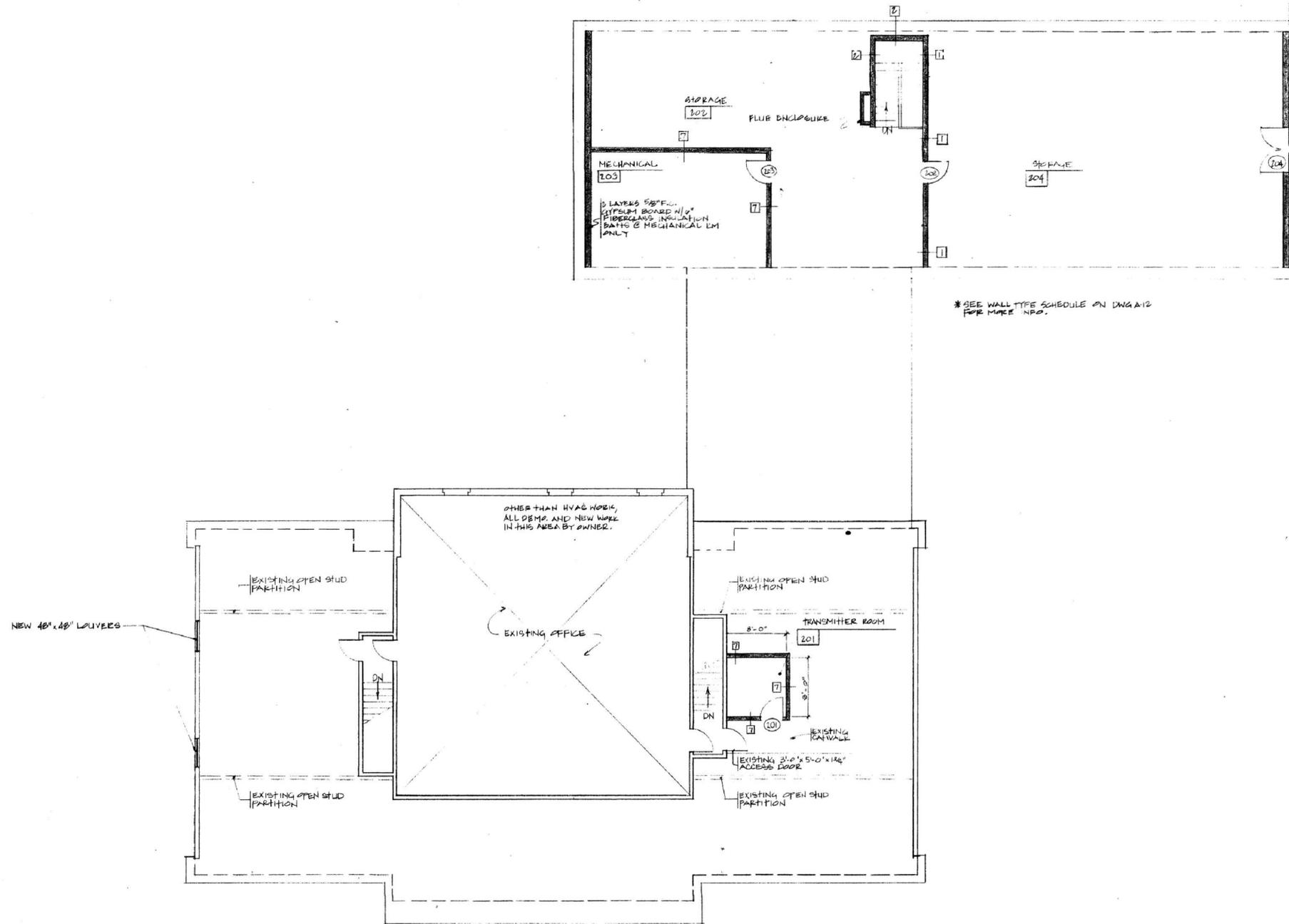
GRAPHIC SCALE



(IN FEET)
1 INCH = 8 FEET



Project North



*SEE WALL TYPE SCHEDULE ON DWG A12 FOR MORE INFO.

