351 Stewart Ave
Garden City, NY 11530

Garden City
Fire Department

Firehouse #1, #2 & #3

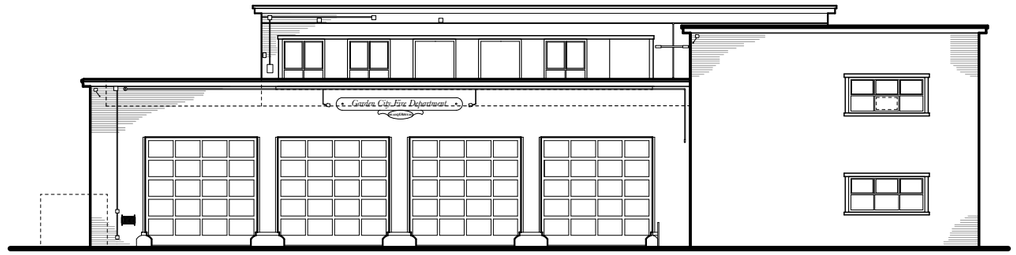
Garden City, NY 11530

Existing Conditions
Documentation & Recommendations
DRAFT

February 2, 2018

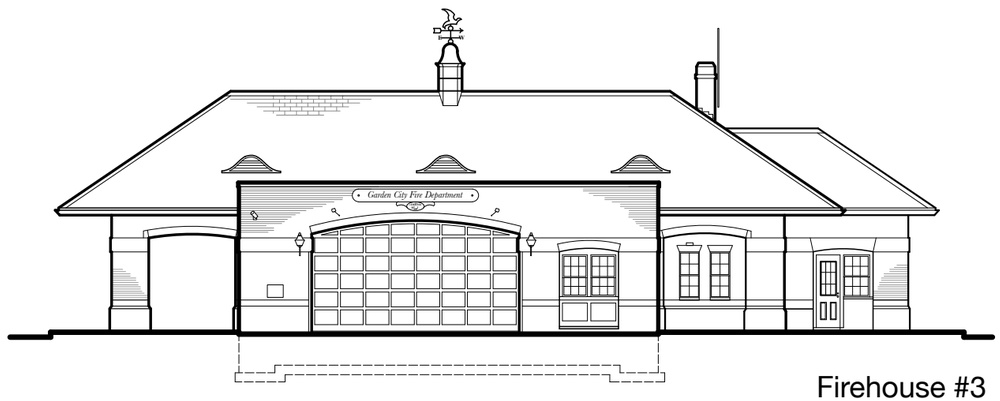
CAMERON ENGINEERING
& ASSOCIATES, LLP
177 Crossways Park Drive
Woodbury, NY 11797

VINCENT BENIC ARCHITECT 611 Broadway, Suite 817 New York, NY 10012



Firehouse #1
347 Stewart Ave

Firehouse #2
Stewart Ave & Edgemere Rd



Firehouse #3
St. James North & Emmet Place

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351 Stewart Ave
Garden City, NY 11530

Garden City
Fire Department

Firehouse #1

347 Stewart Ave, Garden City, NY 11530

Existing Conditions
Documentation & Recommendations
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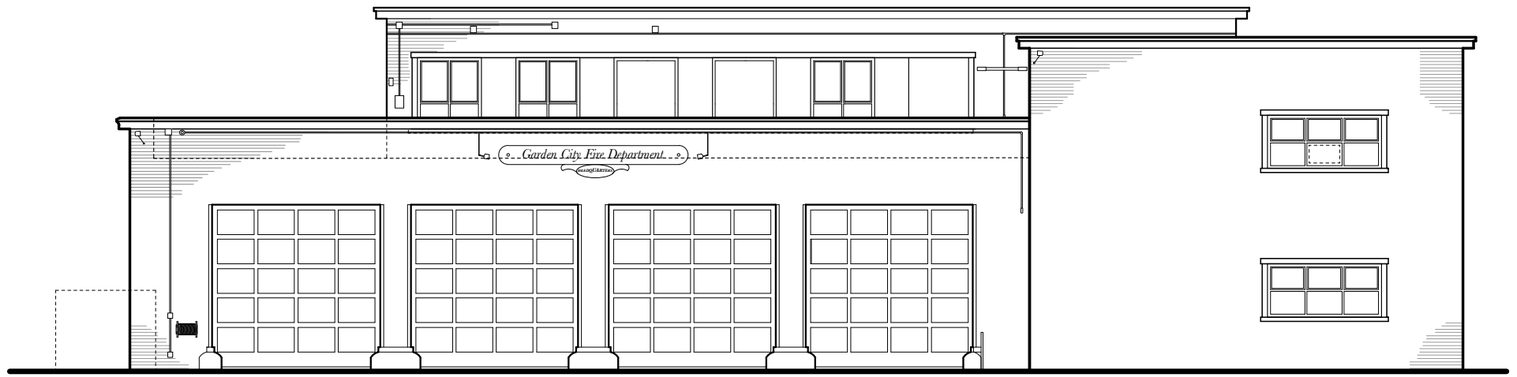

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GARDEN CITY FIRE DEPARTMENT
FIREHOUSE #1
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1.0 INTRODUCTION

1.1 Methodology

The existing conditions documentation is intended to be a general survey of the roofs and exterior facades' current physical conditions. It is also a general survey of the building's interior physical conditions and compliance with applicable Code and ADA regulations. The building's architectural, structural, mechanical, electrical, and plumbing systems were surveyed. VBA & CEA documented the building's existing conditions over a series of site visits. The existing conditions documentation was based on visual observation by binocular survey from grade level and roof level.

The following report is the result of the existing conditions documentation, translated into written descriptions, photographs and drawings. Based on the existing conditions found, VBA & CEA propose repair and design recommendations. At the end of each report will be a preliminary cost estimate.

For hazardous materials existing conditions, please see accompanying asbestos and hazardous materials report.

1.2 Location and Building Description

Firehouse #1 is a two story brick and cast stone building with aluminum windows and limestone surround. There is a upper roof, lower roof, and rooftop terrace. The building was constructed in the 1970's and was most recently renovated in 2014, which included changes to the 2nd floor, roof terrace and associated mechanical, plumbing and electrical updates. It is located on Stewart Ave, adjacent to the Garden City Police Station and Village Hall.

Figure 1.2_1 Firehouse #1 Location Map - 347 Stewart Ave

1.3 Summary of Key Findings

In order to provide Garden City with a summary of Firehouse #1's existing conditions and repair recommendations, the scope of work items have been classified into the following categories:

1. Required by Code and Law

2. Severe Physical Condition & Deterioration

3. Poor Physical Condition & Deterioration

4. Fair Physical Condition & Deterioration

5. Good Physical Condition & Deterioration

The preliminary cost estimate for each scope of work item can be found at the end of Firehouse #1's report.

GCFD Firehouse #1		Physical Condition & Deterioration			
Scope of Work Item	Required By Code/Law	Severe	Poor	Fair	Good
2.1 National, State & Local Codes					
a. Fire Stopping & Fire Safing	X	X			
b. Mechanical	X			X	
c. Electrical	X		X		
d. Plumbing	X		X		
2.2 ADA Compliance					
a. Exterior Entrance	X				
b. Interior Route & Bathroom	X				
2.3 Facades					
a. Parapet		X			
b. Brick & Limestone		X		X	
c. Windows & Lintels		X	X	X	
2.4 Roofs					
a. Flashing		X	X	X	
b. Roof Materials			X	X	
c. Door Sills			X		
d. Drainage		X		X	
2.5 Recommended Upgrades					
a. Architectural				X	
b. Mechanical			X		
c. Electrical			X		
d. Plumbing				X	
e. Exterior Drainage			X		

2.0 ARCHITECTURAL & ENGINEERING

The following sections describe the existing conditions of Firehouse #1 as they relate to the 2.1 National, State, & Local Codes, 2.2 ADA Compliance, 2.3 Facades, and 2.4 Roofs. Also included are Recommended Upgrades that are standard common practice. At the end of each section VBA and CEA's recommended repairs are outlined.

2.1 National, State, & Local Codes

A. Fire Stopping & Fire Safing

Fire Stopping & Fire Safing Existing Conditions:

1. First Floor:

The Apparatus Room, Corridor, Vestibule and the Stair are required to be fire rated for egress. Fire separation at the floor assembly is also required. *Please see EX-100 First Floor Plan.*

- **Pipe penetrations** in multiple locations are not fire stopped / safed at South Apparatus Room wall. In violation of Code.
- **Pipe penetration** not fire stopped at underside of the 2nd floor assembly in Electrical Closet. In violation of Code.
- **Ductwork penetration** not fire stopped/ safed at South Apparatus Room wall. In violation of Code.
- **Washing machine** is penetrating South Apparatus Room wall into the Electrical Closet. Holes all around washing machine. Opening is not fire stopped/ safed. Wall in this area is not fire rated construction. In violation of Code.
- **Hole** in concrete masonry unit at fire rated Corridor wall and in Electrical Closet at ceiling level. In violation of Code.
- **No doors** at openings between Corridor to Office and between Vestibule to Conference and Sitting Rooms. In violation of Code.

Figure 2.1_1 Apparatus Room - Pipe Penetrations (left), Hole in CMU (right)

Figure 2.1_2 Electrical Closet - Wash. M. Opening & Pipes Not Fire Stopped

Figure 2.1_3 Meeting Rm - No Fire Stopping At Top of Wall & Bottom of Slab

2. Second Floor:

The Corridor and Stair are required to be fire rated for egress. *Please see EX-101 Second Floor Plan.*

- **Flexible metal conduit penetrations** in multiple locations are not fire stopped/ safed between the Kitchen and Corridor wall.
- **No fire stopping / safing** at the bottom of slab and top of wall between Kitchen and Corridor as well as Meeting Room and Corridor walls.
- **Ductwork penetration** not fire stopped/ safed at wall between Kitchen and Corridor. No fire damper visible.

Fire stopping / safing are critical elements of fire rated construction and inhibit the spread of fire. They are required by Code.

Figure 2.1_4 Kitchen - Flexible Metal Conduit & Duct Penetrations

Fire Stopping & Fire Safing Recommendations for Repair:

VBA recommends the following repairs:

1. All pipe, conduit, and ductwork penetrations should be fire stopped and fire safed to maintain fire rated construction.
2. New fire rated construction should be provided in areas of non fire rated construction and holes.
3. Provide fire rated doors where required to maintain fire rated separation.

B. Mechanical

i) Apparatus Floor

1) Observed deficiency: Steam distribution piping & fittings to four (4) unit heaters are uninsulated.

Recommended fix: All uninsulated piping and fittings should be cleaned, insulated, and provided with a service jacket as per New York State Energy Conservation Code. In addition to resolving code problems, insulated piping will reduce building energy usage and operating costs.

2) Observed deficiency: No mechanical exhaust for 'shower room.'

Recommended fix: Mechanical exhaust should be provided as per New York State Mechanical Code. A single exhaust system could be constructed and interconnected with the toilet room exhaust. Exhaust ductwork would be installed in the ceiling of the shower room and routed to the building exterior, typically through the second floor and into a roof-mounted exhaust fan. Exhaust ductwork within the shower room should be constructed of stainless steel or aluminum (as opposed to galvanized steel) to prevent corrosion from shower steam. Ductwork sizes will vary with the final layout but may be approximately 10"x6" in the shower room. See architectural programming summary, relevance of code compliance to existing bathroom pending relocation/replacement of existing bathroom.

3) Observed deficiency: No make-up air supply to dispatch or vestibule for ventilation or to keep positive pressure against apparatus garage.

Recommended fix: A variable refrigerant flow (VRF) split ventilation / make-up air unit could provide the code-required air for pressurization and ventilation. The unit could be mounted in the ceiling of the Lockers & Bunk Room and ducted to the dispatch and vestibule spaces. A Daikin FXMQ48MFVJU unit (or similar) with corresponding outdoor heat pump unit could be utilized with the outdoor unit mounted on grade. The two units would be interconnected by refrigerant piping and control wiring. Each unit would require electrical power wiring. A complete engineering design analysis is required to determine the exact recommended equipment.

4) Observed deficiency: Oxygen/compressed gas storage room ventilation duct must have exhaust fan to keep room under negative pressure

Recommended fix: Install an exhaust fan in the oxygen room duct. A Cook Gemini fan is an inexpensive option, though it is designed for suspended ceilings. A Cook ACED-EC is a slightly more costly option suitable for open ceilings.

ii) First Floor Corridor

5) Observed deficiency: Egress corridor, dispatch room & other connected interior spaces require mechanical ventilation per the New York State Mechanical Code.

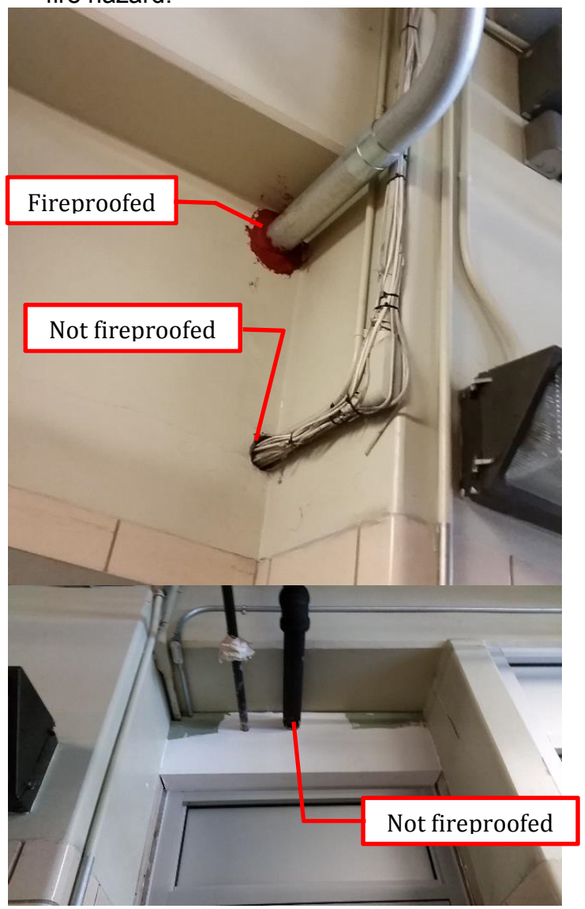
Recommended fix: Ventilation could be provided via the VRF make-up air unit described in Mechanical item 3. Ductwork would be distributed to all spaces requiring ventilation.

6) Observed deficiency: Toilet exhaust grille not functional. Toilet exhaust is required per New York State Mechanical Code. Overhaul & test entire toilet exhaust.

Recommended fix #1: The entire exhaust ductwork system to be surveyed by Cameron Engineering and evaluated for re-use. Portions which are deemed not useful would be replaced.

Recommended fix #2: A new exhaust fan would be installed, see previous Mechanical item 2.

7) Observed deficiency: Piping & utility penetrations between apparatus floor & adjacent egress corridor not fireproofed as per New York State Building and Mechanical Code. This is a potential fire hazard.



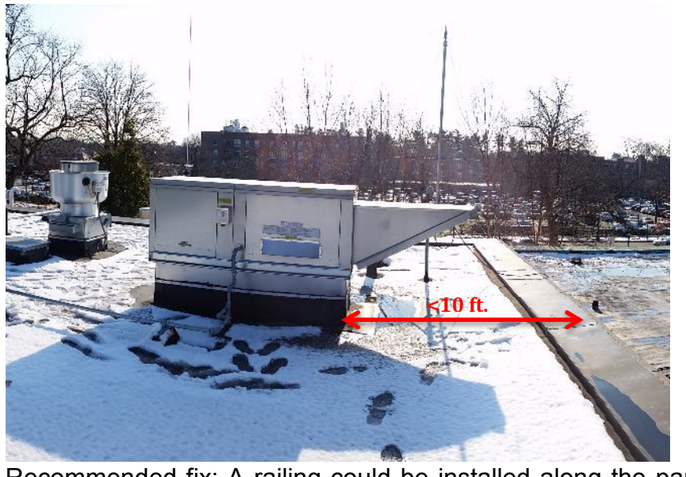
Recommended fix: Fireproofing should be applied to all penetrations through a fire-rated assembly. 3M Fire Barrier CP 25 caulk (or a UL listed equivalent) may be utilized and applied as per its UL listing.

iii) Roof

8) Observed deficiency: Kitchen make-up air unit intake is less than 10-feet from sanitary vent, separate to minimum distance required as per New York State Mechanical Code.

   Recommended fix: An efficient solution is to move the sanitary vent to an acceptable distance from all outdoor air intakes. However, an OSHA railing would still be required, see Mechanical item 9.

9) Observed deficiency: Make-up air unit less than 10-feet from roof edge, which exceeds 30-inches to adjacent low-roof. OSHA and the New York State Building Code require railing/guard for occupational safety.



Recommended fix: A railing could be installed along the parapet near the make-up air unit. Alternatively, the make-up air unit could be relocated, although this would require modifications to the ductwork in the ceiling below and a new roof penetration.

C. Electrical

i) Apparatus Floor

1) Observed Deficiency: Electrical panel & disconnect switch are blocked by oxygen rack & air compressor, 3-feet minimum clearance in front of panel required by National Electric Code (NEC):

Recommended fix: Remove and relocated all items obstructing panel and switch to provide minimum clearance.

2) Observed Deficiency: Disconnect switch above washing machine not readily accessible as required by NEC:

Recommended fix: Relocate switch to readily accessible location near washing machine.

ii) First Floor/Corridor

3) Observed Deficiency: Storage inside existing electrical closet is a violation of NEC.

Recommended fix: Store materials in alternative location

4) Observed Deficiency: Washing machine protrudes into electrical closet.

Recommended fix: Separate electrical room from washing machine with new wall to comply with NEC.

5) Observed Deficiency: No GFI receptacle in bathroom, required by NEC

Recommended Fix: Install new GFI receptacle.

6) Observed Deficiency: Emergency lighting is inadequate per NEC

Recommended Fix: Double the present number of emergency lighting fixtures

iii) Second Floor (Corridor & Community Room)

7) Observed Deficiency: Emergency lighting inadequate, per NEC

Recommended Fix: Same as item #6 above, roughly double number of existing emergency lighting fixtures.

iv) Roof/Terrace

1) Observed Deficiency: Exposed wiring installations along inside of parapet wall & other locations to be enclosed

Recommended Fix: Replace exposed wiring with code-compliant wiring in conduit.

D. Plumbing

i) Apparatus Floor/First Floor

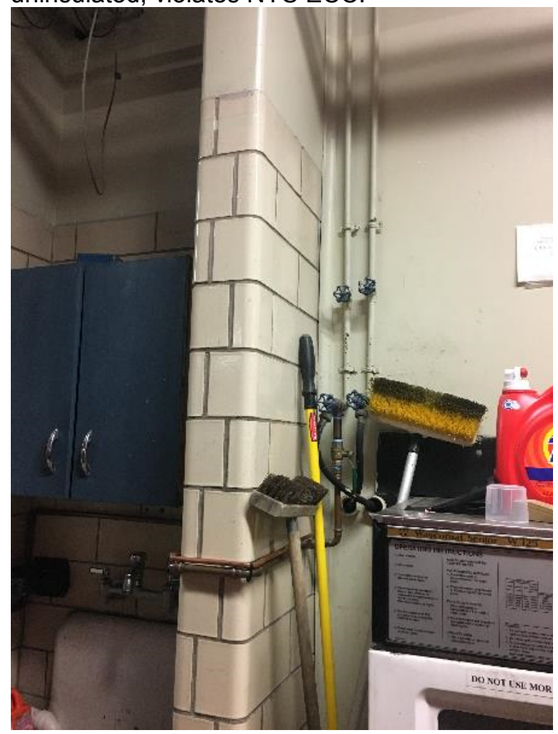
1) Observed Deficiency: Washing machine installation not code-compliant.

Recommended Fix: Replace waste connection with standpipe or connect to trench drain; separate or eliminate washing machine intrusion into electrical closet:

2) Observed deficiency: PVC sanitary piping does not indicate fire rating and may be non-compliant.

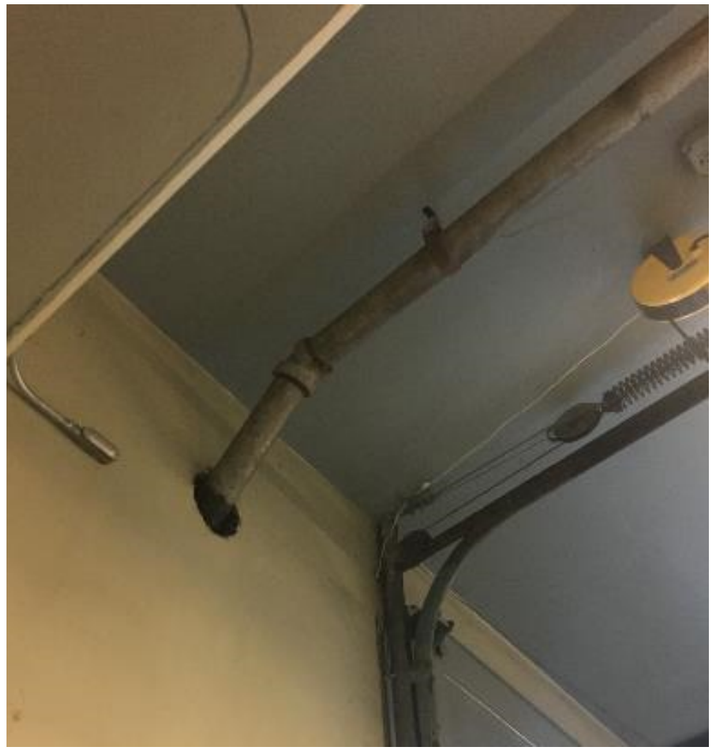
Recommended fix: Verify compliance and label; if existing material is non-compliant, replace with piping conforming to one of the standards listed in Table 702.1 of New York State Plumbing Code. Piping shall be labeled with respected standard.

3) Observed Deficiency Hot and cold piping in apparatus garage is uninsulated, violates NYS ECC:



Recommended Fix: All water piping should be cleaned and thermally insulated in accordance with Table C403.2.10 of the New York State Energy Conservation Code.

4) Observed Deficiency: No fire-stopping around numerous piping penetrations through apparatus garage walls.



Recommended Fix: Fireproofing should be applied to all penetrations through a fire-rated assembly. 3M Fire Barrier CP 25 Caulk (or a UL listed equivalent) may be utilized and applied per its UL listing.

ii) Roof/Terrace

5) Observed Deficiency: No strainer over scupper.

Recommended Fix: Repair interface between flashing, parapet wall & deck

6) Observed Deficiency: Inadequate drainage across roof terrace.

Recommended Fix: Recommend cleaning roof under pavers, and replacing scuppers. Ensure there are no low spots and that roof pitches towards scuppers to allow for proper drainage.

7) Observed Deficiency: Beehive cover missing from drain on upper-roof.

Recommended Fix: Replace with cast iron dome.

2.2 ADA Compliance

ADA refers to the Americans with Disabilities Act which is a Federal regulation. NYS Code also requires compliance with ANSI A117.1 accessible standards. The term “accessible” will refer to compliance with both ADA regulations and ANSI A117.1 Standard.

A. Exterior Entrance

Exterior Entrance Existing Conditions:
Please see EX-100 First Floor Plan.

- **No landing** at exterior walkway along driveway. Not accessible.
- **Steps** at exterior entrance vestibule are not accessible.
- **Accessible door clearances** not provided at exterior entrance vestibule door.

Providing an ADA compliant and accessible main entrance is critical in meeting Federal regulations and State Code.

Exterior Entrance Recommendations for Repair:
Please see A-101 Exterior First Floor Plan.

VBA recommends the following repairs:

1. Provide new exterior accessible walkway and landing to the First Floor elevation.
2. Modify vestibule walls, doors, and door openings, to provide accessible clearances at the exterior entrance vestibule door.

Figure 2.2_1 Exterior Entrance - Walkway Not Accessible

Figure 2.2_2 Exterior Entrance - Steps Not Accessible

B. Interior Route & Bathroom

Interior Route & Bathroom Existing Conditions:
Please see EX-100 First Floor Plan and EX-101 Second Floor Plan.

1. First Floor:

- **Accessible door clearances** not provided at main entrance vestibule door.
- **Accessible hardware** not provided at main entrance and police station vestibule egress doors.
- **Public toilet room** is not accessible. Accessible fixture and door clearances not provided.

Figure 2.2_3 First Floor Toilet

2. **Second Floor:**
   - **Men's accessible toilet stall** does not provide adequate clearance inside and outside the stall.
   - **Meeting Room** entrance is not accessible. Steps at door.
   - **Rooftop terrace access** is not accessible. Steps at door.

Providing an ADA compliance and accessibility to public bathrooms and spaces is critical in meeting Federal regulations and State Code.

Interior Route & Bathrooms Recommendations for Repair:
Please see A-100 First Floor Plan - Options A, B and C and A-102 Second Floor Plan.

VBA recommends the following repairs:
1. Modify vestibule walls, doors, and door openings to provide accessible clearances.
2. Provide accessible hardware to egress doors.
3. Modify existing bathroom and shower room configurations to provide accessible public bathroom. *Please see A-100 First Floor Plan - Options A, B and C.*
4. Modify existing Men's toilet stall to be accessible.
5. Modify Meeting Room entrance steps and provide an accessible lift.
6. Provide accessible ramp at Rooftop Terrance access.

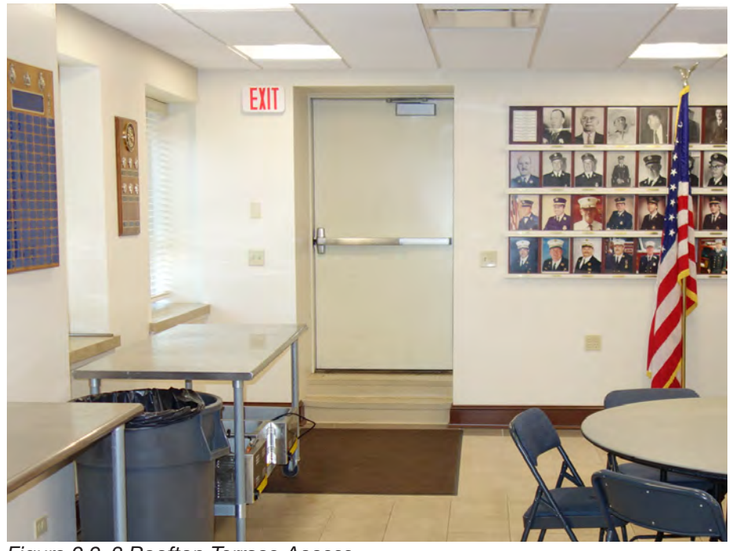


Figure 2.2_3 Rooftop Terrace Access

Figure 2.2_4 Meeting Room Entrance Door

2.3 Facades

Firehouse #1 is a brick 2-story building with aluminum windows, limestone coping stones, limestone window sills and surrounds. In the following sections the facades' major and minor issues are outlined. These issues are found to be stemming from systematic water infiltration into the walls.

Figure 2.3_1 Front (West) Facade

Figure 2.3_2 North Facade

A. Parapet Wall

Parapet Wall Existing Conditions:
Please see EX-101 Second Floor Plan.

- **Cracks in limestone coping mortar joints** and failed caulked joints have allowed water to infiltrate the wall and roof system.
- **Horizontal cracks** between the limestone coping and brick has allowed water to infiltrate the terrace side and exterior parapet faces. The water then goes through freeze/thaw cycles and has created mortar failures. The cracks are more pronounced on the terrace parapet face.
- **Vertical cracks** are located randomly throughout the parapet and also generally align under the coping stone joint. Water infiltration and possible thermal movement, especially on the North-South facing parapet walls, have caused differential movement in the parapet.
- **Stepped cracks** along the mortar joints and brick units are found traveling from a vertical crack to the parapet wall corner. Water infiltration, thermal movement and cycles of expansion-contraction have caused differential movement. This is seen in the dislodged coping stone in the corner.
- **No coping stone flashing** visible.
- **No drip edge at the coping stone**. The coping stone is flush with the brick, allowing water to travel to the horizontal mortar joint.
- **Copper cap flashing** is visible, but the embedment into the brick is unknown.
- **Storage shed and Cooler unit** are located close to the parapet wall and is trapping moisture near the wall.

These existing conditions are allowing water into the interior of the wall system, causing **severe failures** of the parapet and whole wall system. This is evident in the deteriorated condition of the interior plaster, steel lintels, door openings, and efflorescence throughout.

Figure 2.3_4 Parapet Wall - Northwest Corner - Horizontal & Vertical Cracks

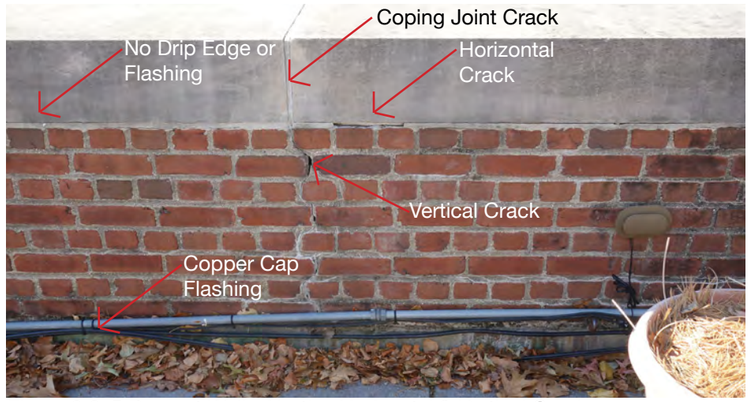


Figure 2.3_5 Parapet Wall - North - Horizontal & Vertical Cracks

Figure 2.3_6 Parapet Wall - East - Storage Shed & Cooler Unit

Parapet Wall Recommendations for Repair:

VBA recommends two options for repair:

1. **Option 1:** Demolish the parapet and rebuild it with proper detailing: coping stone securement, flashing, adequate drip edge, and wall expansion joints. All cracks should be repaired. Option 1 is a long term solution to the water infiltration problem.

2. **Option 2**: Remove and reset the existing coping stone to address failure issues. Provide proper flashing and reset the stone so it has an adequate drip edge. In areas of minor cracking the brick should be re-pointed. In areas of medium severity cracking new brick should be stitched in. In areas of severe cracking the wall should be rebuilt. Control joints should also be installed as needed to address thermal movement. Although Option 2 is less costly, it may only be a short to moderate term solution.

Figure 2.3_7 Front (West) Facade

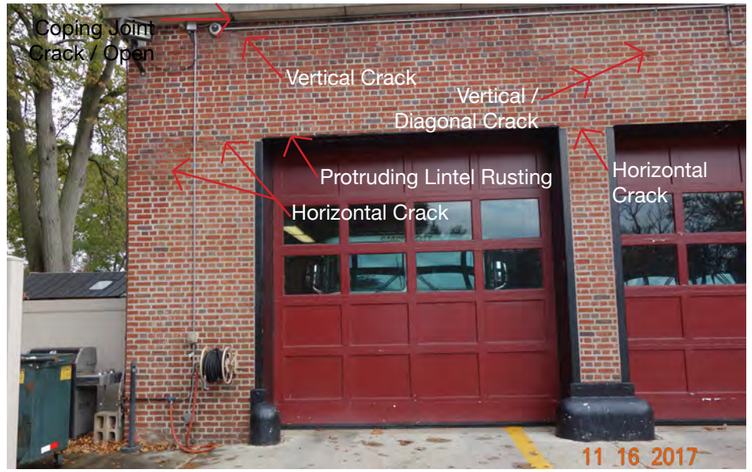


Figure 2.3_8 Front (West) Facade - Horizontal & Vertical Cracks, Lintel Rusting

B. Brick and Limestone

1. **Front (West) Apparatus Door Facade Existing Conditions:**
   - **Horizontal and vertical cracking** along the lintel line from the Apparatus door opening up to the Parapet Wall and between door openings. The cracks and movement in the wall are related to the lintel.

   - **Lintels** above the Apparatus doors project beyond the brick face, holding water, causing rust and causing the lintels to corrode and expand.

   - **Water infiltration from parapet** allows water to hit the steel lintels, deteriorate and rust.

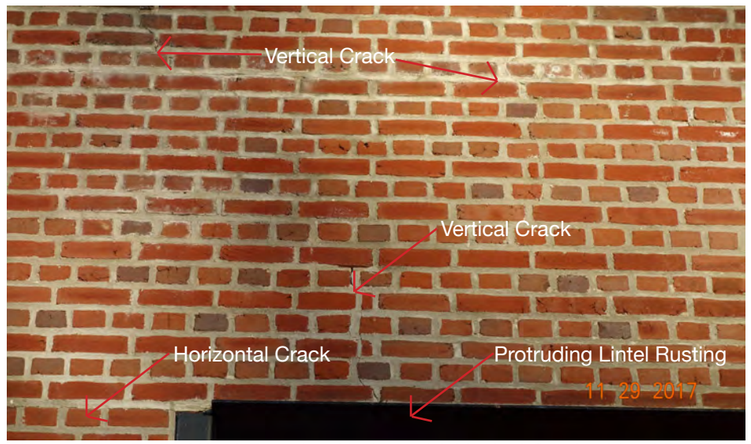


Figure 2.3_9 Front (West) Facade - Horizontal & Vertical Cracks, Lintel Rusting

Figure 2.3_10 Front (West) Facade - Open Coping Stone Joint

2. **Front (South-West) Facade Existing Conditions:**
   - The facade has been previously **completely re-pointed**.
   - **New cracking** is evident, which is most likely due to the failed roof above and open coping stone joints.

3. **East & South Facade Existing Conditions:**
   - **Limestone window surround joints** are open, allowing water to infiltrate and cause the lintels to rust and crack the limestone in places.
   - **All coping stone joints** are severely worn, cracked or open and failing.

Figure 2.3_11 Front (South-West) Facade - Re-pointed with New Cracks

Figure 2.3_13 East Facade - Coping & Limestone Surround Open Joints

Figure 2.3_15 South Facade - Coping & Limestone Surround Open Joints

Figure 2.3_12 Front (South-West) Facade - Coping & Limestone Surround

Figure 2.3_14 East Facade - Coping Stone Open Joints

Figure 2.3_16 South Facade - Limestone Surround Open Joints

4. North Facade Existing Conditions:
Please see EX-202 North Elevation Existing Conditions.

- **Horizontal and vertical cracking** related to the parapet wall and coping stone have allowed water to infiltrate wall, impacting lintels and creating more cracking.
- **Effloresence** blooms are throughout Facade and are caused by the water infiltration.
- A **coating** may have been previously applied to the Facade. Further investigation should be performed.
- **Scuppers** from the Roof Terrace above are not properly flashed, may be clogged with debris and are allowing water to infiltrate the wall. This is causing effloresence and cracks.
- **Storage Sheds** located right against the Facade are not allowing wall to dry out, trapping moisture.
- **Duct penetration** does not appear to be properly flashed as there is water staining below the penetration. There also may not be a lintel.
- Evidence of **re-pointing** on the upper portion of the facade has not arrested the brick and limestone failures.

Figure 2.3_17 North Facade - Storage Sheds

Figure 2.3_18 East Facade - Effloresence, Cracking, Scupper

Figure 2.3_19 East Facade - Limestone Surround Cracks, Effloresence

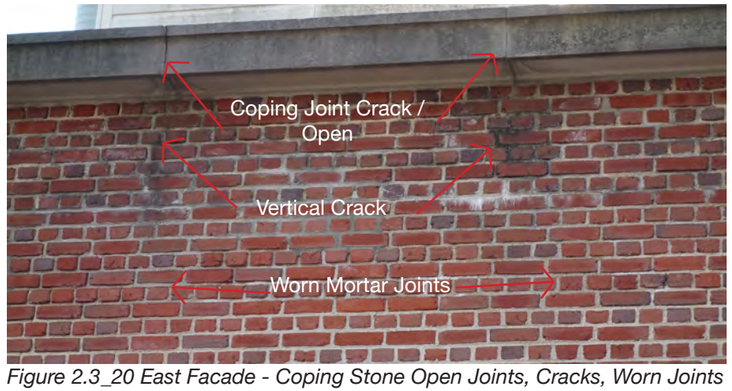


Figure 2.3_20 East Facade - Coping Stone Open Joints, Cracks, Worn Joints

These brick and limestone existing conditions vary from Facade to Facade. The North facade has the most **severe failures**, followed by the West Facade. The East and South Facades are in **fair condition**. Open coping stone joints are allowing water into the interior of the wall system, causing cracking, effloresence, rusting lintels, and limestone surround cracking.

Brick & Limestone Recommendations for Repair:

VBA recommends the following repairs:

1. Replace the Apparatus door lintels with new hot dipped galvanized lintels and provide proper flashing and weep holes.
2. Provide lintel at existing duct penetration.
3. Clean Facades of effloresence.
4. Test North Facade to determine if it is coated.
5. Repair all cracks.
6. Re-point all limestone surround joints. Repair limestone cracks with patching mortar.
7. Re-point all coping stone joints.
8. Relocate storage sheds to allow moisture to escape from wall.

See the following section *2.4 Roof, D. Drainage* for scupper and conductor head repair recommendations.

C. Windows & Lintels

Windows & Lintels Existing Conditions:
Please see EX-100 First Floor Plan & EX-101 Second Floor Plan.

- **Insulated glass unit and rubber gasket** have failed. Condensation in windows. (2nd Floor)
- **Hardware** missing and broken. Hard to open. (2nd Floor)
- **Aluminum stops** are missing. (2nd Floor)
- Certain windows have been **replaced** with plywood or louvers.
- **Window lintel failures** and rusting due to water infiltration.
- **Water infiltration** on the North Facade has caused severe deterioration at the lintels and surrounding finishes.
- **Exterior vestibule** masonry opening lintel rusted.

The windows are beyond their useful life and most likely do not meet the current NYS Energy Conservation Code. Water infiltration into the wall system has caused the steel lintels to deteriorate and rust.

Windows & Lintels Recommendations for Repair:

VBA recommends the following repairs:
1. Replace the window lintels with new hot dipped galvanized lintels and provide proper flashing and weep holes.
2. Windows should be replaced to meet the current NYS Energy Conservation Code.

Figure 2.3_21 South Facade - Failed Insulated Glass Unit, Condensation

Figure 2.3_22 East Facade - Aluminum Stops Missing

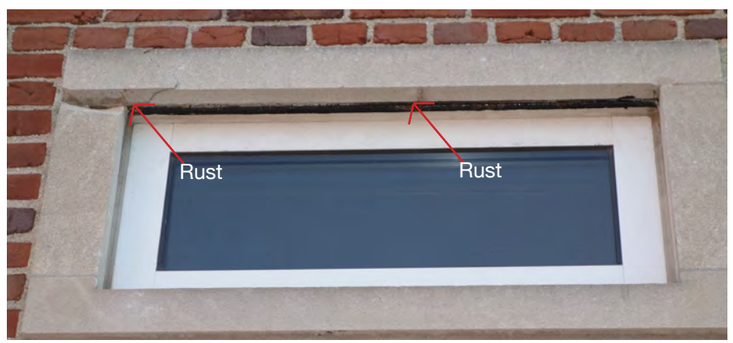


Figure 2.3_23 North Facade - Lintel Paint Deterioration & Rust

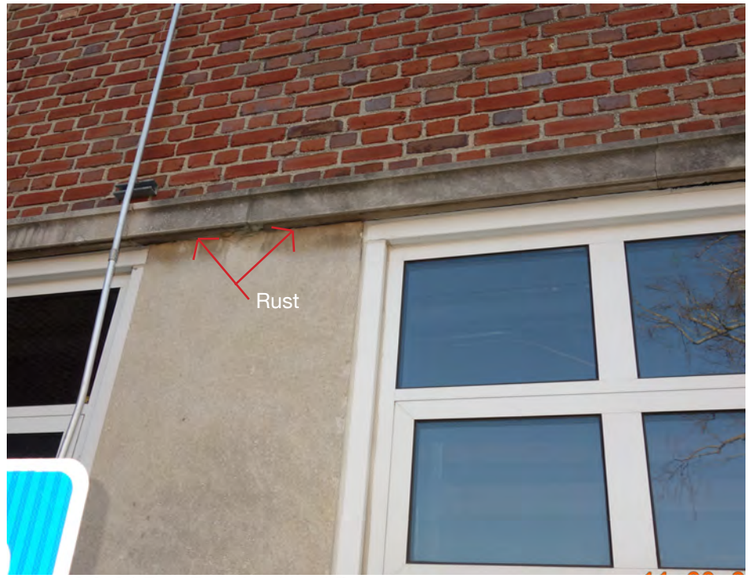


Figure 2.3_24 East Facade - Lintel Rust

Figure 2.3_25 North Facade - Lintel Rust & Finish Deterioration

2.4 Roofs

There are three roof levels at Firehouse #1. The Rooftop Terrace on the Second Floor level, the Lower Roof and the Upper Roof. The Upper Roof appears to have been replaced relatively recently.

A. Flashing

Flashing Existing Conditions:
Please see EX-101 Second Floor Plan and EX-102 Roof Plan.

1. **Rooftop Terrace:**
   - **Copper cap flashing** is not at adequate height and is beyond useful life.
   - It is unknown if there is adequate **Base Flashing** due to the pavers obstructing survey of that area.

2. **Lower Roof:**
   - **Copper coping stone flashing** is beyond its useful life and no expansion joints were provided.
   - **Base Flashing** at curbs and the coping stone are beyond their useful life. Flashing repairs have poor workmanship and quality. Ponding at base in areas.

3. **Upper Roof:**
   - **Copper coping stone flashing** appears to have been replaced relatively recently, but no expansion joints were provided. Some ponding on top of copper coping stone flashing.
   - **Base Flashing** at curbs and the coping stone appear to have been replaced relatively recently. Some air pockets are visible along the perimeter base flashing.

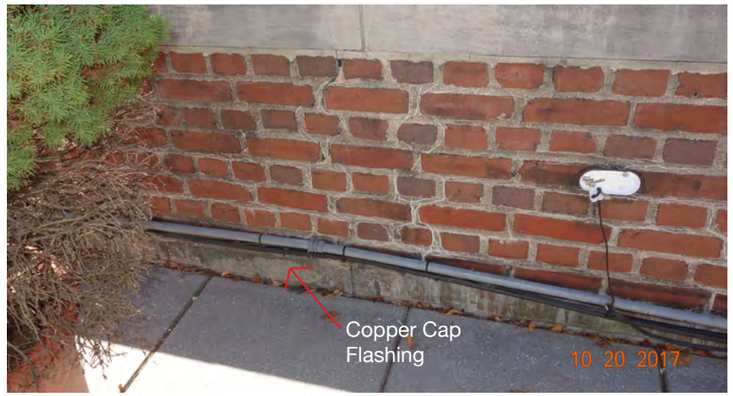


Figure 2.4_1 Rooftop Terrace - Copper Cap Flashing Beyond Useful Life

Figure 2.4_2 Lower Roof - Base Flashing Ponding & Poor Condition

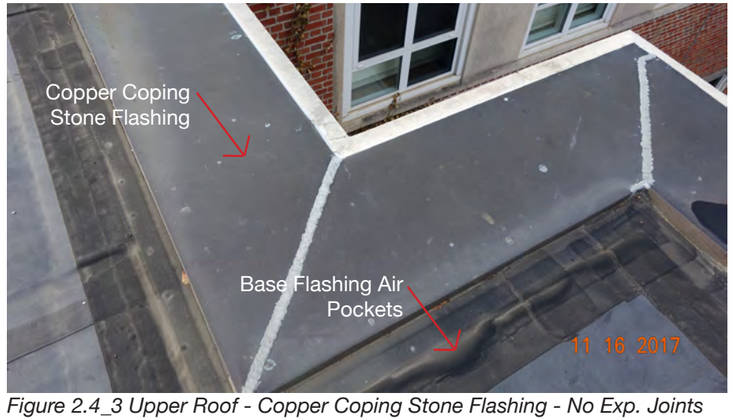


Figure 2.4_3 Upper Roof - Copper Coping Stone Flashing - No Exp. Joints

Flashing Recommendations for Repair:

VBA recommends the following repairs:

1. **Rooftop Terrace:** New base and cap flashing should be provided. This work should be performed with the overall roofing system, parapet wall, and scupper repairs.
2. **Lower Roof:** New base flashing should be provided. The pitch of the roofing materials should not allow water and snow to pond at the base of curbs, etc. New coping stone flashing should be provided with proper detailing to allow for expansion and contraction. This work should be performed with the overall roofing system and limestone coping stone repairs.
3. **Upper Roof:** Repair flashing.

All new flashing materials should be compatible with the recommended roofing repair materials.

B. Roof Materials

Roof Materials Existing Conditions:
Please see EX-101 Second Floor Plan and EX-102 Roof Plan.

1. **Rooftop Terrace:**
   - **Paver Pedestal System** is difficult to maintain and clean out debris under pavers. One paver is cracked.
   - **Roofing materials** under paver system is unknown. There is a black fabric felt applied loosely under pavers.
2. **Lower Roof:**
   - **Roofing materials** are beyond its useful life and poor condition. Ponding throughout roof.
3. **Upper Roof:**
   - **Roofing materials** appears to have been replaced relatively recently and in fair condition. Ponding in two areas of the roof.

Roof Materials Recommendations for Repair:

VBA recommends the following repairs:
1. **Rooftop Terrace:** A new liquid-applied fleece-reinforced roofing system is recommended. This system can be walked upon to avoid pavers and their difficult maintenance.
2. **Lower Roof:** A new multi-ply SBS-Modified Bitumen roofing system is recommended. This work should be performed with the limestone coping stone repairs.
3. **Upper Roof:** Repair roofing in areas of ponding.

All new roof materials should meet the current NYS Energy Conservation Code. Continuous insulation to meet the prescribed R-value (R-30) will be required in all areas insulation is not provided below the roof deck. All new roofing should be pitched for proper drainage to roof drains or scuppers.

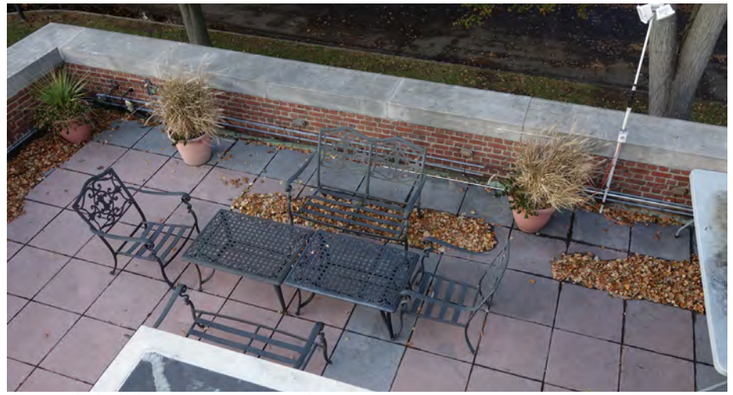


Figure 2.4_4 Rooftop Terrace - Pavers


Figure 2.4_5 Lower Roof - Poor Condition & Ponding

Figure 2.4_6 Upper Roof - Relatively New & Fair Condition

C. Door Sills

Door Sills Existing Conditions:
Please see EX-101 Second Floor Plan.

Rooftop Terrace Door Sills:
- The **height** of the Meeting Room door sill is very low relative to the pavers and the Egress Stair door sill aligns with the pavers. Water and snow that accumulates at the Terrace level may infiltrate into the Meeting Room and Stair.
- If the **new insulation** and roofing level is higher than the sills, the doors will have to be modified.

Figure 2.4_7 Rooftop Terrace - Egress Stair (left) & Meeting Rm (right)

Door Sills Recommendations for Repair:

VBA recommends the following repairs:
1. Provide new metal sill plate, flashing and tie into roof flashing.
2. Modify doors and sills as required to allow for new insulation at roof deck.

D. Drainage

Drainage Existing Conditions:
Please see EX-101 Second Floor Plan and EX-102 Roof Plan.

1. **Rooftop Terrace:**
   - **Debris** is accumulating under the pavers and throughout the paver surface and joints. This is most likely inhibiting proper drainage to the scuppers.
   - **Scuppers and conductor heads** from the Roof Terrace above are not properly flashed, may be clogged with debris and are allowing water to infiltrate the wall. This is causing effloresence and cracks.

2. **Lower Roof:**
   - The **roof pitch** is not allowing for adequate drainage across the roof as ponding is visible throughout.

3. **Upper Roof:**
   - The **roof pitch** is not allowing for adequate drainage in some areas of the roof. Ponding in two areas of the roof.
   - A roof drain cover is missing on one of the drains.

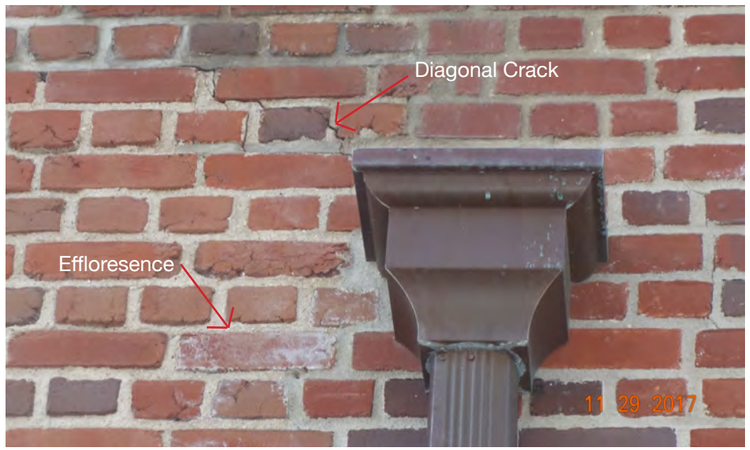


Figure 2.4_8 Scupper - Effloresence & Cracks at Scupper

Figure 2.4_9 Rooftop Terrace - Debris under Paver

Figure 2.4_10 Lower Roof - Inadequate Pitch to Drains & Water Ponding


Figure 2.4_11 Upper Roof - Water Ponding in Areas

Drainage Recommendations for Repair:

VBA recommends the following repairs:

1. **Rooftop Terrace:** New scuppers, conductor heads, and downspouts should be provided. Scuppers to be properly flashed and waterproofed. The new roofing system should be pitched for positive drainage to the new scuppers. This work should be performed with the roofing repairs. Please see roofing material recommendations.
2. **Lower Roof:** Provide new roof drains. This work should be performed with the roofing repairs. Please see roofing material recommendations.
3. **Upper Roof:** Repair roof pitch and taper at areas of water ponding. Provide new roof drain cover.

2.5 Recommended Upgrades

A. Architectural

Architectural Existing Conditions:

- **Apparatus Room** glazed wall tile has cracks behind ladder truck. Previous patches visible.
- **Apparatus Room plaster** wall has cracks.
- **Exterior vestibule stucco** ceiling has large crack.
- **Second Floor HVAC Room** acoustic tile ceiling has water stains.

Figure 2.5_1 Apparatus Room - Glaze Wall Tile Cracks

Architectural Recommendations for Upgrades:

VBA recommends the following upgrades:

1. Repair glazed wall tile.
2. Repair plaster wall finishes.
3. Repair stucco ceiling.
4. Repair and provide new acoustic ceiling tile.

B. Mechanical

i) Apparatus Floor

1) Provide make-up air supply to shower room (relevance pending relocating shower room off of Apparatus Floor, see Section 2.2.b)

2) Electric baseboard in shower room, move to higher elevation or replace with steam (similar to above item, pending per new shower location as described in Section 2.2.b). In New York electric heating carries a higher operating cost.

ii) First Floor Corridor

3) First floor steam condensate pump vent discharges onto apparatus floor, recommend this be moved to discharge to out-of-doors. Discharging in an occupiable space presents a burn hazard and may lead to humidity issues.

C. Electrical

i) First Floor Corridor

1) Junction box in corridor is missing cover, wiring exposed. Close box & conceal wiring.

ii) General Upgrades

2) Evaluate lighting system for upgrade to LED.

D. Plumbing

i) Apparatus Floor/First Floor

1) Replace all non-compliant PVC sanitary piping with fire-rated compliant material. Recommend replacing with more durable material, i.e. cast iron.

ii) Roof & Terrace

2) Open/unclog roof drain & evacuate piping for potential clogs or damage.

E. Exterior

i) General Upgrades

1) Recommend adjust downspouts to discharge stormwater runoff from roof away from north building façade

2) Adjust downspout at northeast corner of building to discharge water underground or in alternate location to avoid splashing onto existing electrical conduits, gas utility & valves and other obstructions.

2.6 Cost Estimate

GCFD Firehouse #1 Preliminary Cost Estimate*

Scope of Work Item		Amount		
2.1 National, State & Local Codes				
a. Fire Stopping & Fire Safing	$	111,700		
b. Mechanical	$	74,000		
c. Electrical	$	31,800		
d. Plumbing	$	19,000		
National, State & Local Codes TOTAL	**$**	**236,500**		
2.2 ADA Compliance				
a. Exterior Entrance	$	104,000		
b. Interior Route	$	104,000		
Second Floor Bathroom Repairs	$	29,300		
First Floor Bathroom Option A	$	114,300		
First Floor Bathroom Option B		*not included*	$	217,800
First Floor Bathroom Option C		*not included*	$	132,900
ADA Compliance TOTAL + OPTION A	**$**	**351,600**		
2.3 Facades				
a. Parapet	$	305,500		
b. Brick & Limestone	$	229,100		
c. Windows & Lintels	$	440,000		
Facades TOTAL	**$**	**974,600**		
2.4 Roofs				
a. Flashing	$	7,000		
b. Roof Materials	$	216,900		
c. Door Sills	$	33,300		
d. Drainage	$	2,100		
Roofs TOTAL	**$**	**259,300**		
Firehouse #1 TOTAL + ADA Option A	**$**	**1,822,000**		

2.5 Recommended Upgrades		
a. Architectural	$	31,000
Upper Roof Replacement	$	156,900
b. Mechanical	$	7,500
Roof Railing	$	74,800
c. Electrical	$	7,400
LED Lighting Upgrade	$	260,600
d. Plumbing	$	29,300
e. Exterior Drainage	$	7,200
Recommended Upgrades TOTAL	**$**	**574,700**

***10% General Conditions, 10% Overhead & Profit, 4% Escalation, & 15% Design Contingency Built In**

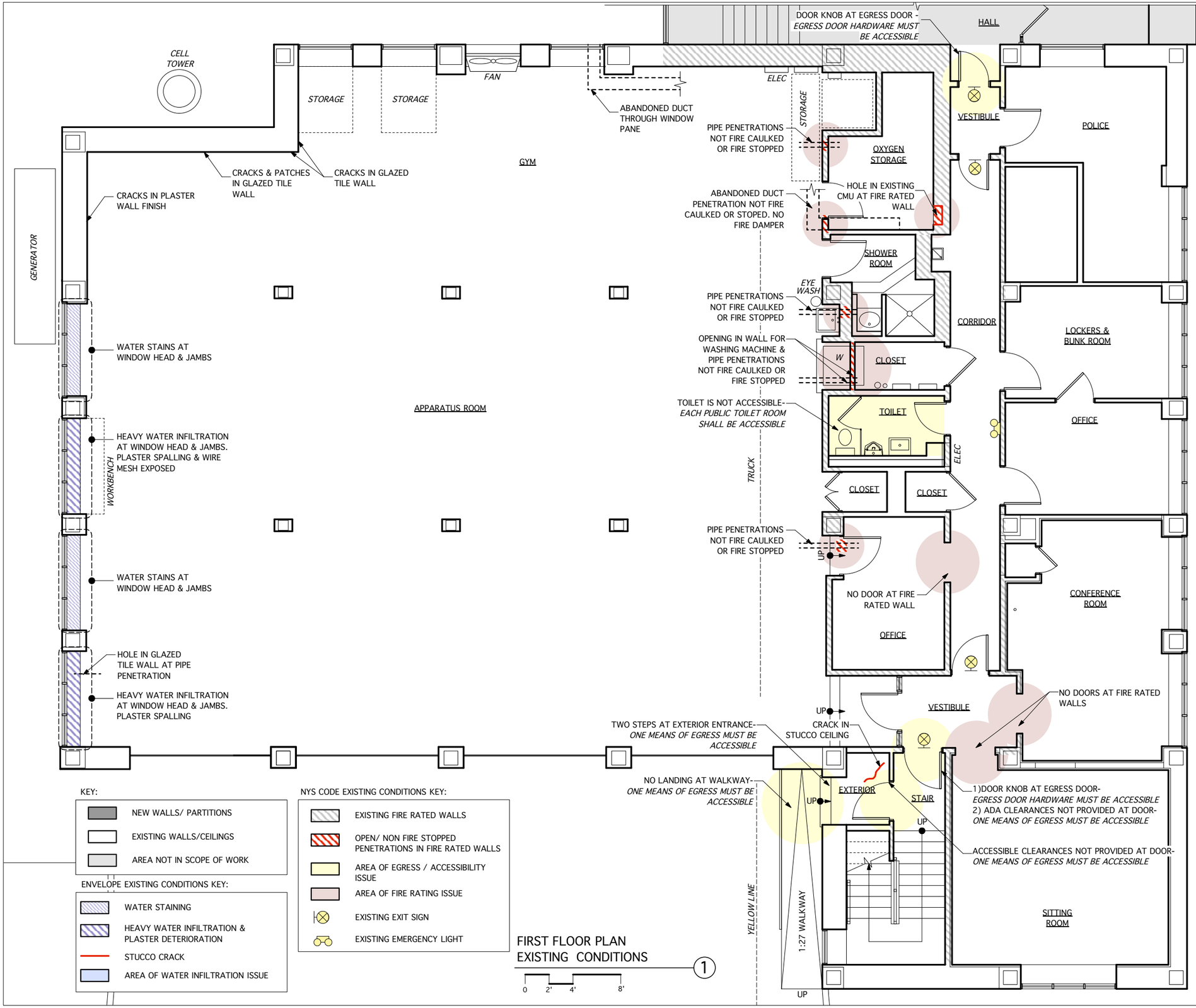
3.0 APPENDIX

3.1 Architectural

EX-100 First Floor Plan Existing Conditions
EX-101 Second Floor Plan Existing Conditions
EX-102 Roof Plan Existing Conditions

EX-202 North Elevation Existing Conditions

A-100.0A First Floor Plan Option A
A-100.0B First Floor Plan Option B
A-100.0C First Floor Plan Option C
A-101.EXT First Floor Plan - ADA Entrance



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Drawing Title

FIRST FLOOR PLAN EXISTING CONDITIONS

Drawing Number

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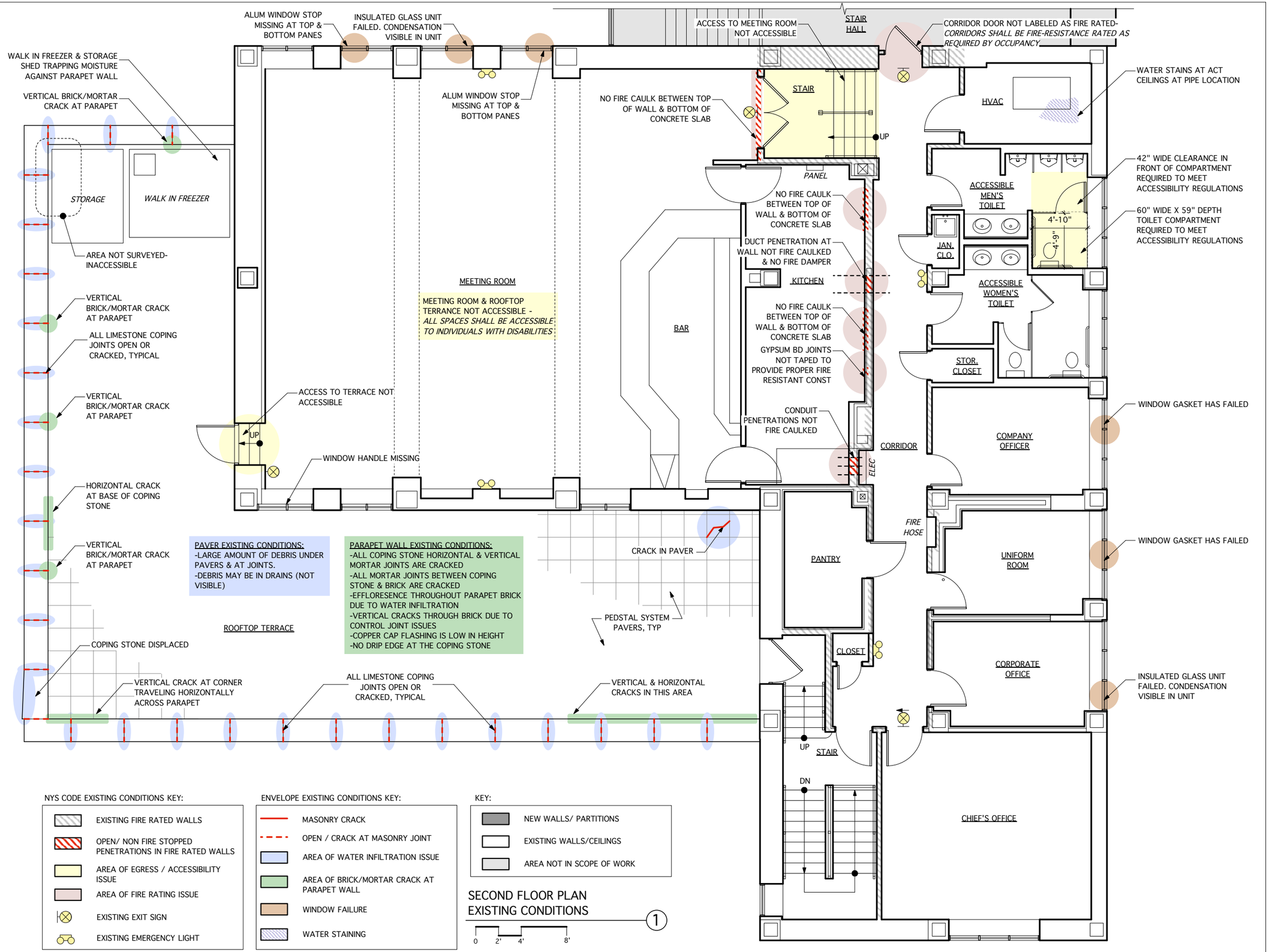

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SECOND FLOOR PLAN EXISTING CONDITIONS

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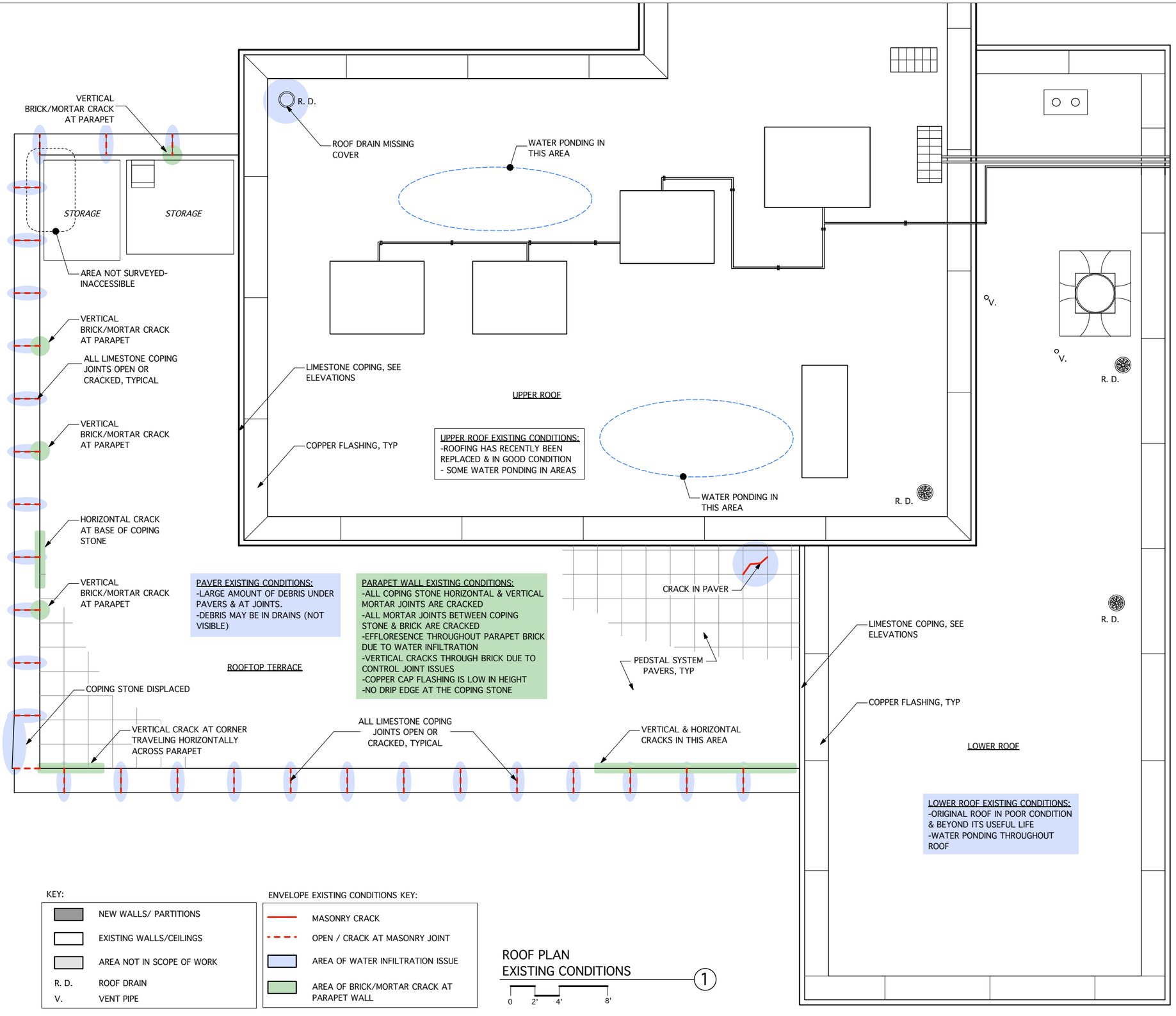

KEY:

	NEW WALLS/ PARTITIONS
	EXISTING WALLS/CEILINGS
	AREA NOT IN SCOPE OF WORK
R. D.	ROOF DRAIN
V.	VENT PIPE

ENVELOPE EXISTING CONDITIONS KEY:

	MASONRY CRACK
	OPEN / CRACK AT MASONRY JOINT
	AREA OF WATER INFILTRATION ISSUE
	AREA OF BRICK/MORTAR CRACK AT PARAPET WALL

ROOF PLAN
EXISTING CONDITIONS 1

0 2' 4' 8'

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ROOF PLAN EXISTING CONDITIONS

Drawing Number

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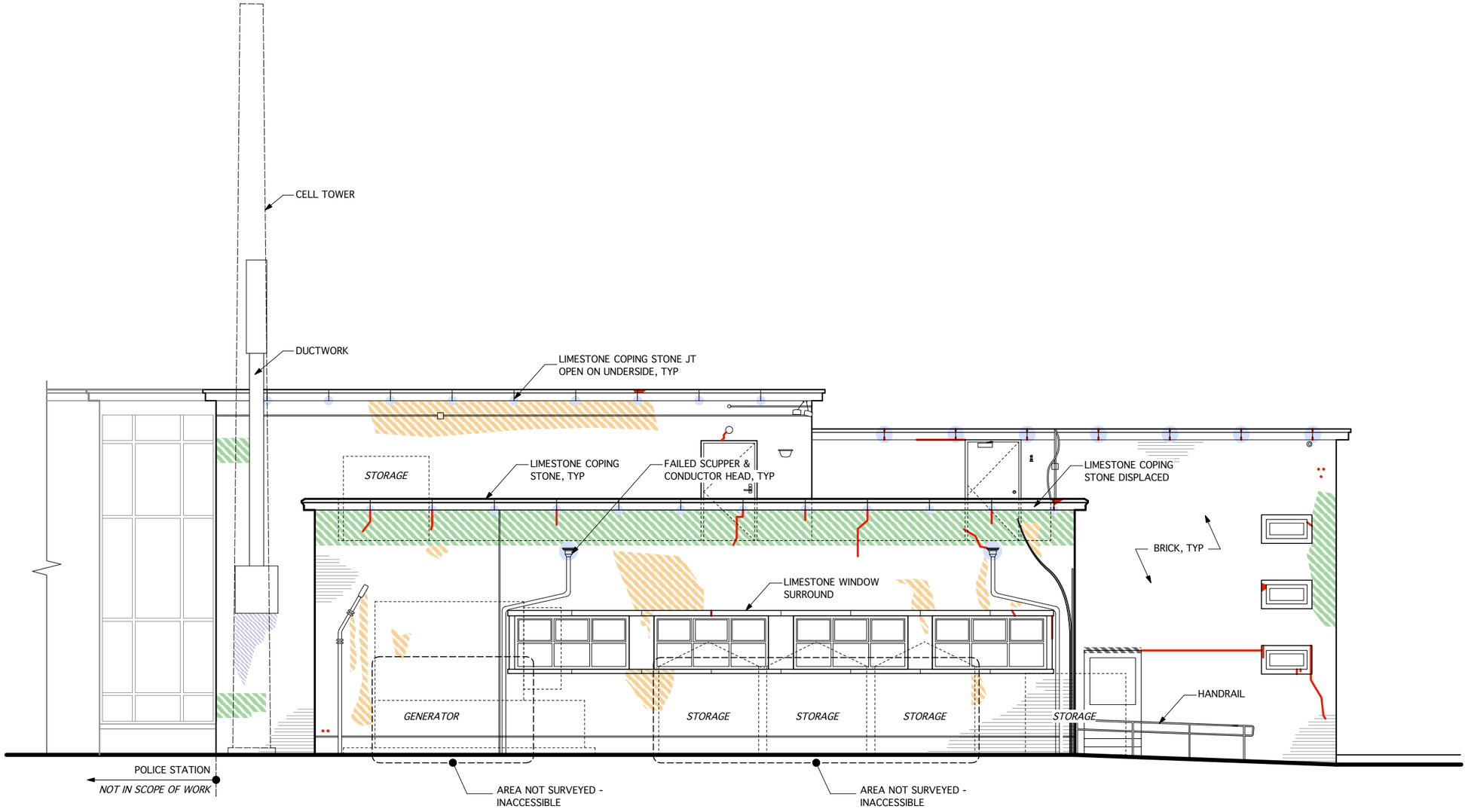

ENVELOPE EXISTING CONDITIONS KEY:

- MASONRY CRACK
- OPEN / CRACK AT MASONRY JOINT
- SPALL / MISSING MASONRY
- LINTEL RUST VISIBLE
- EFFLORESCENCE
- WORN MORTAR JOINTS
- MASONRY / WATER STAINING
- AREA OF WATER INFILTRATION ISSUE UNDERSIDE JOINT OF COPING OPEN

NORTH ELEVATION
EXISTING CONDITIONS 1

0 2' 4' 8'

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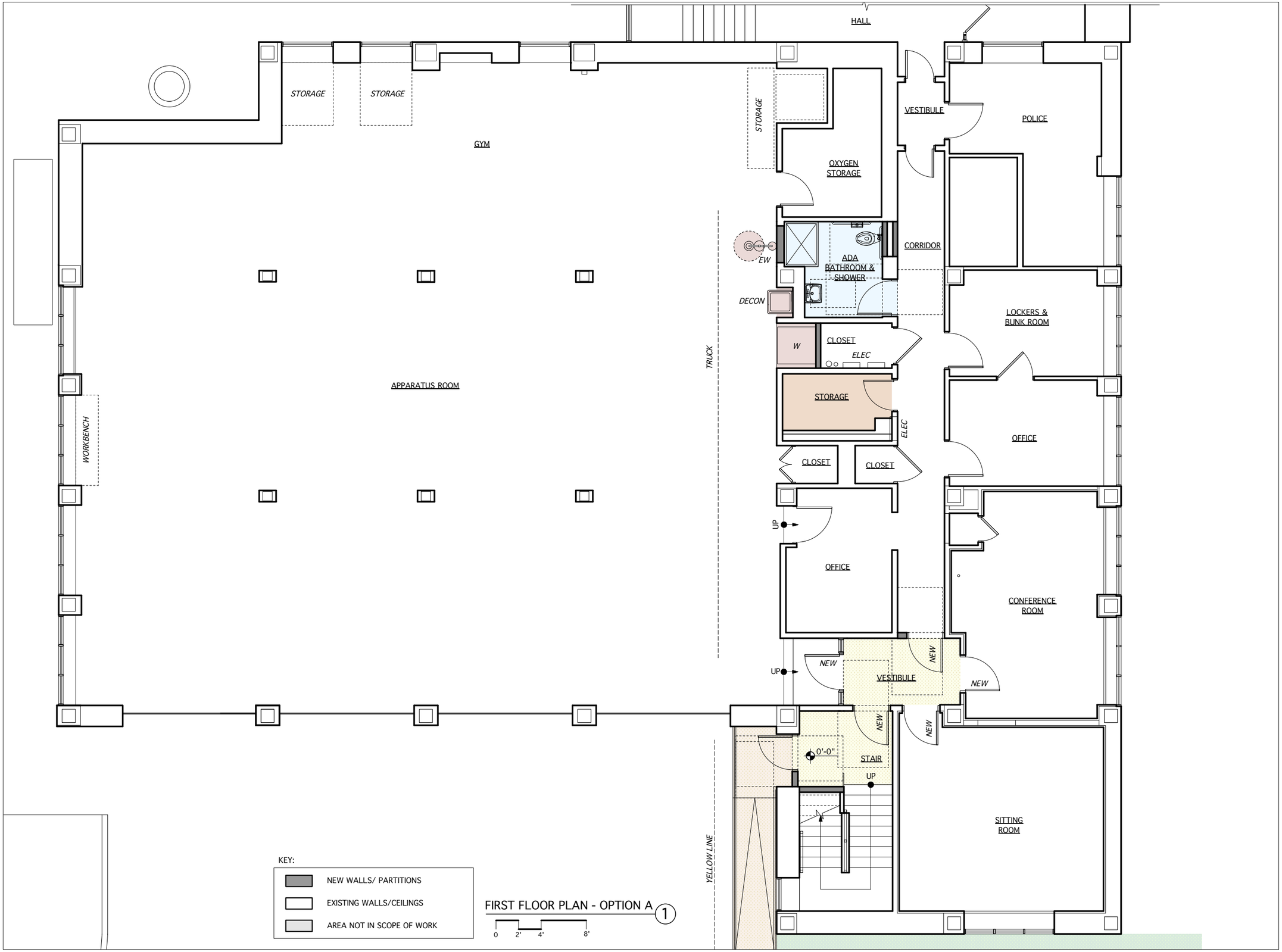
NORTH ELEVATION EXISTING CONDITIONS

Drawing Number

EX-202.00



FIRST FLOOR PLAN - OPTION A (1)

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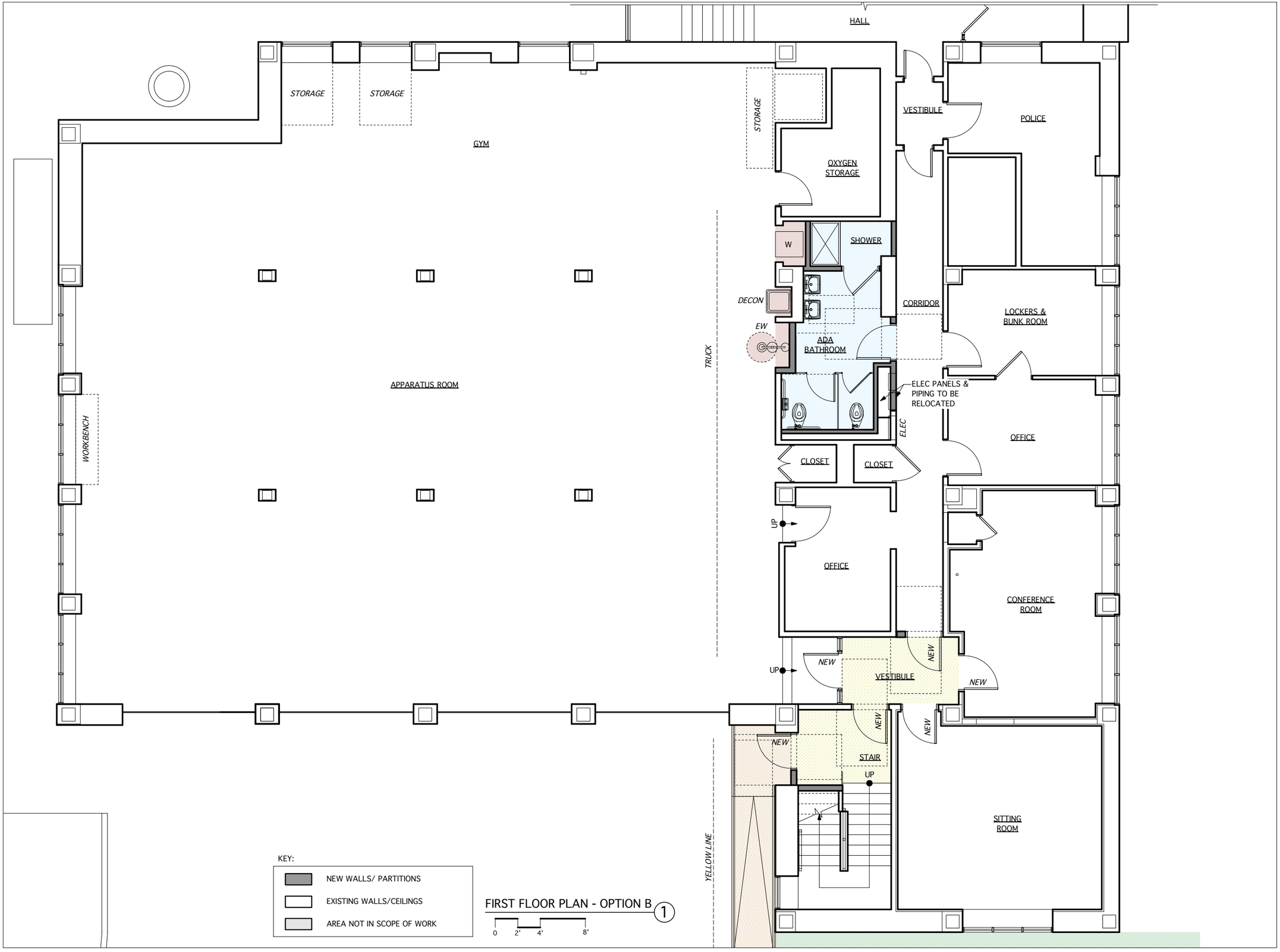
Drawing Number

A-100.0A



FIRST FLOOR PLAN - OPTION B (1)

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FIRST FLOOR PLAN OPTION B

Drawing Number

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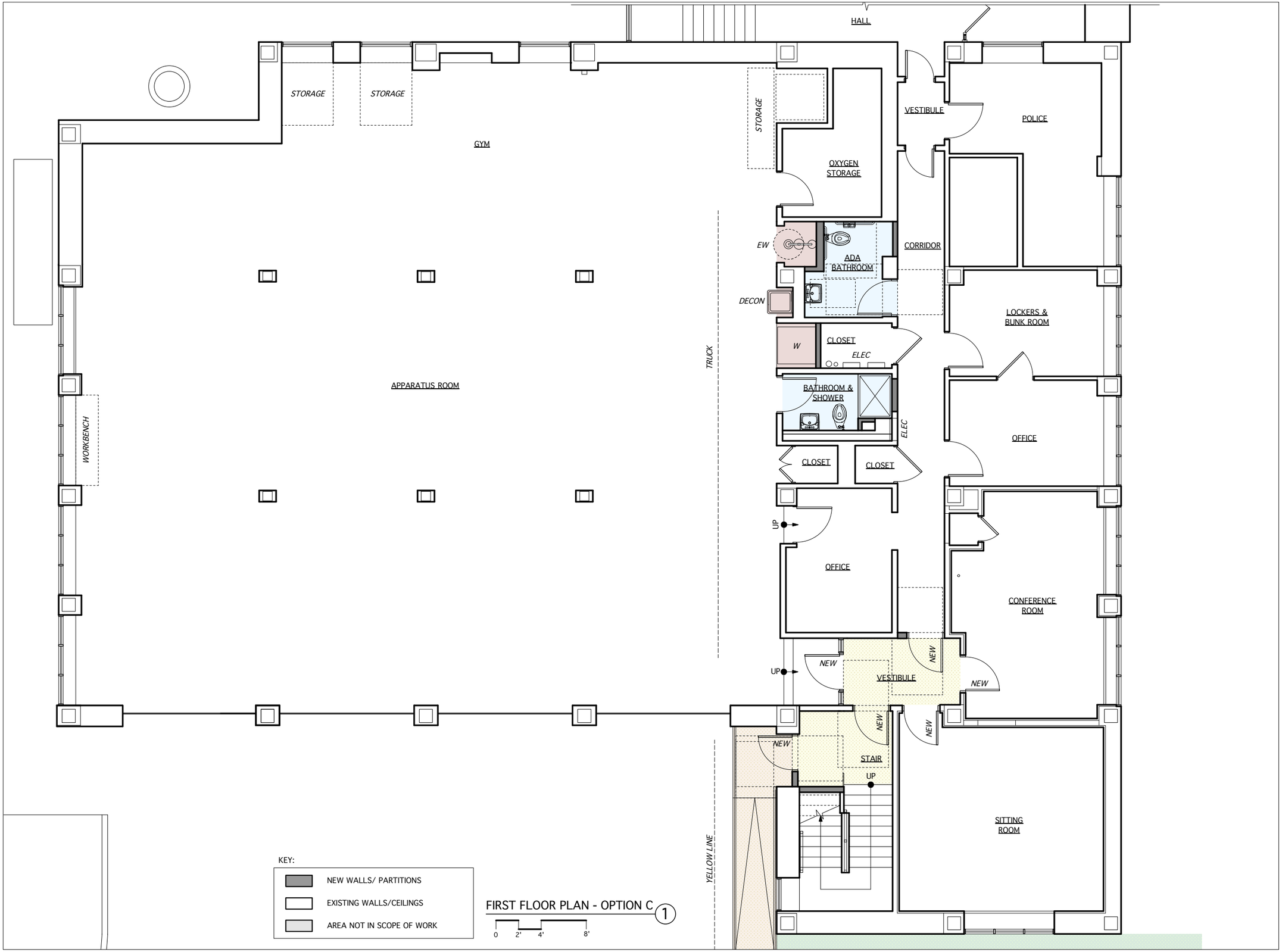

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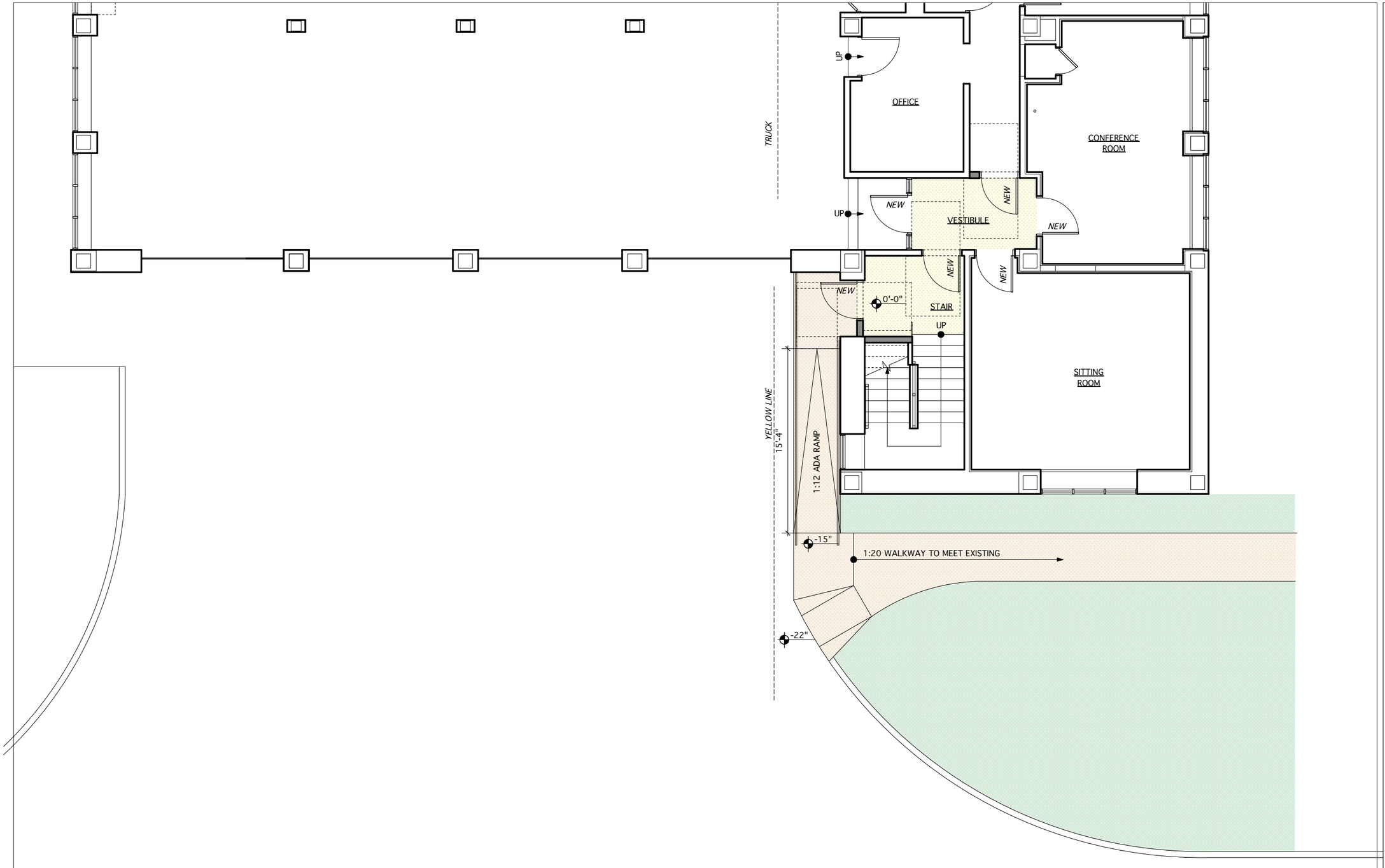
Drawing Title

FIRST FLOOR PLAN OPTION C

Drawing Number

A-100.0C



FIRST FLOOR PLAN - ADA ENTRANCE

1

0 2' 4' 8'

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FIRST FLOOR PLAN - ADA ENTRANCE

Drawing Number

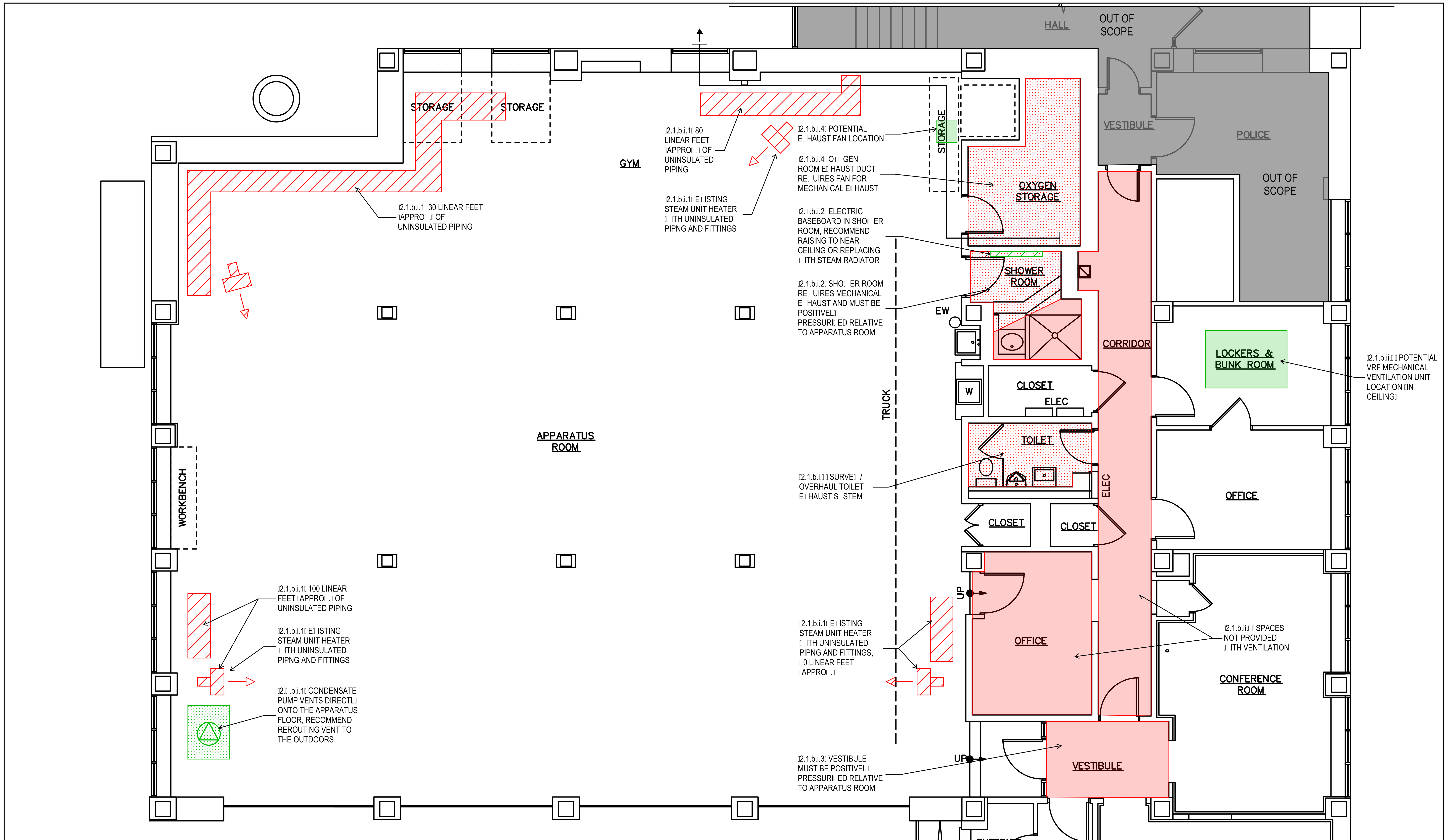
A-101.EXT

3.0 APPENDIX

3.2 Mechanical

M-101 Mechanical First Floor Plan

M-103 Mechanical Roof Plan



KEY - NEW YORK STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LACKING MECHANICAL EXHAUST
- LACKING MECHANICAL VENTILATION / PRESSURIZATION
- OSHA / FALL HAZARD
- AIR INTAKE TOO CLOSE TO CONTAMINANT SOURCE
- HAZARDOUS PIPING CONFIGURATION
- EQUIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

KEY - RECOMMENDED UPGRADES

- EQUIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NEW EQUIPMENT
- SEVERELY CORRODED PIPING
- TRIPPING HAZARD
- INADEQUATE HEATING
- LEAKING PIPING / FITTING
- DAMAGED CHIMNEY BREECHING

*The above drawing keys are applicable to the mechanical drawings only. Refer to each trade's drawing key for trade-specific symbols.

O:\CE2814 - GDFD\HVAC\FIRE HOUSE 1\M-101 MECHANICAL FIRST FLOOR PLAN.dwg, Date:January 17, 2018, Psetup:Oce 1 Full Size, Plotted by:Christian Newland

GARDEN CITY FIRE DEPARTMENT
351 Stewart Avenue, Garden City, NY 11530

CAMERON ENGINEERING & ASSOCIATES, LLP
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45 West 36th Street, 3rd Floor, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
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NORTH

Project

FIREHOUSE #1

347 Stewart Ave
Garden City, NY 11530

Drawing Title

MECHANICAL FIRST FLOOR PLAN

Drawing Number

M-101

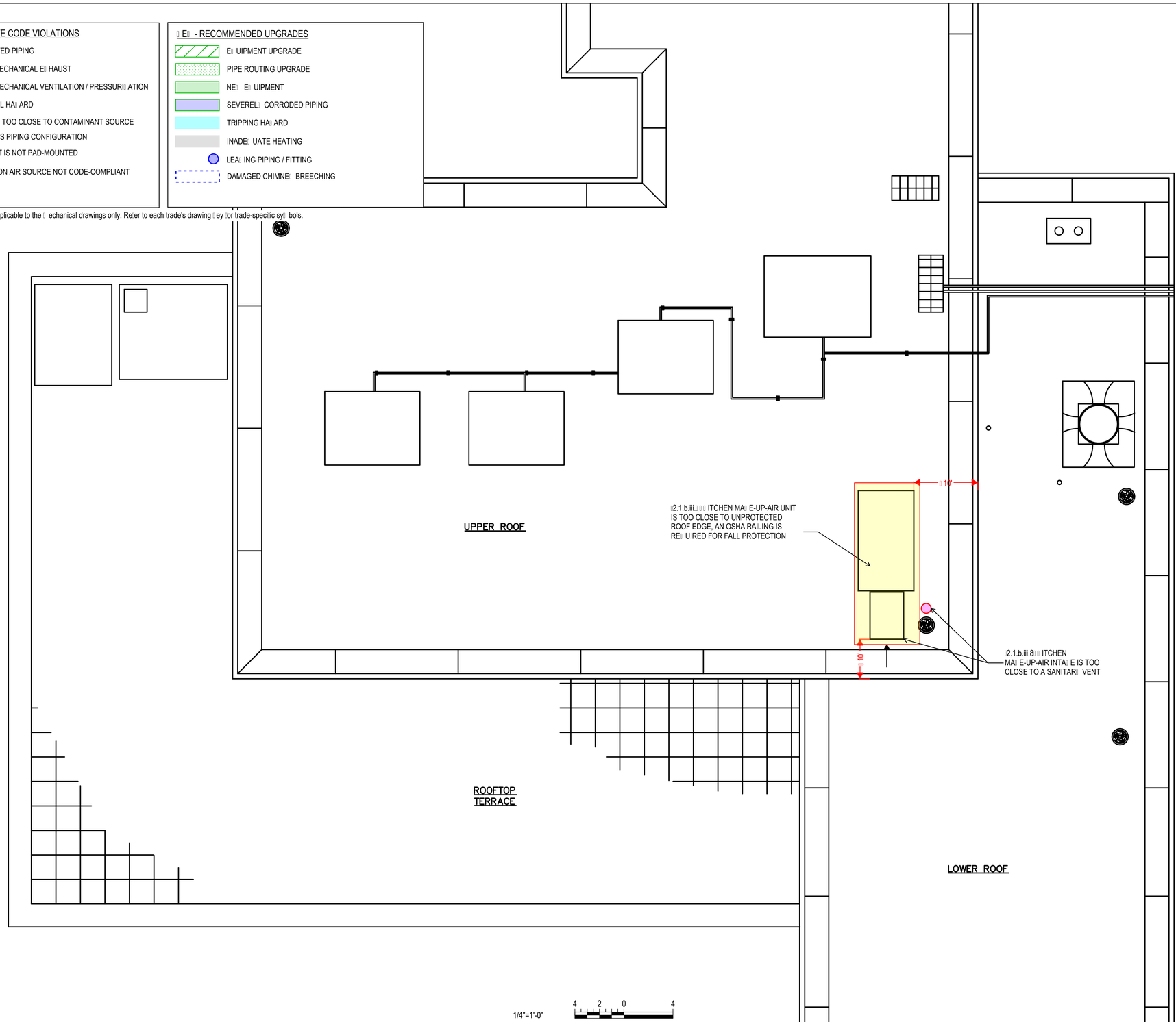
E - NE OR STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LAC ING MECHANICAL E HAUST
- LAC ING MECHANICAL VENTILATION / PRESSURI ATION
- OSHA / FALL HA ARD
- AIR INTA E TOO CLOSE TO CONTAMINANT SOURCE
- HA ARDOUS PIPING CONFIGURATION
- E UIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

E - RECOMMENDED UPGRADES

- E UIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NE E UIPMENT
- SEVEREL CORRODED PIPING
- TRIPPING HA ARD
- INADE UATE HEATING
- LEA ING PIPING / FITTING
- DAMAGED CHIMNE BREECHING

The abo e drawing eys are applicable to the echanical drawings only. Re er to each trade's drawing ey or trade-spec ic sy bols.



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FIREHOUSE #1

347 Stewart Ave
Garden City, NY 11530

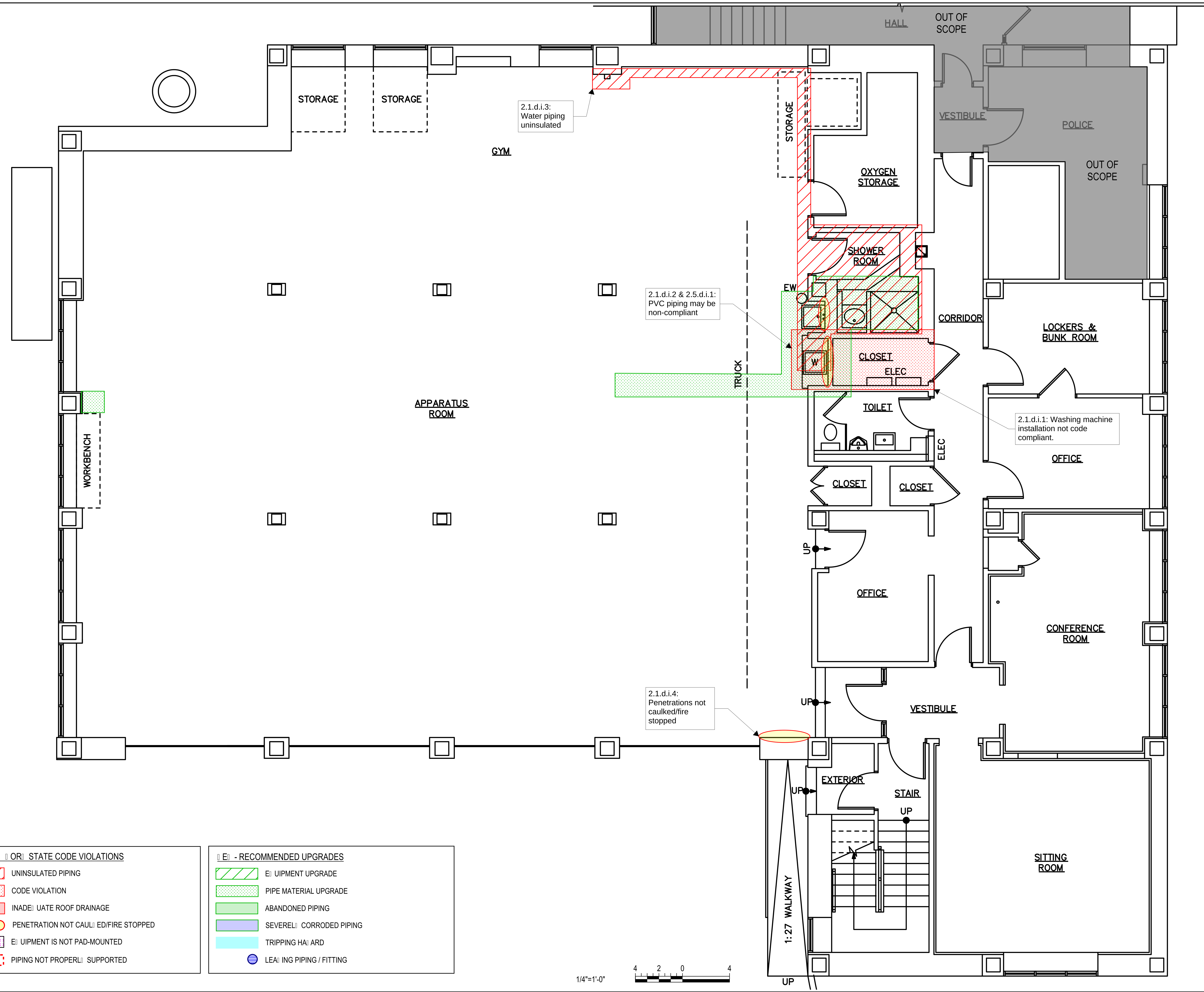
Drawing Title

MECHANICAL ROOF PLAN

Drawing Number

M-103

3.0 APPENDIX



KEY - NEW YORK STATE CODE VIOLATIONS

- UNINSULATED PIPING
- CODE VIOLATION
- INADEQUATE ROOF DRAINAGE
- PENETRATION NOT CAULKED/FIRE STOPPED
- EQUIPMENT IS NOT PAD-MOUNTED
- PIPING NOT PROPERLY SUPPORTED

KEY - RECOMMENDED UPGRADES

- EQUIPMENT UPGRADE
- PIPE MATERIAL UPGRADE
- ABANDONED PIPING
- SEVERELY CORRODED PIPING
- TRIPPING HAZARD
- LEAKING PIPING / FITTING

GARDEN CITY
FIRE DEPARTMENT
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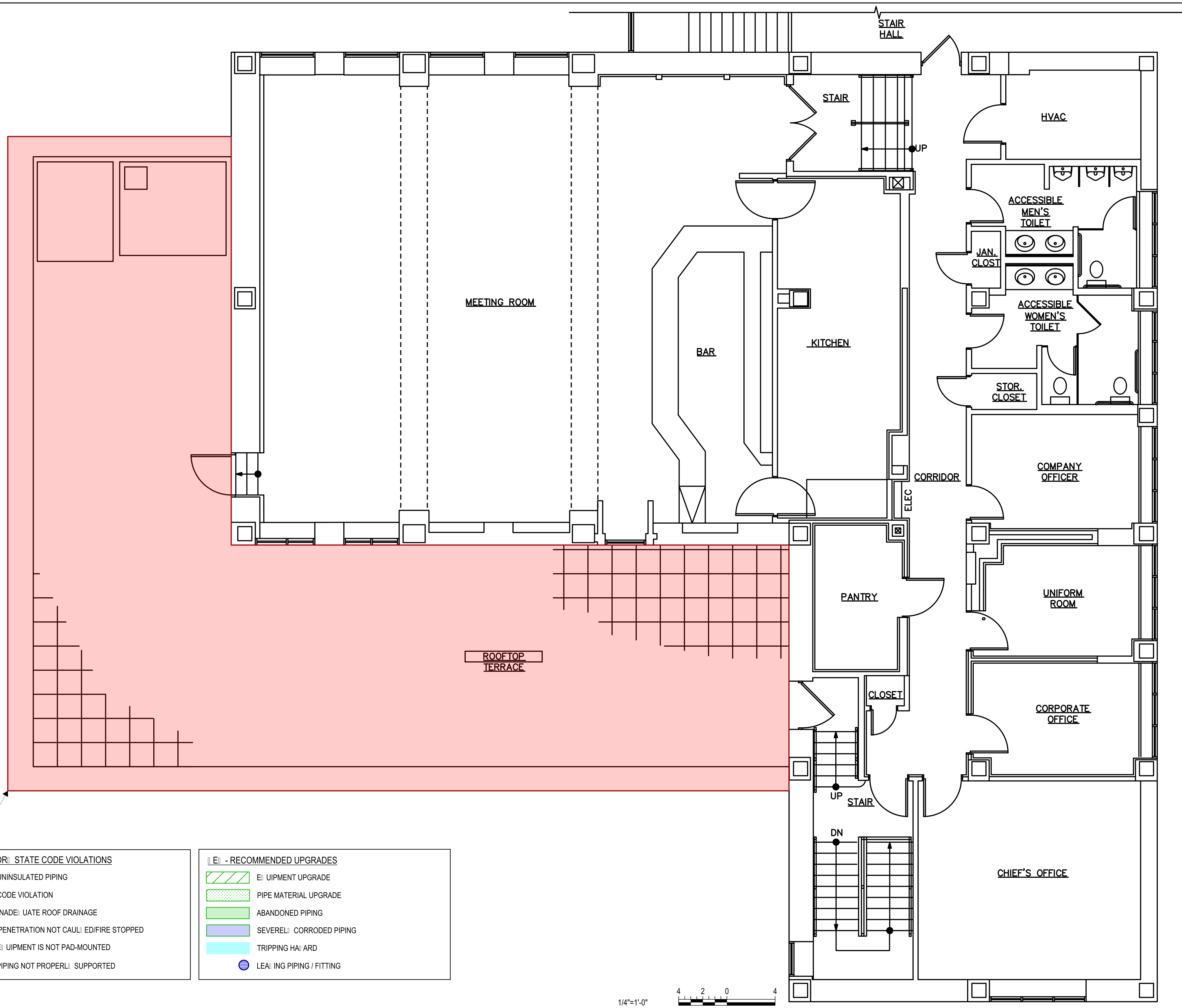
Garden City, NY 11530

Drawing Title

PLUMBING FIRST FLOOR PLAN

Drawing Number

P-101.00



2.1.d.ii.6: Inadequate drainage

▯E▯ - NE▯ ▯OR▯ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- CODE VIOLATION
- INADE▯UATE ROOF DRAINAGE
- PENETRATION NOT CAUL▯ED/FIRE STOPPED
- E▯UIPMENT IS NOT PAD-MOUNTED
- PIPING NOT PROPERL▯ SUPPORTED

▯E▯ - RECOMMENDED UPGRADES

- E▯UIPMENT UPGRADE
- PIPE MATERIAL UPGRADE
- ABANDONED PIPING
- SEVEREL▯ CORRODED PIPING
- TRIPPING HA▯ARD
- LEA▯ING PIPING / FITTING

1/4"=1'-0"

4 2 0 4

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NORTH

Project

FIREHOUSE #1

347 Stewart Ave
Garden City, NY 11530

Drawing Title

PLUMBING SECOND FLOOR PLAN

Drawing Number

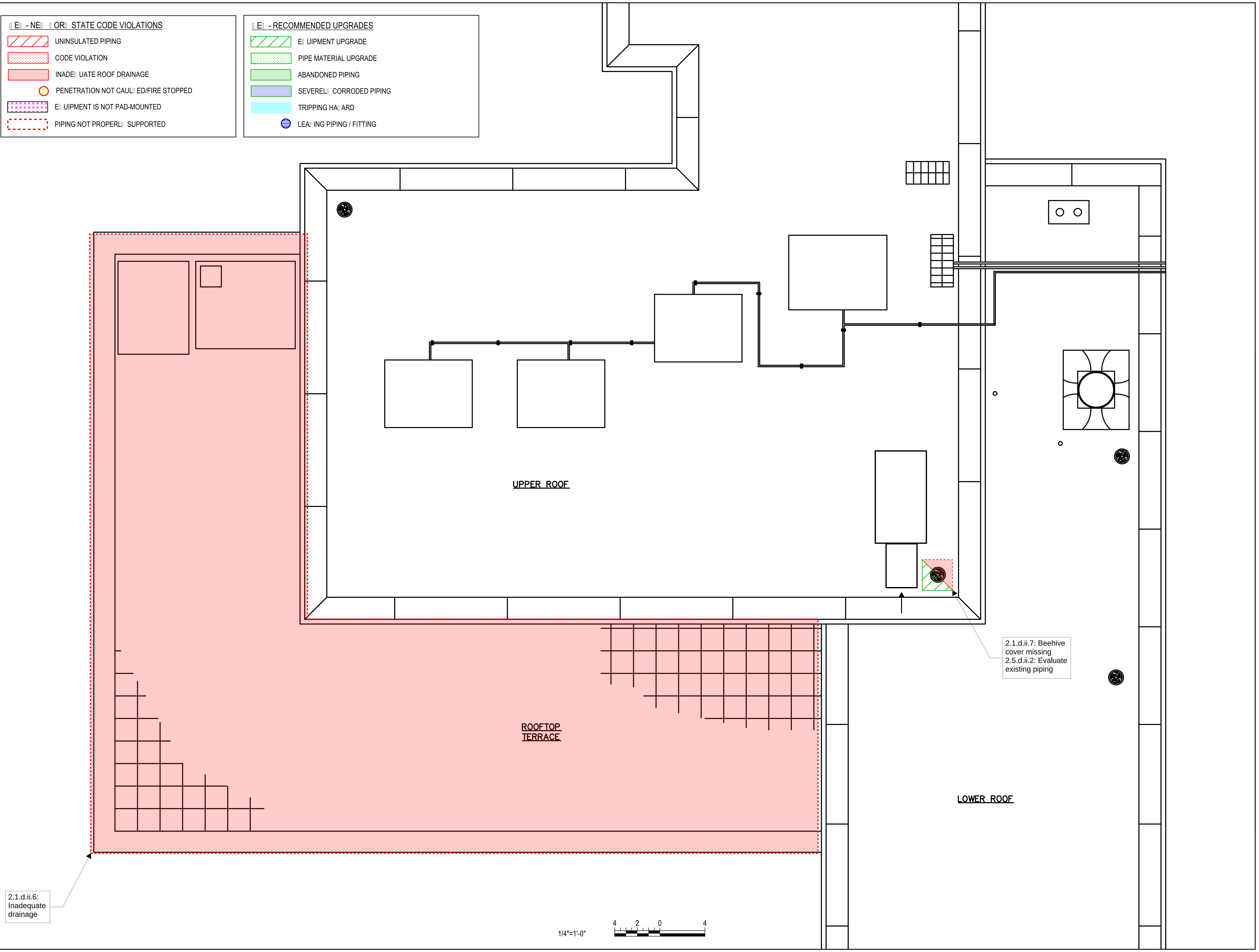
P-102.00

□E□ - NE□ □OR□ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- CODE VIOLATION
- INADE□ UATE ROOF DRAINAGE
- PENETRATION NOT CAUL□ ED/FIRE STOPPED
- E□ UIPMENT IS NOT PAD-MOUNTED
- PIPING NOT PROPERL□ SUPPORTED

□E□ - RECOMMENDED UPGRADES

- E□ UIPMENT UPGRADE
- PIPE MATERIAL UPGRADE
- ABANDONED PIPING
- SEVEREL□ CORRODED PIPING
- TRIPPING HA□ ARD
- LEA□ ING PIPING / FITTING



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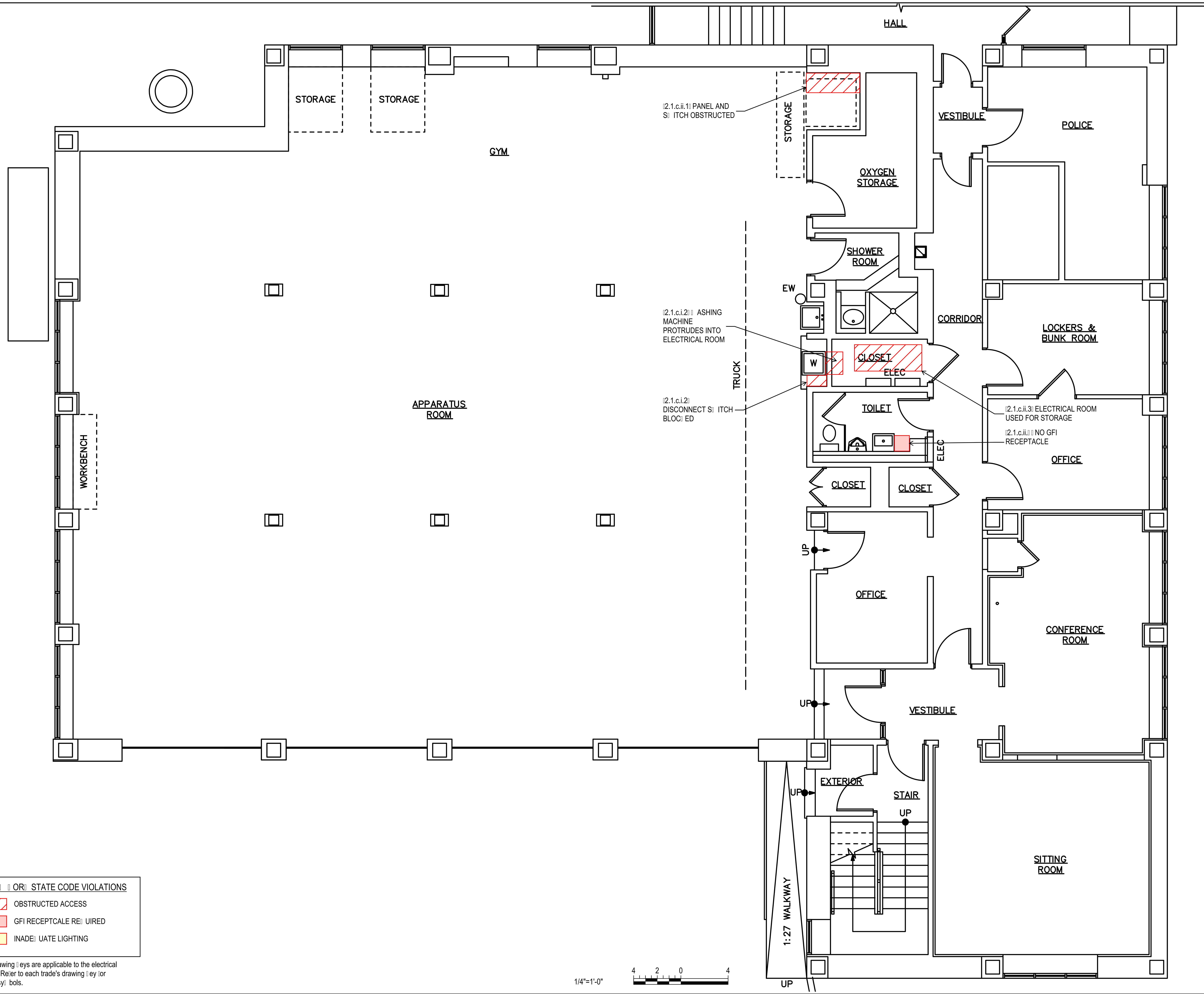
FIREHOUSE #1
347 Stewart Ave
Garden City, NY 11530

Drawing Title
PLUMBING ROOF PLAN

Drawing Number
P-103.00

3.0 APPENDIX

3.4 Electrical
E-101 Electrical First Floor Plan



□ E□ - NE□ □ OR□ STATE CODE VIOLATIONS

- OBSTRUCTED ACCESS
- GFI RECEPTCALE RE□ UIRED
- INADE□ UATE LIGHTING

□The abo□ e drawing □ eys are applicable to the electrical drawings only. Re□er to each trade's drawing □ ey □or trade-speci□ic sy□ bols.

1/4"=1'-0"

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FIRE DEPARTMENT
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Garden City, NY 11530

Drawing Title

ELECTRICAL FIRST FLOOR PLAN

Drawing Number

E-101

351 Stewart Ave
Garden City, NY 11530

Garden City
Fire Department

Firehouse #2

Stewart Ave & Edgemere Rd, Garden City, NY 11530

Existing Conditions
Documentation & Recommendations
DRAFT

February 2, 2018

CAMERON ENGINEERING
& ASSOCIATES, LLP
177 Crossways Park Drive
Woodbury, NY 11797

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TABLE OF CONTENTS

GARDEN CITY FIRE DEPARTMENT
FIREHOUSE #2
EXISTING CONDITIONS DOCUMENTATION & RECOMMENDATION

1.0 INTRODUCTION

1.1 Methodology

The existing conditions documentation is intended to be a general survey of the roofs and exterior facades' current physical conditions. It is also a general survey of the building's interior physical conditions and compliance with applicable Code and ADA regulations. The building's architectural, structural, mechanical, electrical, and plumbing systems were surveyed. VBA & CEA documented the building's existing conditions over a series of site visits. The existing conditions documentation was based on visual observation by binocular survey from grade level and roof level.

The following report is the result of the existing conditions documentation, translated into written descriptions, photographs and drawings. Based on the existing conditions found, VBA & CEA propose repair and design recommendations. In addition to code compliance and necessary repairs, the scope of this analysis will include options for expansion of the facility to accommodate a larger ladder fire truck than can currently be parked within the facility. At the end of each report will be a preliminary cost estimate.

For hazardous materials existing conditions, please see accompanying asbestos and hazardous materials report.

1.2 Location and Building Description

Firehouse #2 is a two story and basement brick and cast stone building with aluminum windows. The tower is constructed of brick and cast stone with glass block windows. There are slate tile roofs, flat roofs, a built in gutter system and dormers. According to the cornerstone, the existing building was constructed in 1930; record drawings indicate upgrades and renovations in the 1940's, 50's, 60's and up to the present. It is located on Stewart Ave and Edgemere Road.

Figure 1.2_1 Firehouse #2 Location Map - Stewart Ave & Edgemere Road

1.3 Summary of Key Findings

In order to provide Garden City with a summary of Firehouse #2's existing conditions and repair recommendations, the scope of work items have been classified into the following categories:

1. Required by Code and Law

2. Severe Physical Condition & Deterioration

3. Poor Physical Condition & Deterioration

4. Fair Physical Condition & Deterioration

5. Good Physical Condition & Deterioration

The preliminary cost estimate for each scope of work item can be found at the end of Firehouse #2's report.

GCFD Firehouse #2		Physical Condition & Deterioration			
Scope of Work Item	Required By Code/Law	Severe	Poor	Fair	Good
2.1 National, State & Local Codes					
a. Fire Stopping & Fire Safing	X	X			
b. Egress	X	X			
c. Mechanical	X	X			
d. Electrical	X	X			
e. Plumbing	X	X			
2.2 ADA Compliance					
a. Interior Route & Bathroom	X				
2.3 Tower					
a. Tower Roof & Parapet Wall		X			
b. Hose Tower Steel & Metal Stair		X			
c. Tower Brick & Glass Block		X	X		
2.4 Main Roof Built In Gutters					
a. Copper Liner & Cast Stone Gutter		X	X		
b. Scupper & Conductor Head			X		
2.5 Facades & Dormers					
a. Brick & Cast Stone			X	X	X
b. Windows & Lintels		X	X	X	
2.4 Roofs					
a. Flashing			X	X	
b. Slate Roof			X		
c. Flat Roof				X	
2.5 Recommended Upgrades					
a. Architectural			X		
b. Mechanical		X			
c. Electrical			X		
d. Plumbing			X		
e. Exterior Drainage			X		

2.0 ARCHITECTURAL & ENGINEERING

The following sections describe the existing conditions of Firehouse #2 as they relate to the 2.1 National, State, & Local Codes, 2.2 ADA Compliance, 2.3 Tower, 2.4 Built In Gutter, 2.5 Facades, and 2.6 Roofs. Also included are Recommended Upgrades that are standard common practice, and Program Design Options. At the end of each section VBA and CEA's recommended repairs are outlined.

2.1 National, State, & Local Codes

A. Fire Stopping & Fire Safing

Fire Stopping & Fire Safing Existing Conditions:
Fire separation at the floor assembly is required. *Please see EX-001 Basement Plan.*

- **Basement pipe penetrations** in multiple locations are not fire stopped / safed at underside of First Floor concrete slab. In violation of Code.
- Underside of First floor concrete slab in area of pipe penetrations is **deteriorated** and spalled. Cracks visible on top surface of concrete slab in Apparatus Room.

Fire stopping and fire safing are critical elements of fire rated construction and inhibit the spread of fire. They are required by Code.

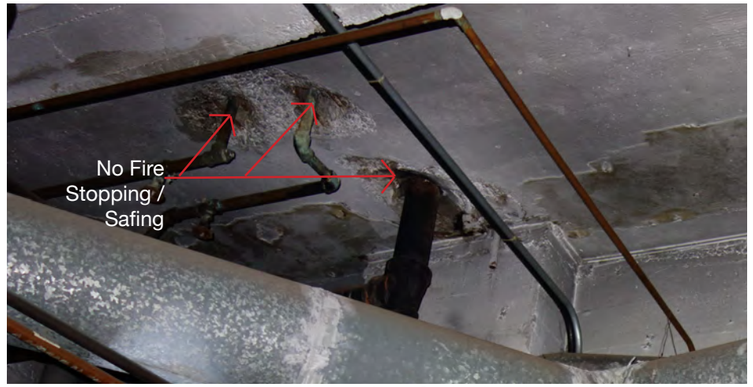


Figure 2.1_1 Basement - Pipe Penetrations Code Violation

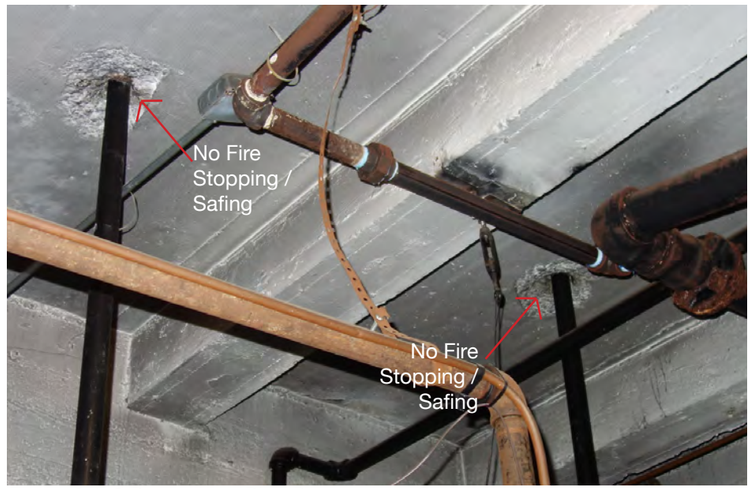


Figure 2.1_2 Basement - Pipe Penetrations Code Violation

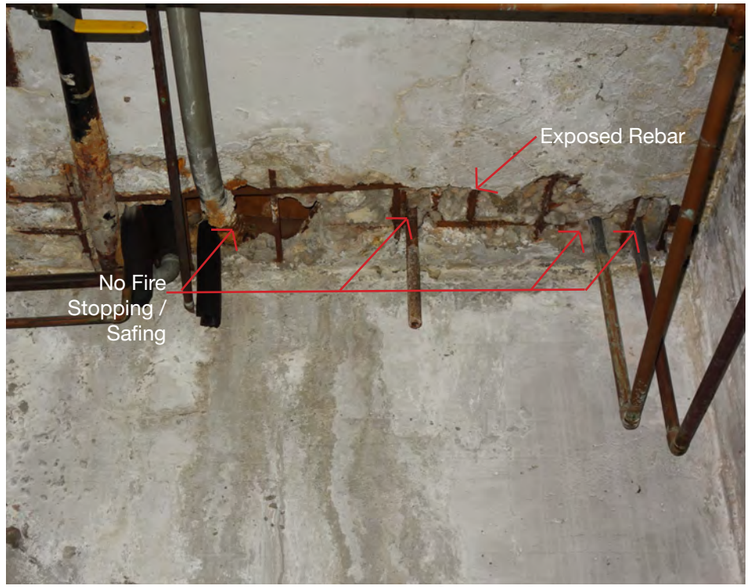


Figure 2.1_3 Basement - Pipe Penetrations & Concrete Deterioration

Fire Stopping & Fire Safing Recommendations for Repair:

VBA recommends the following repairs:
1. All pipe penetrations should be fire stopped and fire safed to maintain fire rated construction
2. Repair First Floor structural concrete slab. Repair details to be prepared by the Structural engineer.

B. Egress

Egress Existing Conditions:
Please see EX-100 First Floor Plan and EX-101 Second Floor Plan.

- **The exterior metal stair** for the Meeting Room has open risers. There are no handrails and the guardrail is insufficient. In violation of Code.
- **The exterior metal stair** foundation pad has settled due to rain water erosion. Subsequently causing the stair to detach from and lean away from the building.
- **The interior metal stair** at the Tower does not have handrails and the guardrail is insufficient. In violation of Code.
- **The egress door** from the Meeting Hall to the Tower egress stair is blocked by the dormer protrusion. In violation of Code.
- **Single Step** at path of egress at Meeting Hall. In violation of Code.
- **No exit signs** to Tower egress from Apparatus Room or Hall. In violation of Code.

Providing a safe means of egress is critical in meeting State Code. Egress stairs, guardrails, handrails, egress doors, and the path of egress must meet Code requirements. Structural issues must be addressed.

Figure 2.1_4 Exterior Egress Stair - Code Violation

Figure 2.1_5 Tower Egress Stair (left), Meeting Hall Egress Door (right)

Figure 2.1_6 Meeting Room Egress Step

Egress Recommendations for Repair:
Please see ST-100 Site Plan - Option A & B.

VBA recommends the following repairs:

1. Provide new egress stair from Meeting Room to meet Code requirements to replace the exterior metal stair. (Option B)
2. Provide new Second Floor egress stair in Tower to meet Code requirements.
3. Remove exterior dormer to provide clear access to egress door from Meeting Hall to Tower egress stair.
4. Remove step and modify elevation change configuration of path of egress out of Meeting Hall to meet Code requirements.
5. Provide exit signs at the Apparatus Room and Hall doors.

C. Mechanical

i) Cellar

1) Observed deficiency: Hartford steam connection at boiler not code compliant. The connection is above the boiler water line.

Recommended fix: The Hartford connection could be relocated to 2" below the boiler water line as per New York State Mechanical Code.

2) Observed deficiency: Near-boiler steam & condensate piping and fittings are uninsulated.

Recommended fix: All uninsulated piping and fittings should be cleaned, insulated, and provided with a service jacket as per New York State Energy Conservation Code. In addition to meeting code requirements, insulated piping will reduce building energy usage and operating costs.

3) Observed deficiency: Equipment (boiler, water heaters, etc.) not mounted on required concrete housekeeping pads per New York State Mechanical Code:

Recommended fix: Equipment must be disconnected and temporarily removed so that new 4-inch high (minimum) concrete housekeeping pads may be installed to raise mechanical equipment for proper drain-down and maintenance. Housekeeping pads to extend a minimum of 3-inches beyond the extents of the equipment on all sides.

ii) First Floor/Apparatus Floor

5) Observed deficiency: Locker Room to be mechanically exhausted as per New York State Mechanical Code.

   Recommended fix: The required mechanical exhaust system consists of an exhaust fan, ductwork, and exhaust grilles. Ductwork would be routed to the building exterior either through the wall, terminating at a small weather cap, or an exterior wall-mounted exhaust fan may be installed (for example, a Cook Gemini exhaust fan with weather cap and 4 inch diameter exhaust ductwork may be an affordable option).

iii) Second Floor

6) Observed deficiency: Insulation in meeting space applied to crawl space wall, not exterior wall; crawl space is vented to interior. Piping and interior space is therefore exposed to cold air, represents ECC problem for interior room:

Recommended fix: Insulate the entire exterior wall paneling to prevent the interior space from being exposed to cold/hot air.

7) Observed deficiency: Steam piping and other piping not insulated in uninsulated space.

   Recommended fix: All uninsulated piping and fittings should be cleaned, insulated, and provided with a service jacket as per New York State Energy Conservation Code. Insulated piping will reduce building energy usage and operating costs.

D. Electrical

i) Cellar

1) Observed Deficiency: Inadequate lighting for stairway from first floor to basement

2) Observed Deficiency: Inadequate cellar lighting

Recommended Fix (for items 1 & 2): Provide minimum one (1) LED pendant mounted fixture at stairway & minimum four (4) LED surface mounted fixtures in cellar.

E. Plumbing

i) Cellar

1) Observed deficiency: Water piping not properly supported.

   Recommended fix: All piping shall be supported in accordance with Table 308.5 of the New York State Plumbing Code. Piping with a diameter of 1-1/4" or less should be supported every 6 feet, min.

2) Observed deficiency: Cold and hot water piping not insulated in uninsulated spaces.

   Recommended fix: All water piping should be cleaned and thermally insulated in accordance with Table C403.2.10 of the New York State Energy Conservation Code.

3) Observed deficiency: Hot water heater not mounted on required concrete maintenance pad (see Mechanical Cellar deficiency list)

   Recommended fix: Equipment must be disconnected and temporarily removed so that new 4 inch high (minimum) concrete housekeeping pads may be installed to raise hot water heater. Housekeeping pads to extend a minimum of 3 inches beyond the extents of the equipment on all sides.

4) Observed deficiency: Numerous penetrations not caulked/fire stopped as per New York State Building and Plumbing Code.

   Recommended fix: Fireproofing should be applied to all penetrations through a fire-rated assembly. 3M Fire Barrier CP 25 Caulk (or a UL listed equivalent) may be utilized and applied per its UL listing.

ii) First Floor/Apparatus Floor

5) Observed deficiency: Cold and hot water piping uninsulated.

   Recommended fix: See recommendation above.

6) Observed deficiency: No fire-rating indicated on PVC sanitary piping –verify rating & replace piping if material is non-compliant.

   Recommended fix: All sanitary piping shall conform to one of the standards listed in Table 702.1 of New York State Plumbing Code. Piping shall be labeled with respective standard.

iii) Second Floor

7) Observed deficiency: Cold and hot water piping uninsulated.

   Recommended fix: See recommendation above.

2.2 ADA Compliance

ADA refers to the Americans with Disabilities Act which is a Federal regulation. NYS Code also requires compliance with ANSI A117.1 accessible standards. The term “accessible” will refer to compliance with both ADA regulations and ANSI A117.1 Standard.

A. Interior Route & Bathrooms

Please see EX-100 First Floor Plan and EX-101 Second Floor Plan.

1. First Floor Existing Conditions:

- **Public toilet room** is not accessible. Accessible fixture and door clearances not provided.
- **Abandoned gas piping** exposed at Apparatus Room concrete slab at Hall door on accessible route. Verify piping is abandoned.

2. Second Floor Existing Conditions:

- **Men’s and Women’s** bathrooms are not accessible. Accessible fixture and door clearances not provided.
- **No accessible access** provided for public Meeting Room.

Figure 2.2_2 Second Floor Men’s Bathroom

Figure 2.2_4 Second Floor Meeting Hall

Figure 2.2_1 Second Floor Women’s Bathroom

Figure 2.2_3 First Floor Toilet Room

Providing ADA compliant and accessible public bathrooms and access to public spaces are critical in meeting Federal regulations and State Code.

Interior Route & Bathrooms Recommendations for Repair:
Please see A-100 First Floor Plan and ST-100 Site Plan - Option B.

VBA recommends the following repairs:

1. Modify First Floor toilet room to be accessible. *Please see A-100 First Floor Plan.*
2. Remove abandoned gas piping at Apparatus Room concrete slab. Verify piping is abandoned prior to removal.
3. Modify Second Floor Men’s and Women’s bathrooms to be accessible.
4. Provide ADA elevator to Meeting Room. *Please see ST-100 Site Plan - Option B.*

2.3 Tower

A. Tower Roof & Parapet Wall

The tower roof and parapet wall have **severe failures and deterioration**. Open coping stone joints, the failed roof, flashing and drainage systems are allowing water into the interior of the wall system, causing brick cracking, effloresence, rusting of the hose tower steel and metal stair. Steel rusting then causes further brick cracking of the exterior walls. Inadequate and inappropriate detailing have also allowed this condition to occur.

Tower Roof & Parapet Wall Existing Conditions:
Please see EX-300 Tower Section.

- **Copper cap flashing** is warped, seams open, and beyond its useful life. Embedment into brick is unknown.
- **Base Flashing** at pipes and parapet wall are beyond their useful life and have failed. No flashing at Nedermann Exhaust duct and roof hatch.
- **Roofing materials** are beyond its useful life and in poor condition.
- **Roof drain** located at roof high point. Severe ponding throughout roof.
- **Vertical brick cracks** typical below cast stone coping joint. Cracks at brick chimney.
- **Cast stone coping** joints have been caulked. Joints are open and cracked.
- **No drip edge at the coping stone**. The coping stone is flush with the brick, allowing water to travel to the horizontal mortar joint.
- **Cast stone coping unit was loose** at time of VBA survey. Garden City has secured cast stone coping unit in place.
- **Cast stone coping units** stained with tar.

Figure 2.3_1 Roof & Parapet Wall - Copper Cap Flashing, Hatch & Chimney

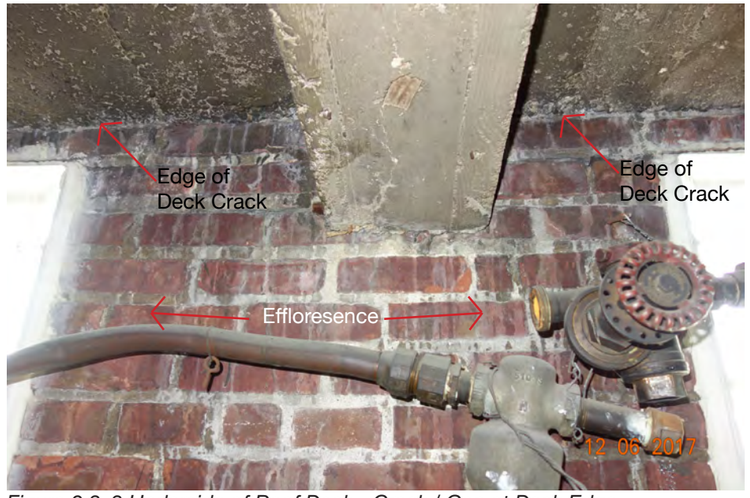


Figure 2.3_3 Underside of Roof Deck - Crack / Gap at Deck Edge

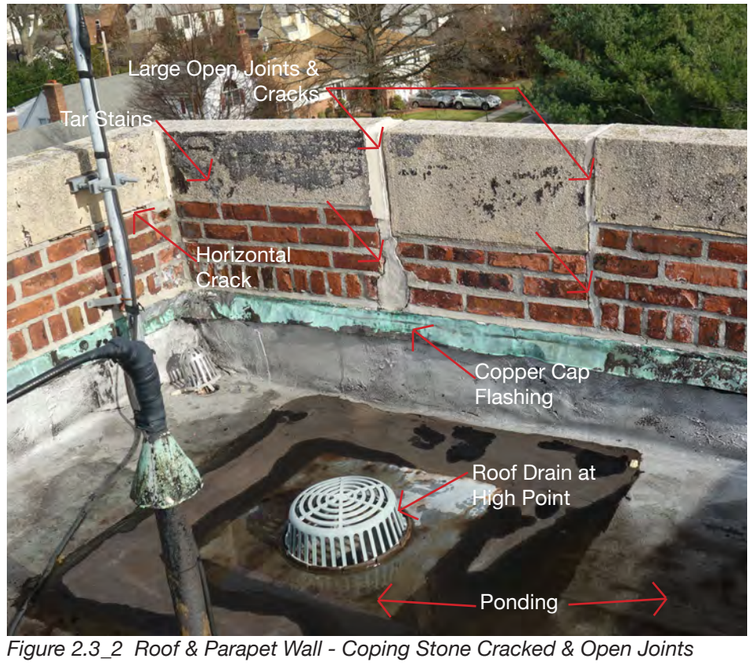


Figure 2.3_2 Roof & Parapet Wall - Coping Stone Cracked & Open Joints

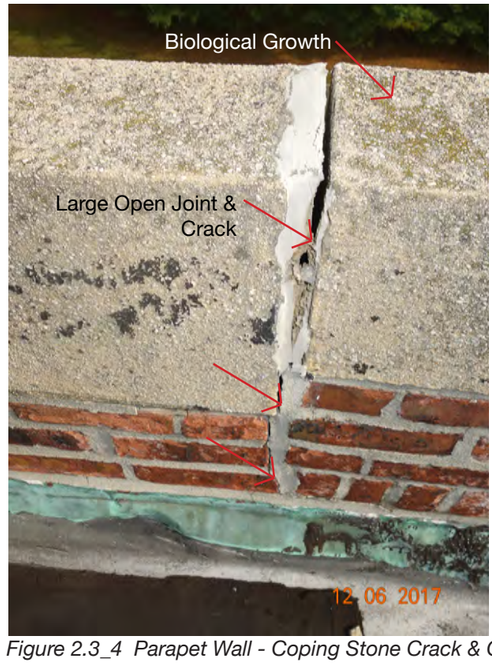


Figure 2.3_4 Parapet Wall - Coping Stone Crack & Open Joint

- **Re-pointed joints** have cracked and have not arrested the brick and cast stone failures.
- **Crack at underside of concrete deck**, between concrete deck edge and brick wall.

Tower Roof & Parapet Wall Recommendations for Repair:

VBA recommends 2 options for repair:

1. **Option 1:** Demolish the parapet and roof. New concrete roof deck, structural steel, roofing system, flashing and drainage. Rebuild with proper detailing: coping stone securement and drip edge, flashing, and roof pitch. Major brick crack repair and re-pointing is required on the walls from roof level to approximately 10 feet below. A new liquid-applied fleece-reinforced roofing system and insulation are recommended. Lighting protection is also recommended. Repair and paint metal tower stair and guardrails as discussed in the following section *B. Hose Tower Steel & Metal Steel.*

2. **Option 2**: Demolish the parapet, roof and brick walls to approximately 10 feet below the roof level. New light gage steel framed hipped roof with slate tiles and copper flashing. Demolish and provide new tower steel pan stair to new lower roof level.

All new roof materials should meet the current NYS Energy Conservation Code. Continuous insulation to meet the prescribed R-value (R-30). All new roofing should be pitched for proper drainage to roof drains.

See the following section *B. Hose Tower Steel & Metal Stair and* section *C. Brick & Glass Block* for related repair recommendations for the brick wall below the roof level, steel and metal stair.

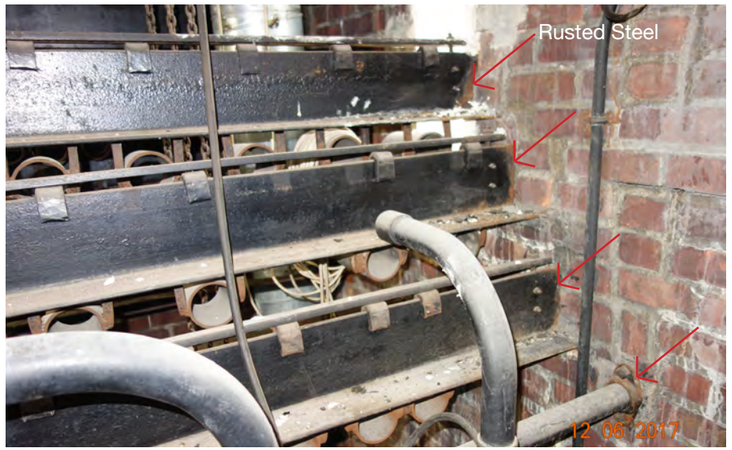


Figure 2.3_5 North Tower Wall - Rusted Hose Hoisting Steel

Figure 2.3_6 Hose Hoisting Steel (left), Concrete Encased Steel Beam (right)

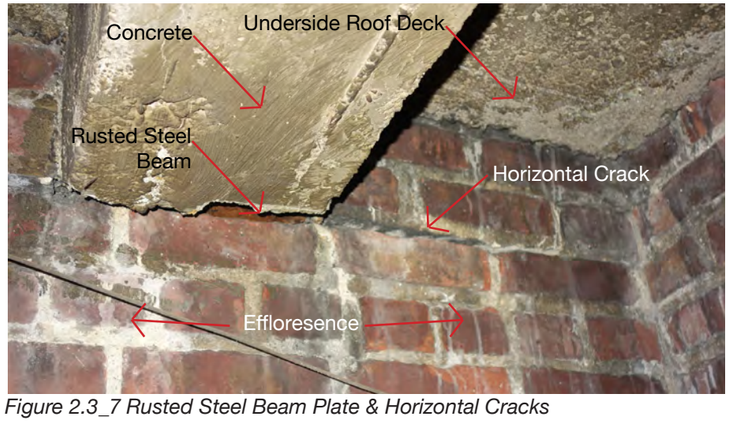


Figure 2.3_7 Rusted Steel Beam Plate & Horizontal Cracks

B. Hose Tower Steel & Metal Stair

Hose Tower Steel & Metal Stair Existing Conditions:
Please see EX-300 Tower Section.

- **Hose drying steel** embedded in brick wall is rusted and deteriorated causing brick cracks and effloresence throughout wall.
- **Brick displaced** in horizontal plane at hose hoisting steel due to rust and deterioration.
- **Metal stair** stringers, risers, and treads along exterior walls are rusted. Guardrail embedded into wall rusted.
- **Concrete encased steel beams** ends are rusted causing horizontal cracks and effloresence. Concrete spalling off at beam ends.

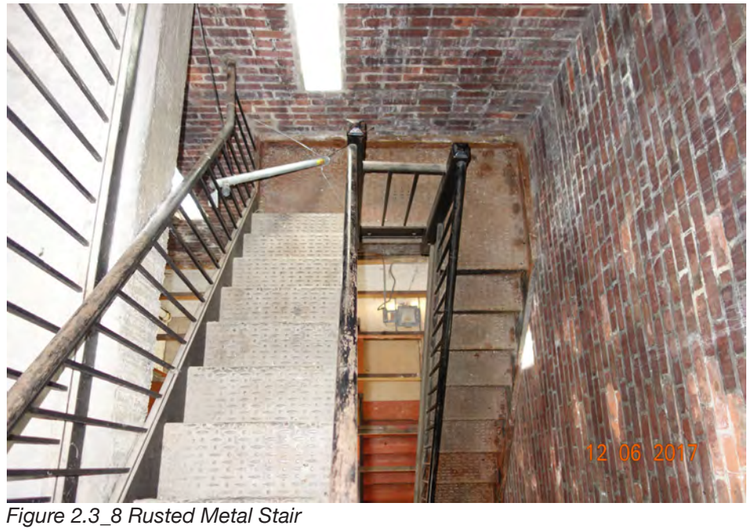


Figure 2.3_8 Rusted Metal Stair

The hose tower steel and metal stair existing conditions have **severe to moderate failures and deterioration**. Water infiltration into the wall system has caused corrosion and rusting of any steel embedded in the brick. When steel rusts and corrodes, it expands up to 10 times larger than that of solid steel (ex: 1/16" steel = 5/8" of rust). This expansion then causes brick cracks and allows more water to enter the wall.

Hose Tower Steel & Metal Stair Recommendations for Repair:
The hose tower steel and metal stair repair options are dependant on the repair option selected for the roof and parapet wall. See the previous section *A. Roof & Parapet Wall* for repair recommendations Option 1 and Option 2. This work should be performed together.

VBA recommends 2 options for repair:

1. **Option 1:** See Roof and Parapet Wall Option 1.
   - The embedded steel needs to be removed, followed by brick repair.
   - Remove existing hoisting steel and repair brick wall. Fill in and repair steel masonry pockets.
   - Fill in existing hose drying shaft with new concrete slab.
   - Repair and paint metal tower stair and guardrails. All members need to be fully exposed by removing brick, cleaned and painted.
   - Wherever the concrete encased steel beams are embedded, they need to be shored, brick removed to expose fully, cleaned and painted. Should severe beam damage be found, remedial work will be required.

2. **Option 2**: See Roof and Parapet Wall Option 2. Demolish and provide new steel pan tower stair to new roof level.

C. Tower Brick & Glass Block

Tower Brick & Glass Block Existing Conditions:
Please see EX-300 Tower Section.

- **No flashing** visible at the glass block sill.
- **Open and cracked joints** around glass block window opening and sill.
- **Major brick cracks** traveling from glass block windows across wall to other windows and weak points, allowing water infiltration.
- **Severe effloresence** throughout the tower.
- **Paint peeling and flaking, evidence of spalling** at Tower Lobby and Basement Stair.

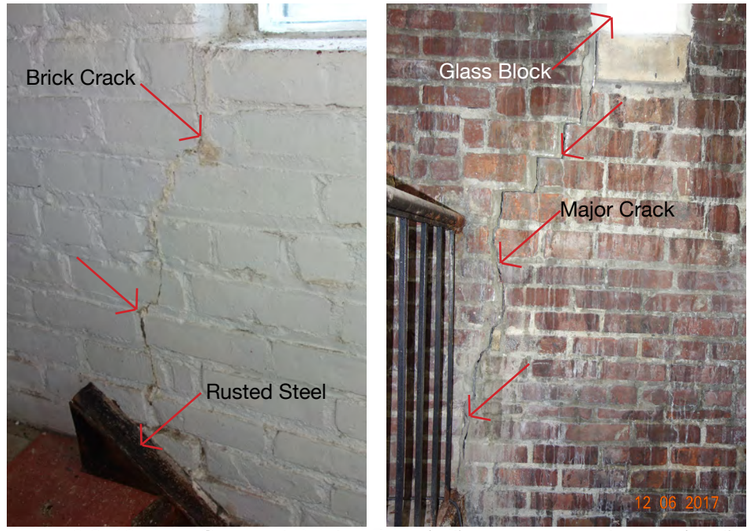


Figure 2.3_10 Major Cracks at Painted Brick (left) and Hose Hoist. Level (right)

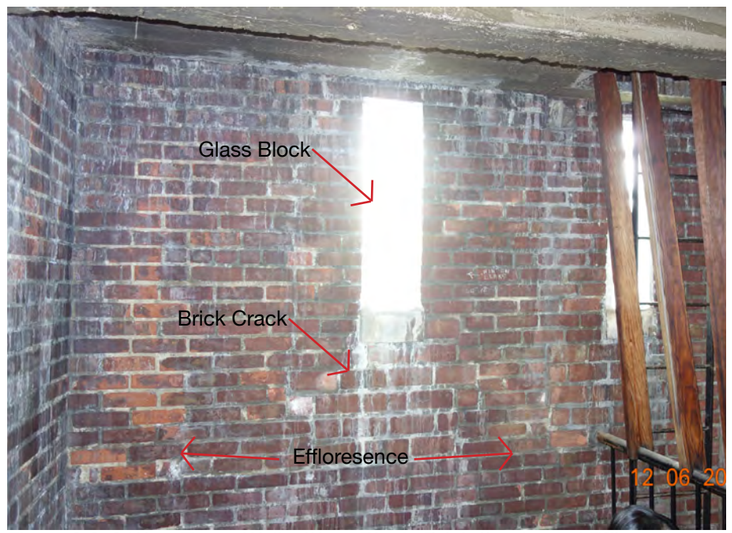


Figure 2.3_9 West Tower Wall - Glass Block, Brick Cracks and Effloresence

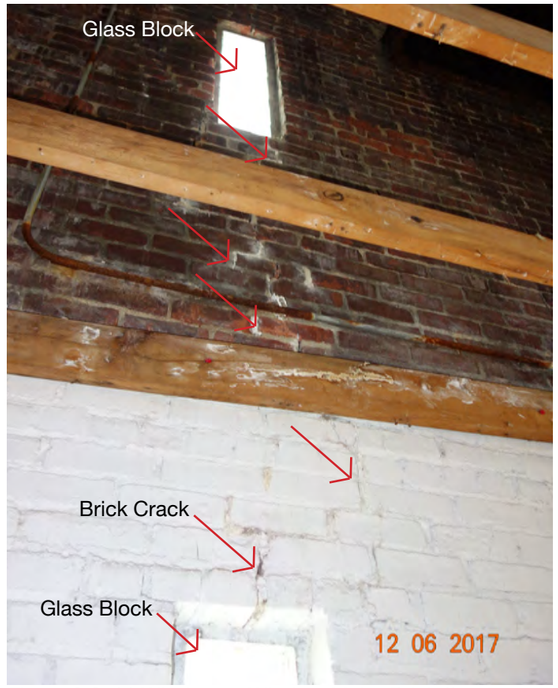


Figure 2.3_11 Window to Window Major Brick Crack

The hose tower steel and metal stair existing conditions have **severe to moderate failures and deterioration**. Water infiltration into the wall system has caused corrosion and rusting of any steel embedded in the brick. When steel rusts and corrodes, it expands up to 10 times larger than that of solid steel (ex: 1/16" steel = 5/8" of rust). This expansion then causes brick cracks and allows more water to enter the wall.

Tower Brick & Glass Block Recommendations for Repair:

VBA recommends the following repairs:

1. For the Hose Hoisting Level please see *Section A. Roof & Parapet* for repair options.
2. Clean all Tower brick walls of effloresence.
3. Repair all brick cracks. Minor cracks and damage can be repointed or repaired by brick replacement. Through wall cracks and larger damage will require structural repairs including rebuilding and reinforcements.
4. Re-point 30% of Tower brick walls. Final areas of re-pointing to be further investigated.
5. Demolish existing glass block windows and sills. Provide new hot dipped galvanized lintels, windows, flashing and sills. New windows to meet the current NYS Energy Conservation Code.
6. Scrape off all loose paint from brick and repaint. Repair and replace any spalled brick.

2.4 Main Roof Built in Gutters

A. Copper Liner & Cast Stone Gutter

Please see EX-201 South Elevation Existing Conditions.

1. Copper Liner Existing Conditions:

- **Copper liner in poor condition**. Seams are open and no expansion joints. Poor workmanship at soldered seams.
- **Copper liner pitch** insufficient. Standing water in gutter.

2. Cast Stone Gutter Existing Conditions:

- **No drip edge at cast stone gutter**. The cast stone gutter is flush with the brick, allowing water to travel to the horizontal mortar joint.
- **Copper and acid rain staining** throughout cast stone gutter. After rain, cast stone gutter face was seen to be saturated with water.
- **Cast stone gutter joints** are open or caulk is failing.

Figure 2.4_2 Copper Liner - Standing Water

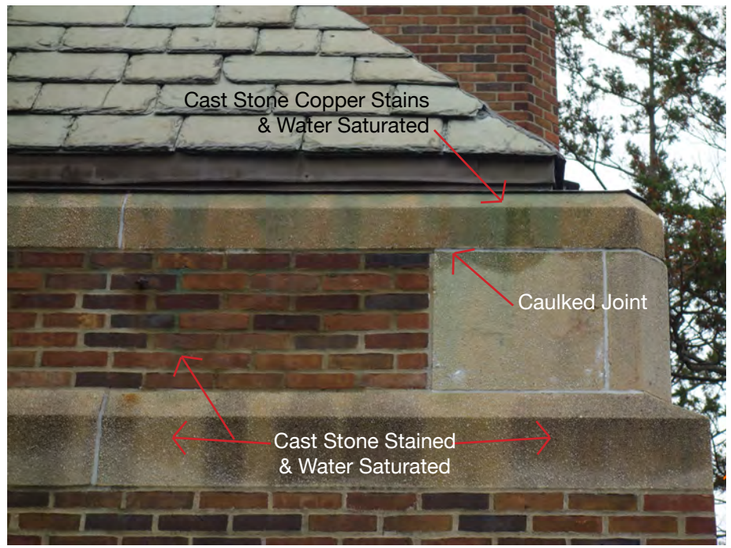


Figure 2.4_1 Cast Stone Gutter - Water Saturated, Copper /Acid Rain Stains


Figure 2.4_3 Copper Liner Poor Workmanship & Detailing

This copper and cast stone built in gutter system is not the optimal design and has inherent flaws. The copper liner and cast stone gutter are in **poor condition**, causing water infiltration and some brick cracking. If the built in gutter system is not addressed, more severe deterioration of the wall system will occur.

Copper Liner & Cast Stone Gutter Recommendations for Repair:

VBA recommends the following repairs:

1. Demolish copper liner and provide new copper. Provide proper detailing: expansion joints, flashing, apron, etc.
2. Rebuild and re-pitch built in gutter.
3. Re-point cast stone gutter joints.
4. Clean copper and acid rain stains from cast stone.

B. Scupper & Conductor Head

Please see EX-201 South Elevation Existing Conditions.

Scupper & Conductor Head Existing Conditions:

- **Conductor head in poor condition**. Copper warped.
- **Scuppers** are not properly flashed and may be clogged with debris.
- **Downspout straps failed**. Not fastened to wall.
- Downspout drains to **depressed grade** against building. No splash block. Water infiltration into Basement causing effloresence.

Scupper & Conductor Head Recommendations for Repair:

VBA recommends the following repairs:

1. New scuppers and conductor heads should be provided. Scuppers to be properly flashed and waterproofed.
2. New built in gutters system. Pitch for positive drainage to the new scuppers.
3. New downspouts, straps, and spash block. Re-grade to drain run off away from building.
4. Clean and repair wall at Basement.
5. The main hip roof drainage system should studied further, investigating other systems that may perform better and have better durability than a built in gutter system; such as a new eave and hung gutter system.

This work should be performed with the copper liner and cast stone gutter. Please see copper liner and cast stone gutter repair recommendations.

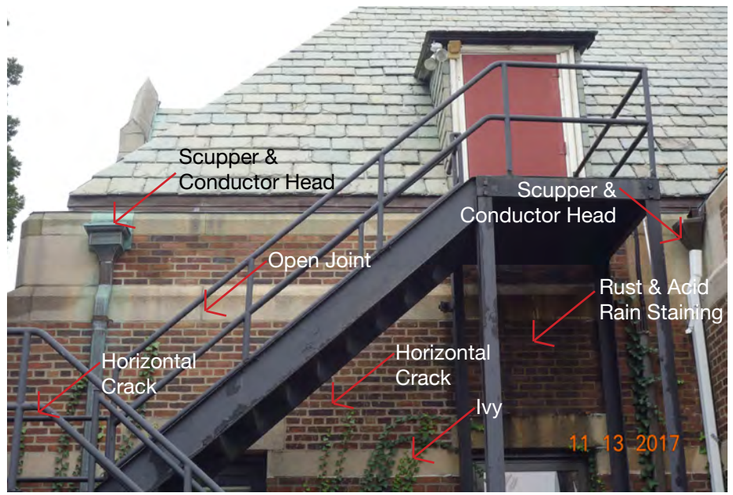


Figure 2.4_4 South Facade - Copper Scuppers & Conductor Heads

2.5 Facades & Dormers

Firehouse #2 is a brick 2-story building with aluminum windows, cast stone trim, cast stone window sills and heads and concrete base. In the following sections the facades and dormers' major and minor issues are outlined. The Tower facades were not able to be surveyed due to the Tower height and trees blocking view.

A. Brick & Cast Stone

1. South Facade Existing Conditions:

Please see EX-201 South Elevation Existing Conditions.

- **Stepped and horizontal brick cracking** along the lintel line from window head up to the cast stone band.
- **Cast stone band, window head and sill joints** are open or poorly caulked and failed.
- **Acid rain and rust staining** at upper brick and cast stone above windows. After rain, cast stone was seen to be saturated with water.
- **Vertical cracks** at concrete base.
- **Ivy** growing on east portion of facade.

Figure 2.5_1 South Facade - Cracks, Open Joints, Staining

2. East & West Facade Existing Conditions:
Portions of the West Facade were not able to be survey due to large bushes and shrubs.

- **Cast stone band, window head and sill joints** are open or poorly caulked and failed.
- **Cast stone trim joints** at dormers are open or poorly caulked and failed.
- **Acid rain and rust staining** at upper brick and cast stone above windows and at dormers. After rain, cast stone face was seen to be saturated with water.
- **Vertical cracks** at concrete base. They have been caulked.
- **Cast stone trim** on West Facade appears displaced and spalled.
- **Effloresence** at corbeled brick head on East Facade entrance door.
- **Window air conditioner** penetrating East Facade wall. Opening poorly caulked. No lintel visible.

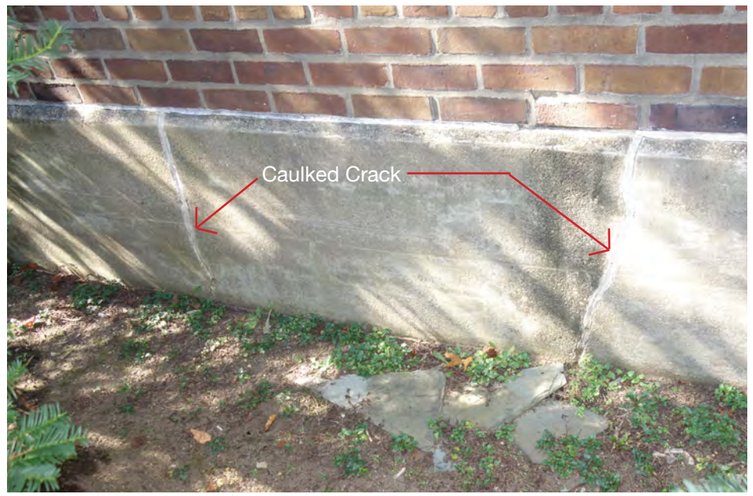


Figure 2.5_3 Concrete Base Caulked Cracks

3. North Facade Existing Conditions:

- **Acid rain and rust staining** at upper brick and cast stone above Apparatus Room doors, and dormers. After rain, cast stone face was seen to be saturated with water.

These brick and cast stone existing conditions vary slightly from Facade to Facade. The South facade has **moderate failures** and is in **poor condition**. The East and West Facades are in **fair condition**. The North Facade is in **good condition**. Further investigation is required as to why the cast stone band is saturated with water and what solution is most appropriate.

Brick & Cast Stone Recommendations for Repair:

VBA recommends the following repairs:
1. Repair all brick and concrete base cracks.
2. Re-point all cast stone.
3. Clean Facades of all masonry staining and effloresence.
4. Provide steel lintel at air conditioner opening, insulate and seal penetration.
5. Remove ivy and repair masonry where required.

Figure 2.5_2 West Facade - Open or Failed Caulk Joints and Staining

Figure 2.5_4 East Facade - Open or Failed Caulk Joints and Effloresence

Figure 2.5_5 North Facade - Masonry Staining

B. Windows & Lintels

Windows & Lintels Existing Conditions:
Please see EX-100 First Floor Plan and EX-201 South Elevation.

- **Window lintels** are rusted due to water infiltration. Severe to moderate deterioration.
- **Window head, jamb and sill** plaster finishes are cracked and spalling. Severe to moderate deterioration. Ceilings are stained.
- **Dormer window** on West Facade has been removed and replaced with wood and metal louvers. Wood is severely deteriorated.
- **Tower entrance** door and transom lintel is rusted and severely deteriorated. Wood frame deteriorated.
- **Second Floor Meeting Hall door** opening lintel is rusted and severely deteriorated.
- **Second Floor window** heads' gypsum board finish have vertical cracks.
- **South Facade door** wood head and lintel are deteriorated and rusted. Stucco jambs are cracked.
- **Basement window** pane broken and steel frame rusted.
- **Aluminum windows** near end of life. Most likely do not meet the current NYS Energy Conservation Code.

Figure 2.5_6 Modified Dormer

Figure 2.5_7 Tower Door/Transom Lintel Deterioration & Rust

Figure 2.5_8 Window Lintel & Plaster Deterioration & Rust

Figure 2.5_9 Window Stool & Plaster Cracks & Deterioration

Windows & Lintels Recommendations for Repair:

VBA recommends the following repairs:

1. Replace all window lintels with hot dipped galvanized lintels. Provide proper flashing and weep holes.
2. Windows and doors should be replaced to meet the current NYS Energy Conservation Code.
3. Repair all deteriorated interior finishes, jambs, heads, stools, and frames.
4. Replace dormer wood cladding and louvers with new insulated panel and louvers.

Water infiltration into the wall system has caused the steel lintels to deteriorate and rust. In order to repair and replace the lintels the windows and doors will have to be removed.

Figure 2.5_10 Meeting Hall Door Opening Lintel Rust

2.6 Roofs

There are three roof levels at Firehouse #2. The hip and dormer roofs, mid-level flat roofs and the Tower Roof. See section *2.3 Tower, A. Roof & Parapet Wall* for Tower Roof existing conditions and recommendations.

A. Flashing

Flashing Existing Conditions:

- **Dormers:** Where visible, copper flashing appears to be in **poor condition; loose and warped.** Flashing under existing slate tiles not surveyed.
- **Hip Roofs:** Flashing not visible. In areas of ridge and hip slate tiles missing, flashing also **deteriorated**.
- **Flat Roofs:** Copper flashing appears to be in **poor condition; loose and warped.**
- **Copper stepped flashing** at brick ledge in poor condition; loose and warped.

Flashing Recommendations for Repair:

VBA recommends the following repairs:

1. **Dormers:** New copper flashing should be provided. This work should be performed with the overall dormer slate roof repairs.
2. **Hip Roofs:** New flashing should be provided at ridge and hips. This work should be performed with the overall slate roof repairs.
3. **Flat Roofs:** Repair flashing. This work should be performed with the overall slate roof repairs.
4. Provide new copper stepped flashing at brick ledge.

All new flashing materials should be compatible with the recommended roofing repair materials.

Figure 2.6_1 Slate Hip Roof, Dormer & Copper Flashing

Figure 2.6_2 Slate Hip Roof, Flat Roof, Dormers & Copper Flashing

B. Slate Roof

The hip and dormer roofs have a slate tile roof system. The dormers also have slate side walls.

Slate Roof Existing Conditions:

- Slate tiles **missing or loose** in areas at ridges and hips.
- Slate tiles **exfoliated, broken and stained** in areas.

Slate Roof Recommendations for Repair:

VBA recommends the following repairs:

1. Provide new ridge and hip slate tiles and secure properly.
2. Demolish deteriorated slate tiles and replace with new.

This work should be performed with the flashing, dormer and flat roof repairs.

Figure 2.6_3 Lower Roof - Base Flashing Ponding & Poor Condition

C. Flat Roof

Flat roofs were only surveyed from above. Access to roofs not possible at time of survey. See section *2.3 Tower, A. Roof & Parapet Wall* for Tower Roof existing conditions and recommendations.

Flat Roof Existing Conditions:

- **Roofing materials** appear to be in fair condition. Water ponding in an area of the roof. Further survey of the roofs is required.

Flat Roof Recommendations for Repair:

Further up close survey is required for the roofs existing conditions to be investigated and repair recommendations determined.

Figure 2.6_4 Flat Roof

2.7 Recommended Upgrades

A. Architectural

Architectural Existing Conditions:

- **Apparatus Room concrete slab** on grade has cracks traveling East-West across the slab. A previous concrete patch is visible.
- **Apparatus Room plaster** ceiling has rust stains and is deteriorated. Other plaster wall and ceiling finishes also deteriorated from water infiltration.
- **Basement wall** has water stains and effloresence.
- **Basement brick chimney** has vertical crack.

Architectural Recommendations for Upgrades:

VBA recommends the following upgrades:

1. Repair cracks in the concrete slab on grade.
2. Patch plaster ceilings and wall finishes.
3. Clean all effloresence and staining from Basement wall.
4. Repair brick crack.

Figure 2.7_1 Concrete Slab Crack & Patch

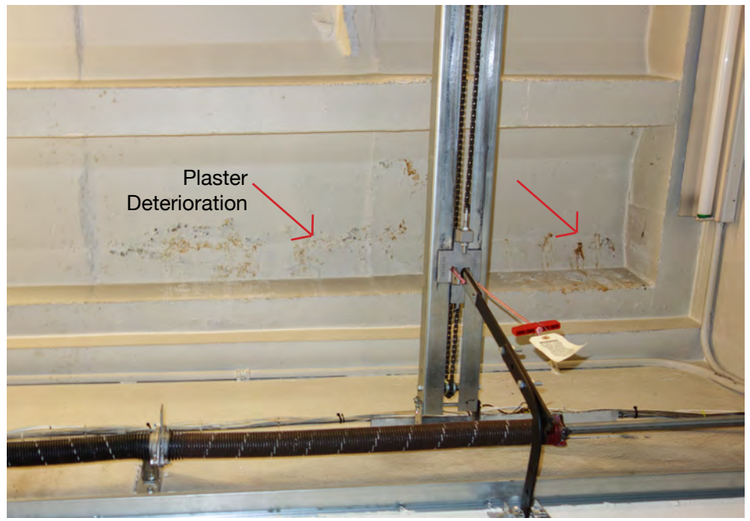


Figure 2.7_2 Plaster Ceiling Deterioration

B. Mechanical

i) Cellar

1) Boiler steam & condensate piping severely corroded, recommend replacement. New piping must remain on the floor if a steam heating system is to remain. Piping may be rerouted to be less hazardous. Cross-over plates may still be required, refer to Mechanical Upgrades Item 2.

2) Low-piping (steam condensate return) on boiler room floor is tripping hazard, recommend steel cross-over plates:

3) Boiler appears deteriorated & neglected, re-build of room is strongly recommended (see also 'exterior site' discussion regarding prevention of stormwater from infiltrating into cellar).

ii) First Floor/Apparatus Floor

4) House reports inadequate heat, particularly in apparatus room. Possible resolution includes providing additional steam appliances. A complete engineering analysis could be performed to determine building heating and cooling loads.

5) Repair leaking steam traps. Leaking steam straps present a burn hazard and an opportunity for energy savings.

C. Electrical

i) Cellar

1) Main service switch internally corroded, recommend replacement

ii) General Upgrades

2) Evaluate lighting system for upgrade to LED.

D. Plumbing

i) Cellar

1) Various piping branches have been previously abandoned, recommend complete removal of abandoned utilities:

2) Branches of water and sanitary piping corroded, recommend replacement.

ii) First Floor/Apparatus Floor

3) Piping (likely natural gas) embedded in apparatus slab. Should verified to be abandoned & removed to facilitate renovations:

4) Water leakage noted near first floor bathroom, recommend opening wall to identify source & repair at source.

5) Bathroom sanitary piping in poor condition. Recommend replacing with new cast iron piping.

6) Replace all non-compliant PVC sanitary piping with compliant material (see Plumbing Code Violations). Recommend replacing PVC pipe with more durable material, i.e. cast iron.

iii) Second Floor

7) Water/sanitary piping corroded, recommend replacement

8) Numerous branches of abandoned piping to be removed.

9) Replace all non-compliant PVC sanitary piping with compliant & more durable material, i.e. cast iron.

iv) Roof (tower, pitched roof & gutters)

10) Drain on tower flat roof installed at high-point, permits stormwater infiltration into tower structure.

11) Various points in gutters do not pitch positively towards downspouts

Items 10 & 11 above could generate code-violations if deficiencies are left to worsen and promote further deterioration.

D. Exterior Drainage

i) General Upgrades

1) No splash-block or stones at bottom of downspout near exterior steel staircase, water drains underground & against foundation wall (see Mechanical discussion of degraded cellar equipment per water infiltration & other sources). Also adjust downspout to avoid splashing onto electrical conduits:

2) Area beneath exterior steel staircase receives runoff from two gutter downspouts & is lower than adjacent grade. Raise grade to pitch towards parking lot/roadway to eliminate undrained low-spot adjacent to building

3) Recommend replacing make-shift gutter over rear door with awning & downspout:

2.8 Program Design Options

GCFD is procuring a new ladder truck to be potentially housed at Firehouse #2. VBA is proposing two design options for an new addition to house the ladder truck.

A. Option A

Please see ST-100.A Site Plan Option A.

- New addition on East side of existing building with Ladder Apparatus Room, ADA Elevator, and New Egress Stair. New Lobby to connect to existing Tower Lobby.
- New driveway on Stewart Ave.
- Provides ADA elevator access to Second Floor.
- Provides new egress and connection to Second Floor.
- More difficult siting of addition due to grade elevation change.

Figure 2.8_1 Option A - Stewart Ave Location (Google Street View)

B. Option B

Please see ST-100.B Site Plan Option B.

- New addition on South side of existing building with Ladder Apparatus Room, ADA Elevator, and New Egress Stair. New Lobby to connect to existing Apparatus Room.
- New through driveway on Edgemere Rd and Clinch Ave.
- New parking lot on South end of site.
- Provides ADA elevator access to Second Floor.
- Replace existing stair with new egress stair to Second Floor.
- Provides more direct connection from new addition lobby to existing building at Apparatus Room.

Figure 2.8_2 Option B - Edgemere Rd Location (Google Street View)

Figure 2.8_3 Option B - Clinch Ave Location (Google Street View)

C. Exterior

i) Stormwater detention to be provided for new building addition, pending confirmation of requirements by Nassau County Dept. of Public Works (DPW) 239F review. Impact of building expansion to existing stormwater discharge patterns to be part of this review as well, expect continued discharge to grade (see recommended upgrades in Section 2.5.d). Stormwater detention for new addition is required per replacement of landscaped area with 2,000 square-feet of impervious building footprint, eight (8) inches of storage across increased impervious area typically required & results in approximately 1,325 cubic feet of detention (typically provided in underground vaults, dry-wells, etc.). Stewart Avenue is Nassau County Road, final detention determination shall be determined by meeting between Village of Garden City & Nassau County DPW, reduction may be available.

D. Mechanical

i) Provide new heating, ventilating, and air conditioning systems (HVAC) for the new addition(s) only. Depending on the location of the proposed apparatus bay addition the existing heating and cooling systems may remain partially unchanged. The existing Sitting Room, Bunk Rooms, and Kitchen are naturally ventilated. Heating is provided via cast iron radiators and cooling is provided by through-wall air conditioning units.

In proposed Option A the apparatus bay would cover the windows and openings to the exterior for the sitting room, bathroom, and the tower lobby. A new method of ventilating and cooling these spaces would be required. A variable refrigerant flow (VRF) split make-up air unit along with a series of split heat pump units could provide the required ventilation and cooling. The kitchen exhaust duct would be rerouted to the exterior and the fan replaced. The bathroom exhaust system would be similarly rerouted and the fan replaced.

In proposed Option B, the existing natural ventilation for all interior spaces is not compromised. The existing heating and cooling systems may remain and be refurbished to working condition.

In both options the existing steam boiler capacity would be evaluated to determine if it is sufficient for the expanded building. The steam piping system would be modified to extend into the new space. Inadequate heating complaints in the existing apparatus bay may be addressed by adding additional or larger unit heaters.

ii) Provide new HVAC systems for the entire building. The existing window AC units would be removed and returned to The City. New VRF split heat pump units would be installed in each space. This option is more expensive but provides a more robust system. Again, inadequate heating complaints may be addressed by additional or larger steam unit heaters.

iii) In either of the two above options the existing steam heating system should be refurbished and restored to proper working order. This includes replacing leaking valves and fittings (a steam trap in the apparatus bay was observed to be leaking) and refurbishing or replacing existing cast iron radiators.

2.9 Cost Estimate

GCFD Firehouse #2 Preliminary Cost Estimate*

Scope of Work Item		Amount
2.1 National, State & Local Codes		
a. Fire Stopping & Fire Safing	$	4,100
b. Egress	$	135,200
c. Mechanical	$	31,000
d. Electrical	$	15,600
e. Plumbing	$	45,700
National, State & Local Codes TOTAL	**$**	**231,600**
2.2 ADA Compliance		
a. Interior Route	$	87,500
First Floor Bathroom	$	75,600
* See Alternative for Second Floor Bathroom		
ADA Compliance TOTAL	**$**	**163,100**
2.3 Tower Option 1		
a. Tower Roof & Parapet Wall	$	140,900
b. Hose Tower Steel & Metal Stair	$	129,900
c. Tower Brick & Glass Block	$	541,600
Tower Option 1 TOTAL	*not included*	**$ 812,400**
2.3 Tower Option 2		
a. Tower Roof & Parapet Wall	$	106,200
b. Hose Tower Steel & Metal Stair	$	106,700
c. Tower Brick & Glass Block	$	299,200
Tower Option 2 TOTAL	**$**	**512,100**
2.4 Built In Gutters		
a. Copper Liner & Cast Stone Gutter	$	651,100
b. Scupper & Conductor Head	$	26,200
Built In Gutters TOTAL	**$**	**677,300**
2.5 Facades & Dormers		
a. Brick & Cast Stone	$	260,600
b. Windows & Lintels	$	389,300
Facades TOTAL	**$**	**649,900**
2.4 Roofs		
a. Flashing	$	19,000
b. Slate Roof	$	33,300
Roofs TOTAL	**$**	**52,300**
Firehouse #2 + Tower Option 2 TOTAL	**$**	**2,286,300**

***10% General Conditions, 10% Overhead & Profit, 4% Escalation, & 15% Design Contingency Built In**

2.2 ADA Compliance Alternative		
Second Floor Bathroom	$	118,400
2.5 Recommended Upgrades		
a. Architectural	$	40,000
b. Mechanical	$	118,800
c. Electrical - LED Lighting Upgrade	$	149,800
d. Plumbing	$	66,400
e. Exterior Drainage	$	25,000
Recommended Upgrades TOTAL	**$**	**400,000**
2.6 Program Design Options		
a. Option A	$	2,515,600
b. Option B	$	3,160,700
Abatement - Continuous Project		
Abatement	$	317,200
Air Monitoring	$	34,900
Continuous Abatement TOTAL	**$**	**352,100**
Abatement - Phased Project		
Abatement	$	396,600
Air Monitoring	$	43,600
Phased Abatement TOTAL	**$**	**440,200**
Abatement - Exterior Waterproofing		
Abatement	$	310,600
Air Monitoring	$	28,000
Exterior Waterproofing Abatement TOTAL	**$**	**338,600**

3.0 APPENDIX

3.1 Architectural

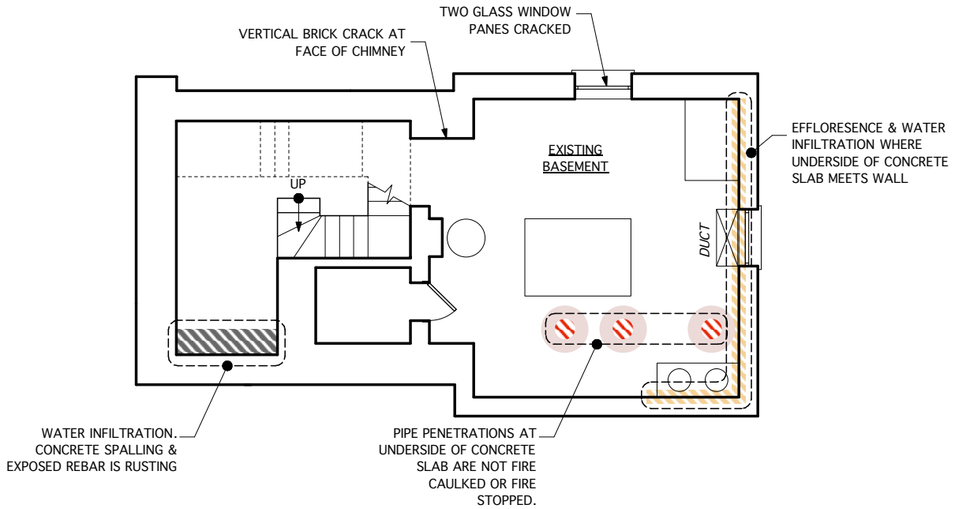
EX-001 Basement Plan Existing Conditions
EX-100 First Floor Plan Existing Conditions
EX-101 Second Floor Plan Existing Conditions

EX-201 South Elevation Existing Conditions

EX-300 Tower Section Existing Conditions

A-100 First Floor Plan - ADA Bathroom

ST-100.0A Site Plan Option A
ST-100.0B Site Plan Option B



BASEMENT PLAN
EXISTING CONDITIONS — 1

0 2' 4' 8'

KEY:

- NEW WALLS/ PARTITIONS
- EXISTING WALLS/CEILINGS
- AREA NOT IN SCOPE OF WORK

ENVELOPE EXISTING CONDITIONS KEY:

- WATER STAINING
- HEAVY WATER INFILTRATION & PLASTER DETERIORATION
- BRICK & PAINT SPALLING TO TOUCH
- HEAVY WATER INFILTRATION & MASONRY EFFLORESENCE
- LINTEL/STL RUST VISIBLE

NYS CODE EXISTING CONDITIONS KEY:

- OPEN/ NON FIRE STOPPED PENETRATIONS IN FIRE RATED ASSEMBLY
- AREA OF EGRESS / ACCESSIBILITY ISSUE
- AREA OF FIRE RATING ISSUE
- EXISTING EXIT SIGN & EMERGENCY LIGHT
- EXISTING EMERGENCY LIGHT

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NYS# 014883

Project

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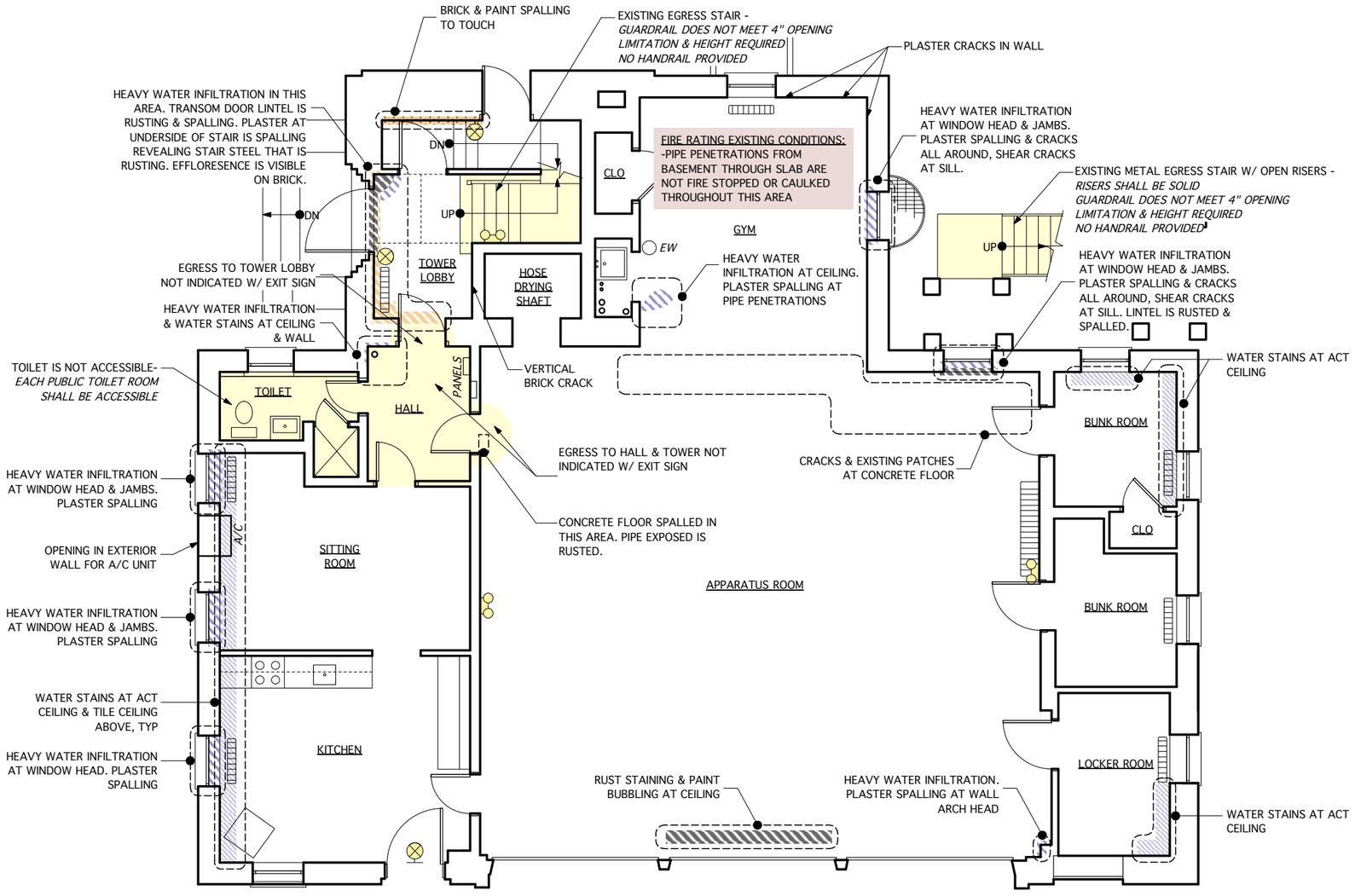
Garden City, NY 11530

Drawing Title

EXISTING BASEMENT PLAN

Drawing Number

EX-001.00



KEY:

- NEW WALLS/ PARTITIONS
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- AREA NOT IN SCOPE OF WORK

ENVELOPE EXISTING CONDITIONS KEY:

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- HEAVY WATER INFILTRATION & PLASTER DETERIORATION
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- LINTEL/STL RUST VISIBLE

NYS CODE EXISTING CONDITIONS KEY:

- OPEN/ NON FIRE STOPPED PENETRATIONS IN FIRE RATED ASSEMBLY
- AREA OF EGRESS / ACCESSIBILITY ISSUE
- AREA OF FIRE RATING ISSUE
- EXISTING EXIT SIGN & EMERGENCY LIGHT
- EXISTING EMERGENCY LIGHT

FIRST FLOOR PLAN
EXISTING CONDITIONS 1

0 2' 4' 8'

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Project

FIREHOUSE #2

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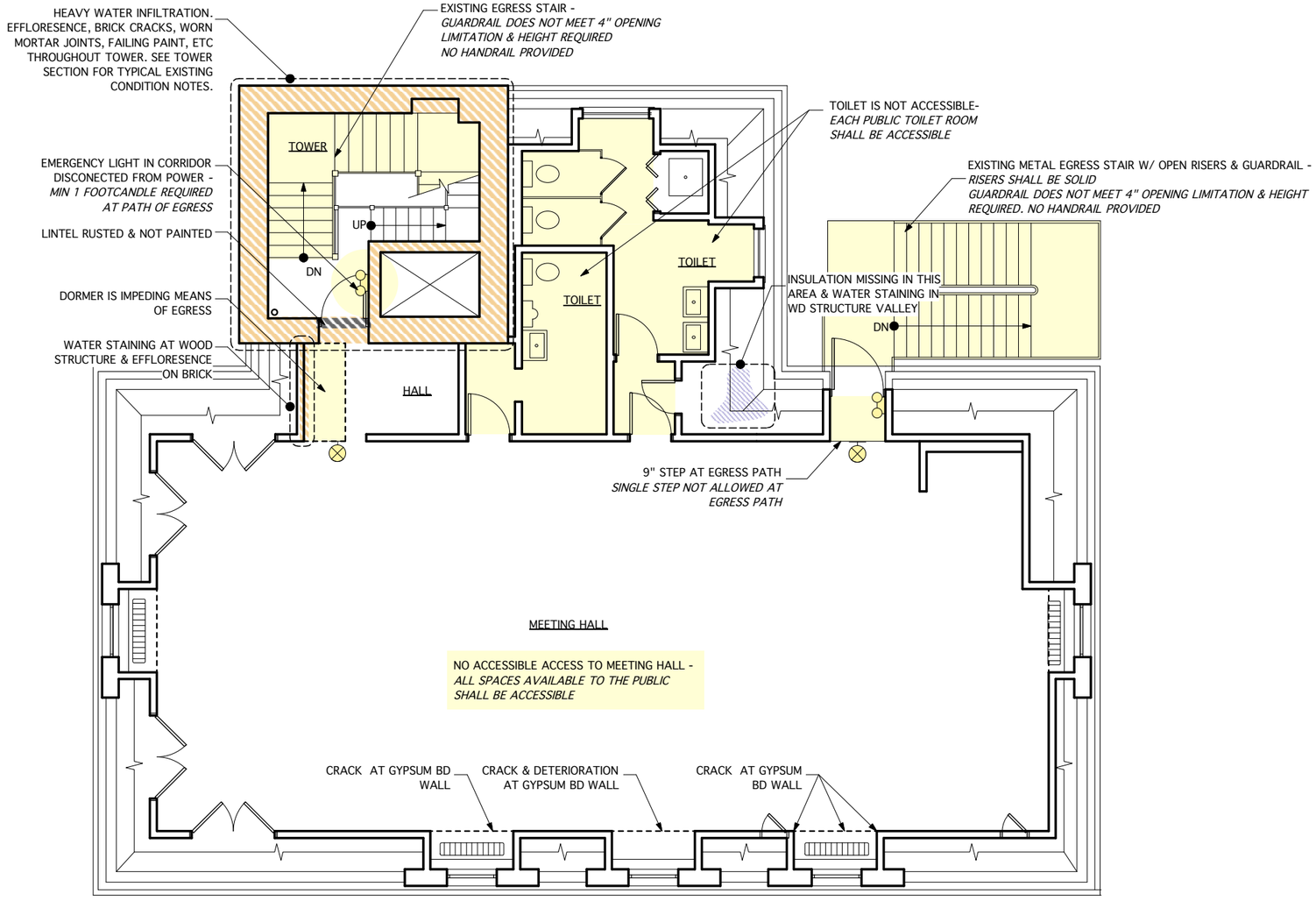
Garden City, NY 11530

Drawing Title

FIRST FLOOR PLAN EXISTING CONDITIONS

Drawing Number

EX-100.00



KEY:

- NEW WALLS/ PARTITIONS
- EXISTING WALLS/CEILINGS
- AREA NOT IN SCOPE OF WORK

ENVELOPE EXISTING CONDITIONS KEY:

- WATER STAINING
- HEAVY WATER INFILTRATION & PLASTER DETERIORATION
- BRICK & PAINT SPALLING TO TOUCH
- HEAVY WATER INFILTRATION & MASONRY EFFLORESENCE
- LINTEL/STL RUST VISIBLE

NYS CODE EXISTING CONDITIONS KEY:

- OPEN/ NON FIRE STOPPED PENETRATIONS IN FIRE RATED ASSEMBLY
- AREA OF EGRESS / ACCESSIBILITY ISSUE
- AREA OF FIRE RATING ISSUE
- EXISTING EXIT SIGN & EMERGENCY LIGHT
- EXISTING EMERGENCY LIGHT

EXISTING SECOND FLOOR PLAN 1

0 2' 4' 8'

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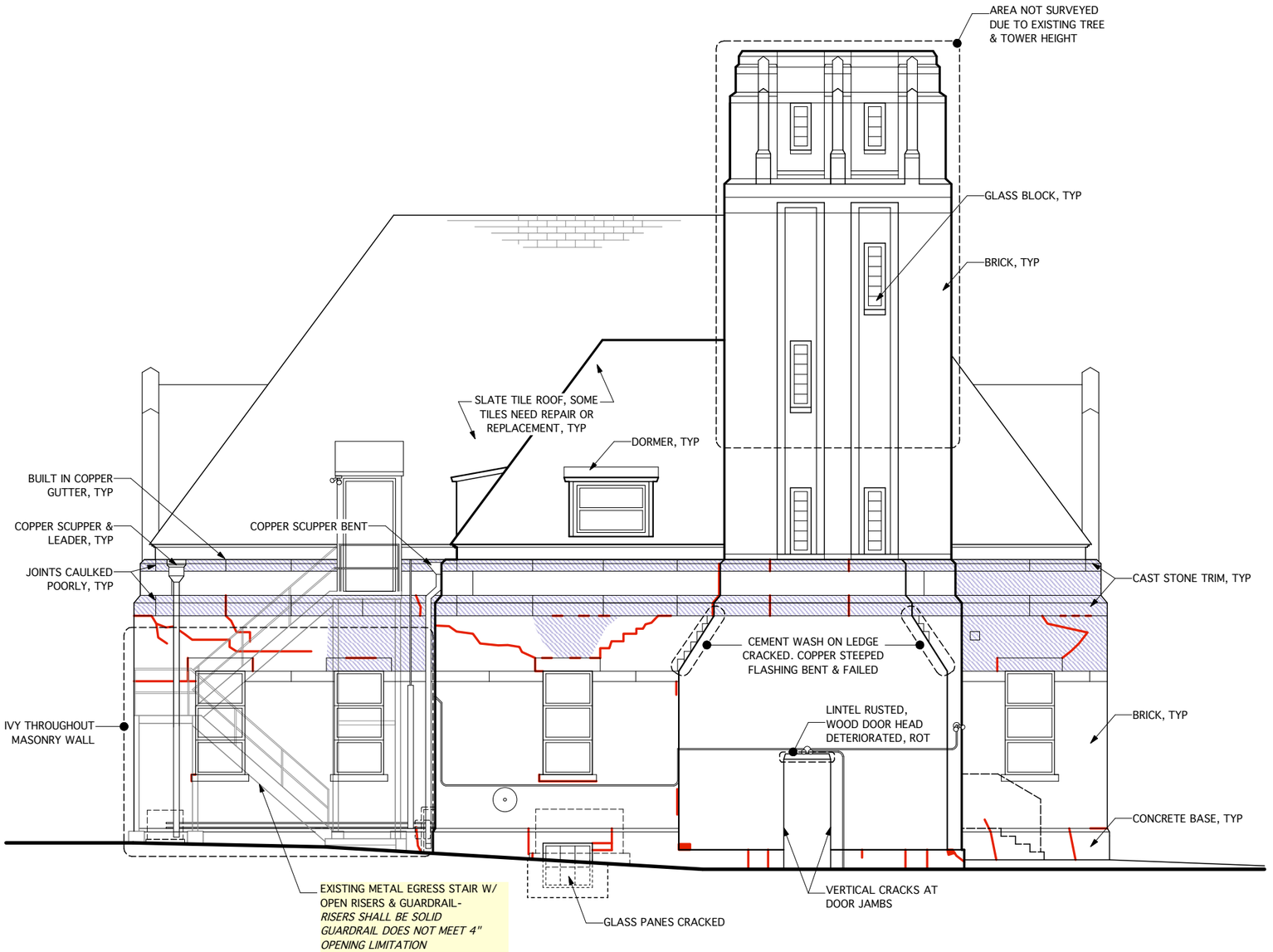
Garden City, NY 11530

Drawing Title

EXISTING SECOND FLOOR PLAN

Drawing Number

EX-101.00



NYS CODE EXISTING CONDITIONS KEY:

- AREA OF EGRESS / ACCESSIBILITY ISSUE

ENVELOPE EXISTING CONDITIONS KEY:

- MASONRY CRACK
- OPEN / CRACK AT MASONRY JOINT
- SPALL / MISSING MASONRY
- MASONRY / WATER STAINING

SOUTH ELEVATION
EXISTING CONDITIONS 1

0 2' 4' 8'

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NYS# 014883

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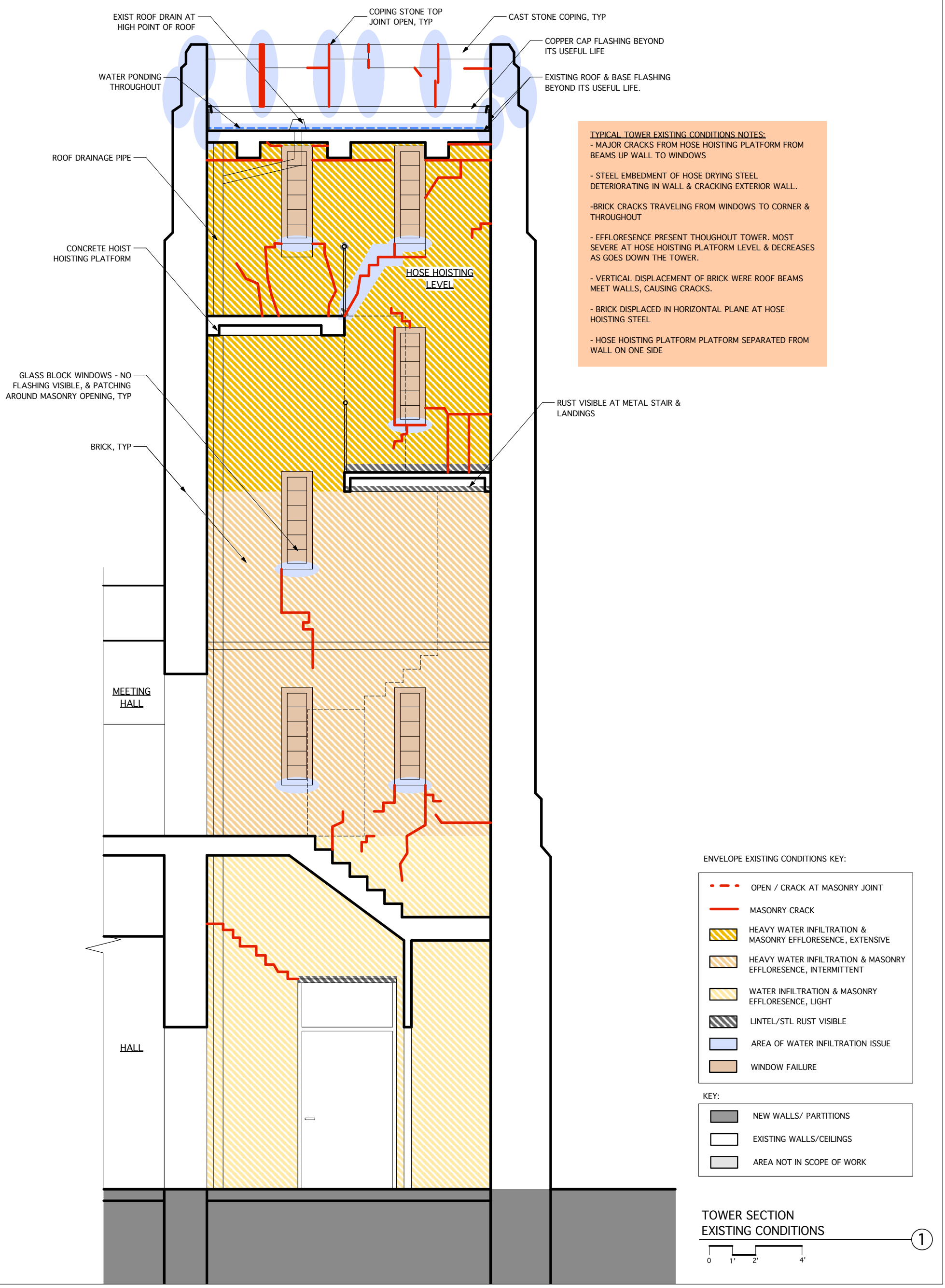
Drawing Title

SOUTH ELEVATION
EXISTING CONDITIONS

Drawing Number

EX-201.00



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Project
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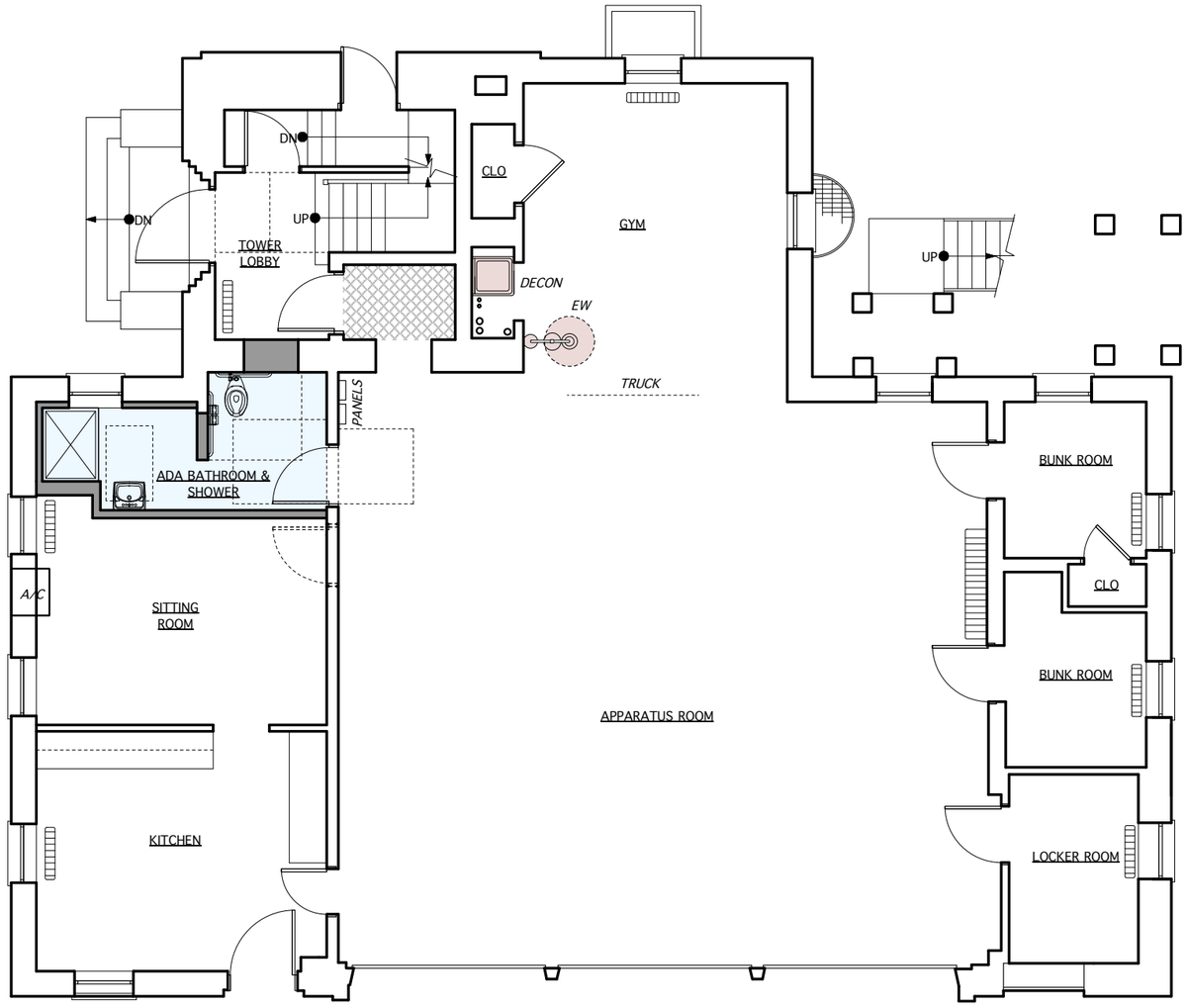
Drawing Title
TOWER SECTION
EXISTING CONDITIONS

Drawing Number
EX-300.00



KEY:

- NEW WALLS/ PARTITIONS
- EXISTING WALLS/CEILINGS
- AREA NOT IN SCOPE OF WORK

FIRST FLOOR PLAN 1

0 2' 4' 8'

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FIREHOUSE #2

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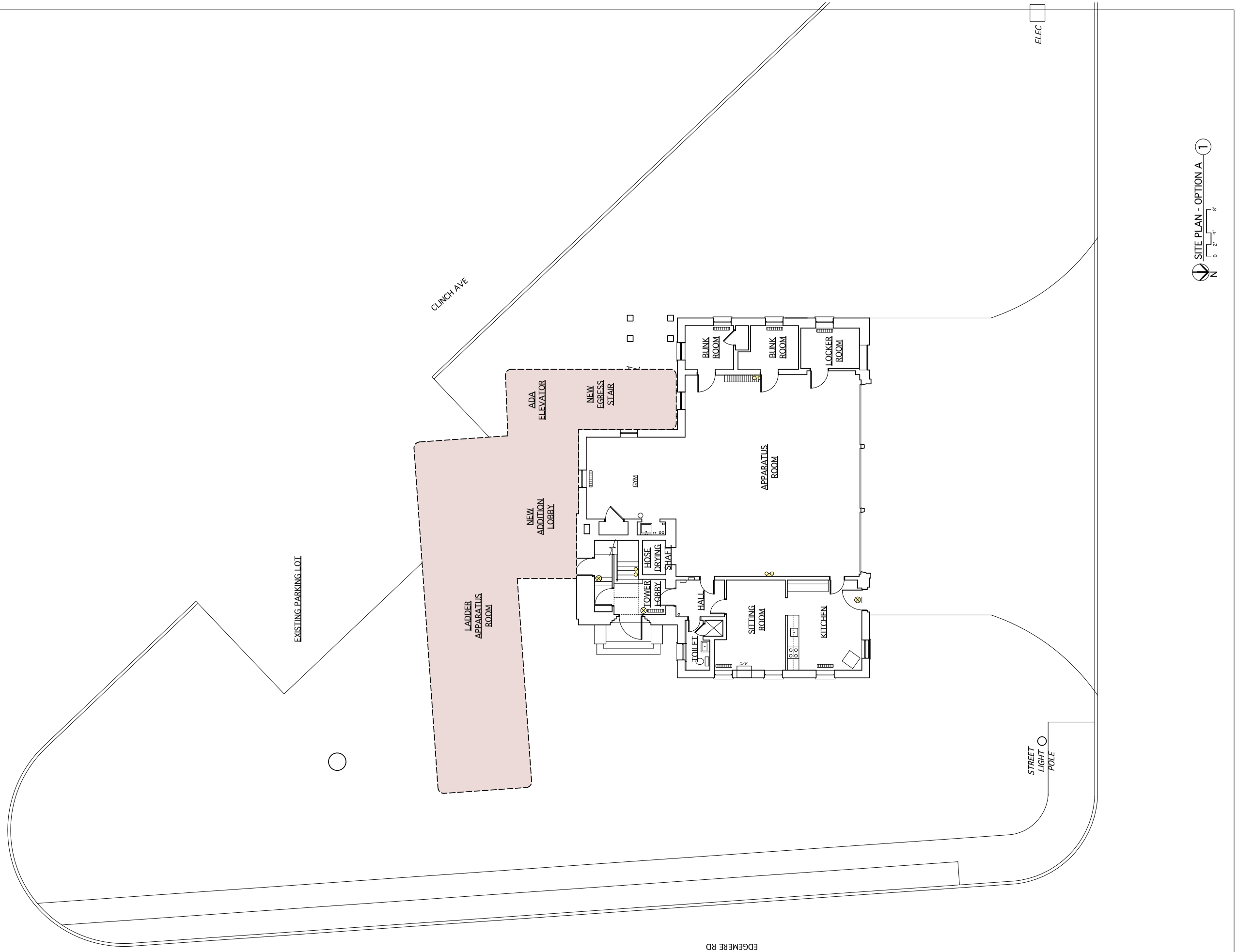
Drawing Title

FIRST FLOOR PLAN

Drawing Number

A-100.00



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NYS# 014883

Project

FIREHOUSE #2

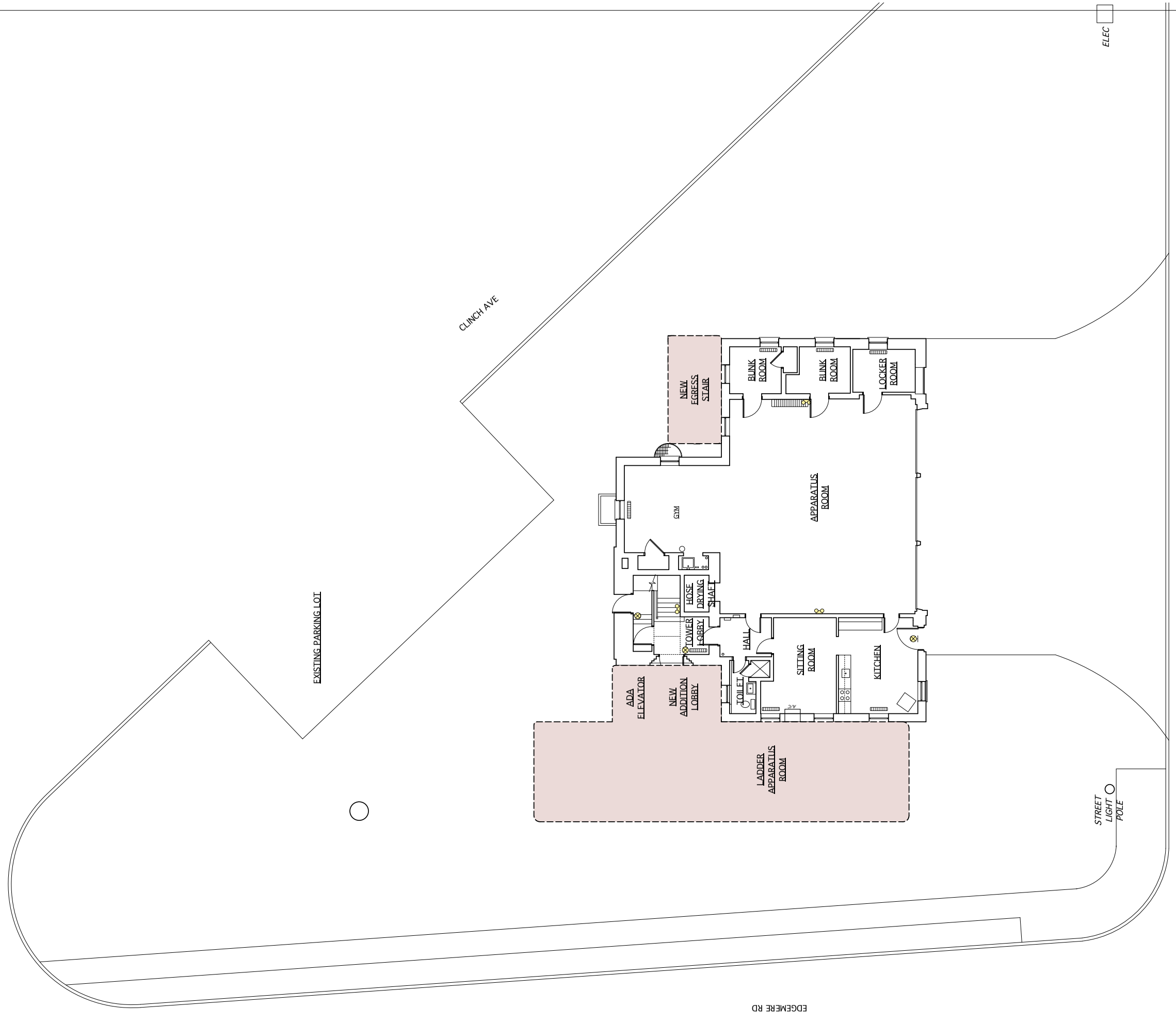
Stewart Ave & Edgemere Rd
Garden City, NY 11530

Drawing Title

SITE PLAN OPTION A

Drawing Number

ST-100.0A



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NYS# 014883

Project

FIREHOUSE #2

Stewart Ave & Edgemere Rd
Garden City, NY 11530

Drawing Title

SITE PLAN OPTION B

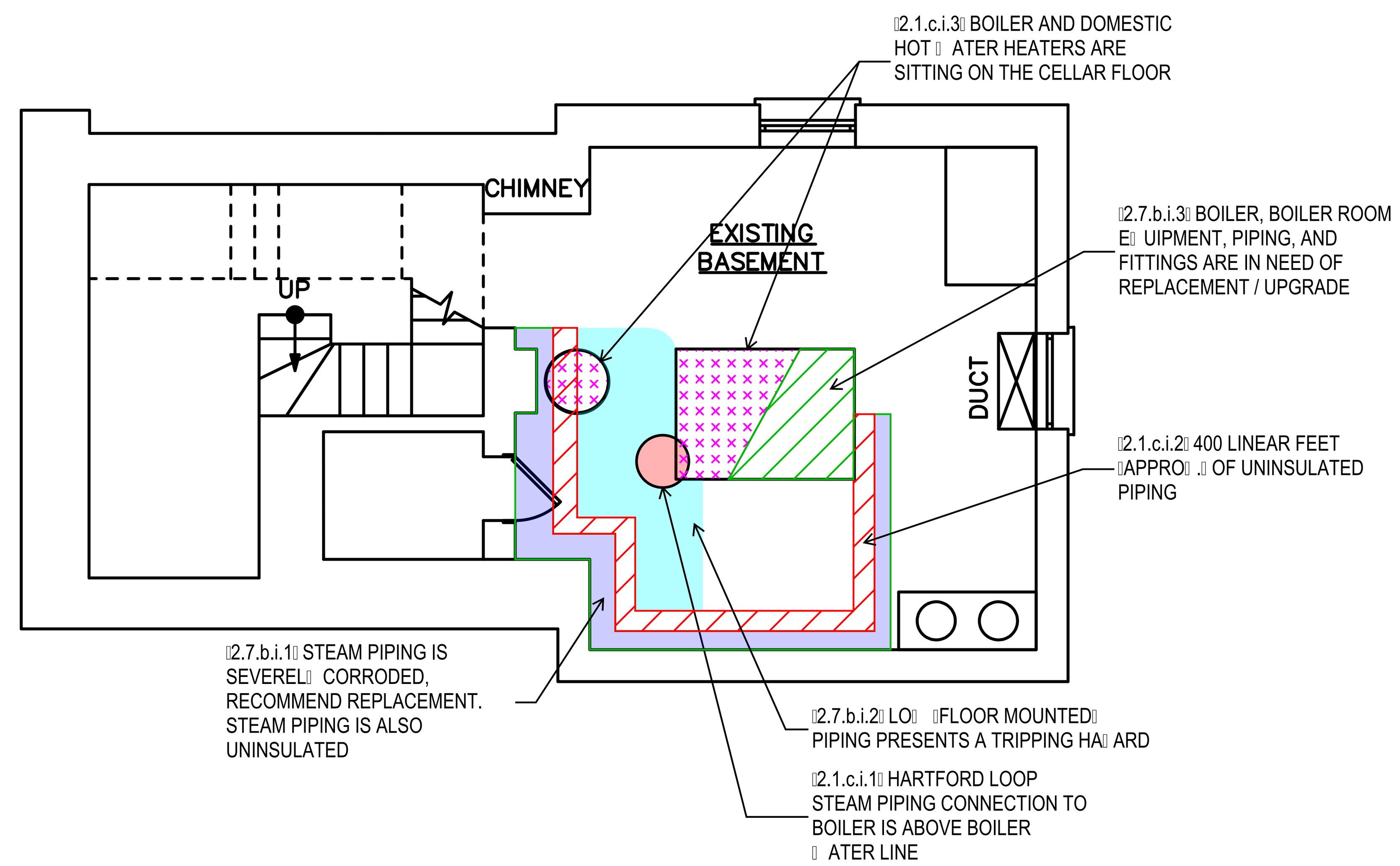
Drawing Number

ST-100.0B

3.0 APPENDIX

3.2 Mechanical

M-100 Mechanical Basement Floor Plan
M-101 Mechanical First Floor Plan
M-102 Mechanical Second Floor Plan



KEY - NEW YORK STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LACKING MECHANICAL EXHAUST
- LACKING MECHANICAL VENTILATION / PRESSURIZATION
- OSHA / FALL HAZARD
- AIR INTAKE TOO CLOSE TO CONTAMINANT SOURCE
- HAZARDOUS PIPING CONFIGURATION
- EQUIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

KEY - RECOMMENDED UPGRADES

- EQUIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NEW EQUIPMENT
- SEVERELY CORRODED PIPING
- TRIPPING HAZARD
- INADEQUATE HEATING
- LEAKING PIPING / FITTING
- DAMAGED CHIMNEY BREECHING

*The above drawing keys are applicable to the mechanical drawings only. Refer to each trade's drawing key for trade-specific symbols.

1/4"=1'-0" 4 2 0 4

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EAO

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PAB

NORTH

Project
FIREHOUSE #2
Stewart Ave & Edgemere Rd
Garden City, NY 11530

Drawing Title
MECHANICAL BASEMENT FLOOR PLAN

Drawing Number
M-100

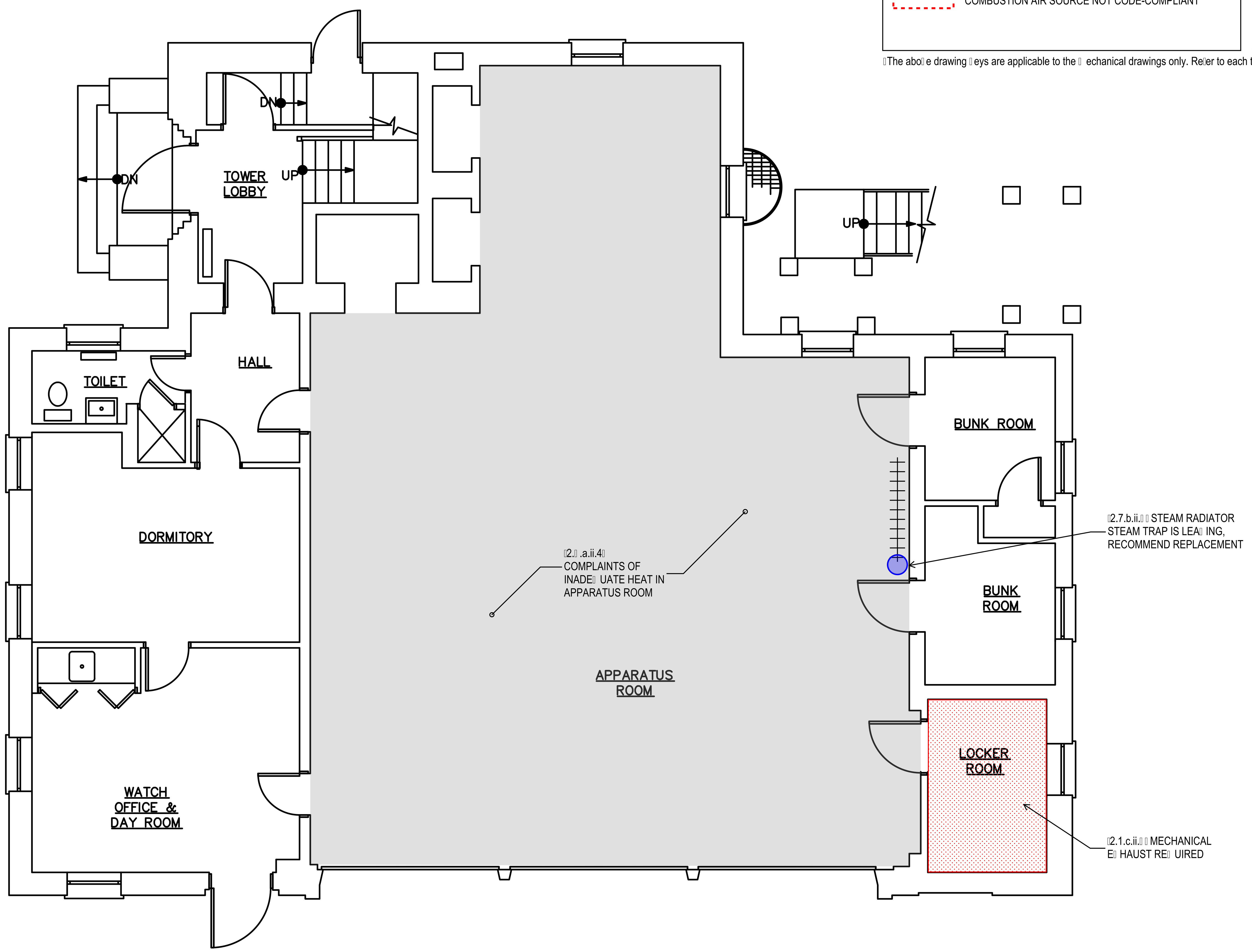
▯E▯ - NE▯ ▯OR▯ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LAC▯ ING MECHANICAL E▯ HAUST
- LAC▯ ING MECHANICAL VENTILATION / PRESSURI▯ ATION
- OSHA / FALL HA▯ ARD
- AIR INTA▯ E TOO CLOSE TO CONTAMINANT SOURCE
- HA▯ ARDOUS PIPING CONFIGURATION
- E▯ UIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

▯E▯ - RECOMMENDED UPGRADES

- E▯ UIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NE▯ E▯ UIPMENT
- SEVEREL▯ CORRODED PIPING
- TRIPPING HA▯ ARD
- INADE▯ UATE HEATING
- LEA▯ ING PIPING / FITTING
- DAMAGED CHIMNE▯ BREECHING

▯The abo▯e drawing ▯eys are applicable to the ▯ echanical drawings only. Re▯er to each trade's drawing ▯ey ▯or trade-speci▯ic sy▯ bols.



1/4"=1'-0"

4 2 0 4

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Belflore Proj #:

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EAO

Checked:
PAB

NORTH

Project

FIREHOUSE #2

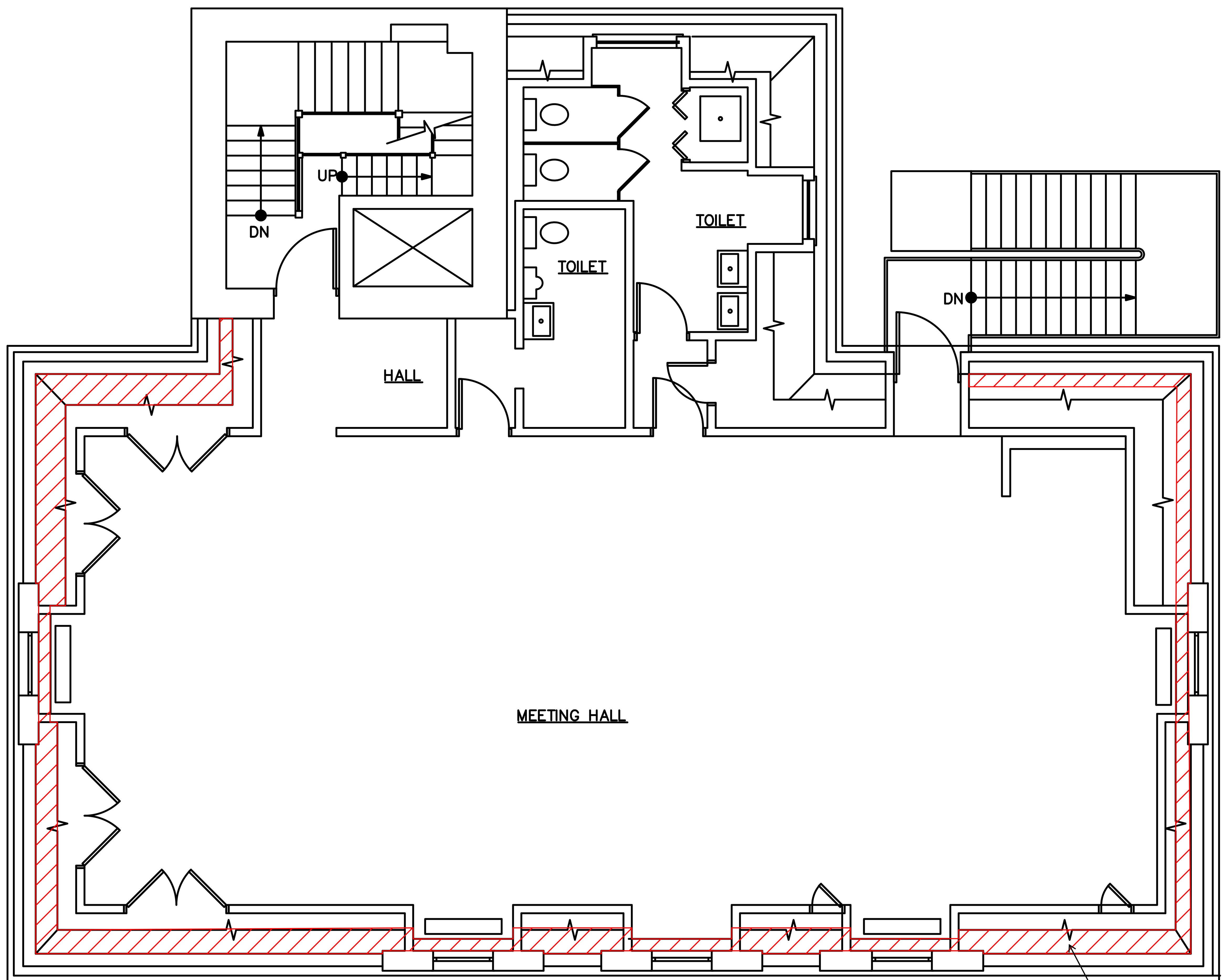
Stewart Ave & Edgemere Rd
Garden City, NY 11530

Drawing Title

MECHANICAL FIRST FLOOR PLAN

Drawing Number

M-101



2.1.c.iii.   7 PERIMETER CRA L SPACE IS UNINSULATED. STEAM PIPING   ITHIN IS ALSO UNINSULATED. UNINSULATED CRA L SPACE IS VENTED TO SPACE INTERIOR. ROUGHL 2 0 LINEAR FEET OF UNINSULATED PIPING TOTAL.

E - NE   OR STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LAC ING MECHANICAL E HAUST
- LAC ING MECHANICAL VENTILATION / PRESSURI ATION
- OSHA / FALL HA ARD
- AIR INTA E TOO CLOSE TO CONTAMINANT SOURCE
- HA ARDOUS PIPING CONFIGURATION
- E UIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

E - RECOMMENDED UPGRADES

- E UIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NE E UIPMENT
- SEVEREL CORRODED PIPING
- TRIPPING HA ARD
- INADE UATE HEATING
- LEA ING PIPING / FITTING
- DAMAGED CHIMNE BREECHING

The abo e drawing eys are applicable to the echanical drawings only. Re er to each trade's drawing ey or trade-speci ic sy bols.

1/4"=1'-0"

4 2 0 4

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Checked:
PAB

NORTH

Project
FIREHOUSE #2
Stewart Ave & Edgemere Rd
Garden City, NY 11530

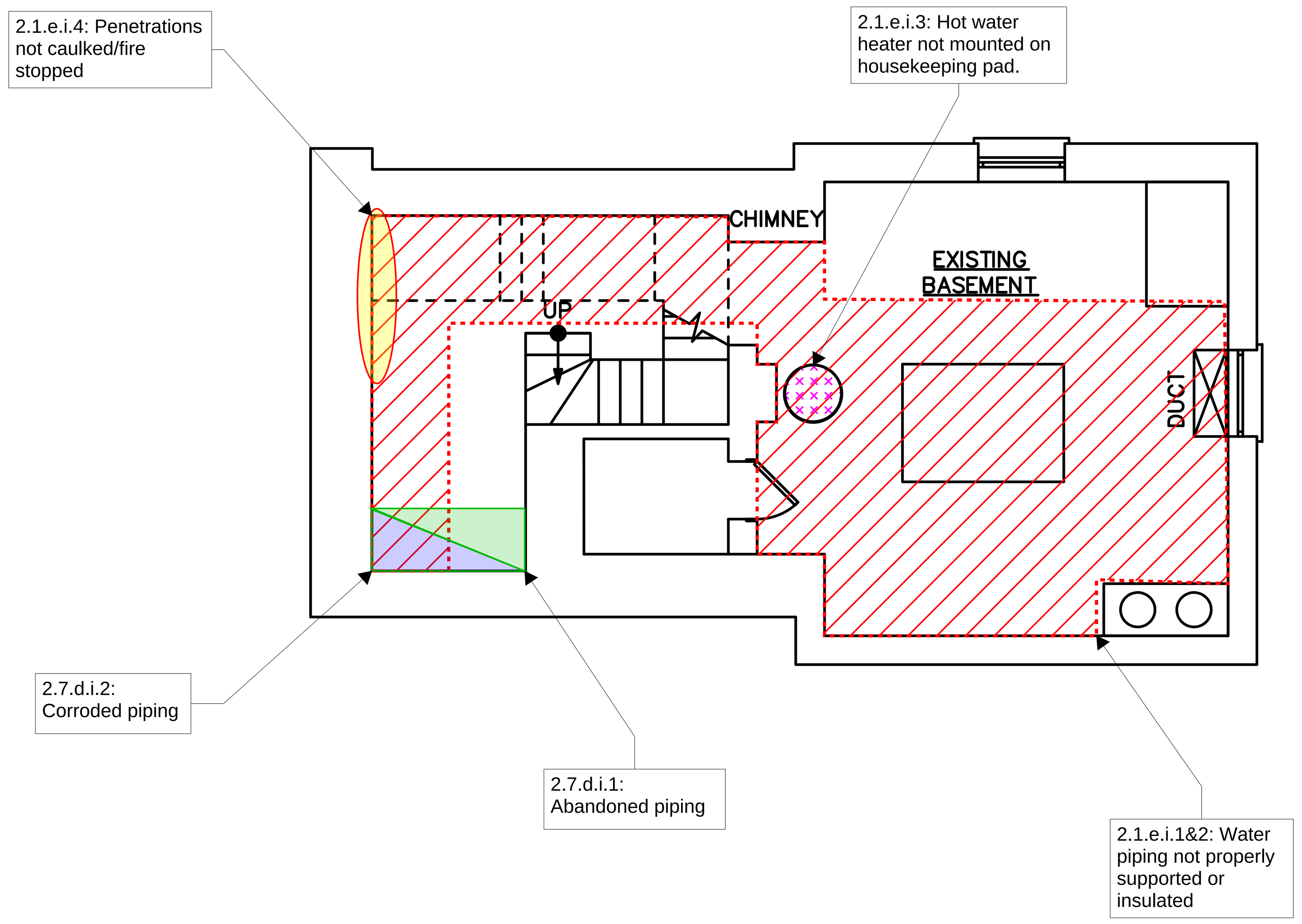
Drawing Title
MECHANICAL SECOND FLOOR PLAN

Drawing Number
M-102

3.0 APPENDIX

3.3 Plumbing

P-100 Plumbing Basement Floor Plan
P-101 Plumbing First Floor Plan
P-102 Plumbing Second Floor Plan



□ E□ - NE□ □ OR□ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- CODE VIOLATION
- INADE□ UATE ROOF DRAINAGE
- PENETRATION NOT CAUL□ ED/FIRE STOPPED
- E□ UIPMENT IS NOT PAD-MOUNTED
- PIPING NOT PROPERL□ SUPPORTED

□ E□ - RECOMMENDED UPGRADES

- E□ UIPMENT UPGRADE
- PIPE MATERIAL UPGRADE
- ABANDONED PIPING
- SEVEREL□ CORRODED PIPING
- TRIPPING HA□ ARD
- LEA□ ING PIPING / FITTING

1/4"=1'-0" 4 2 0 4

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Drawing Title

PLUMBING BASEMENT FLOOR PLAN

Drawing Number

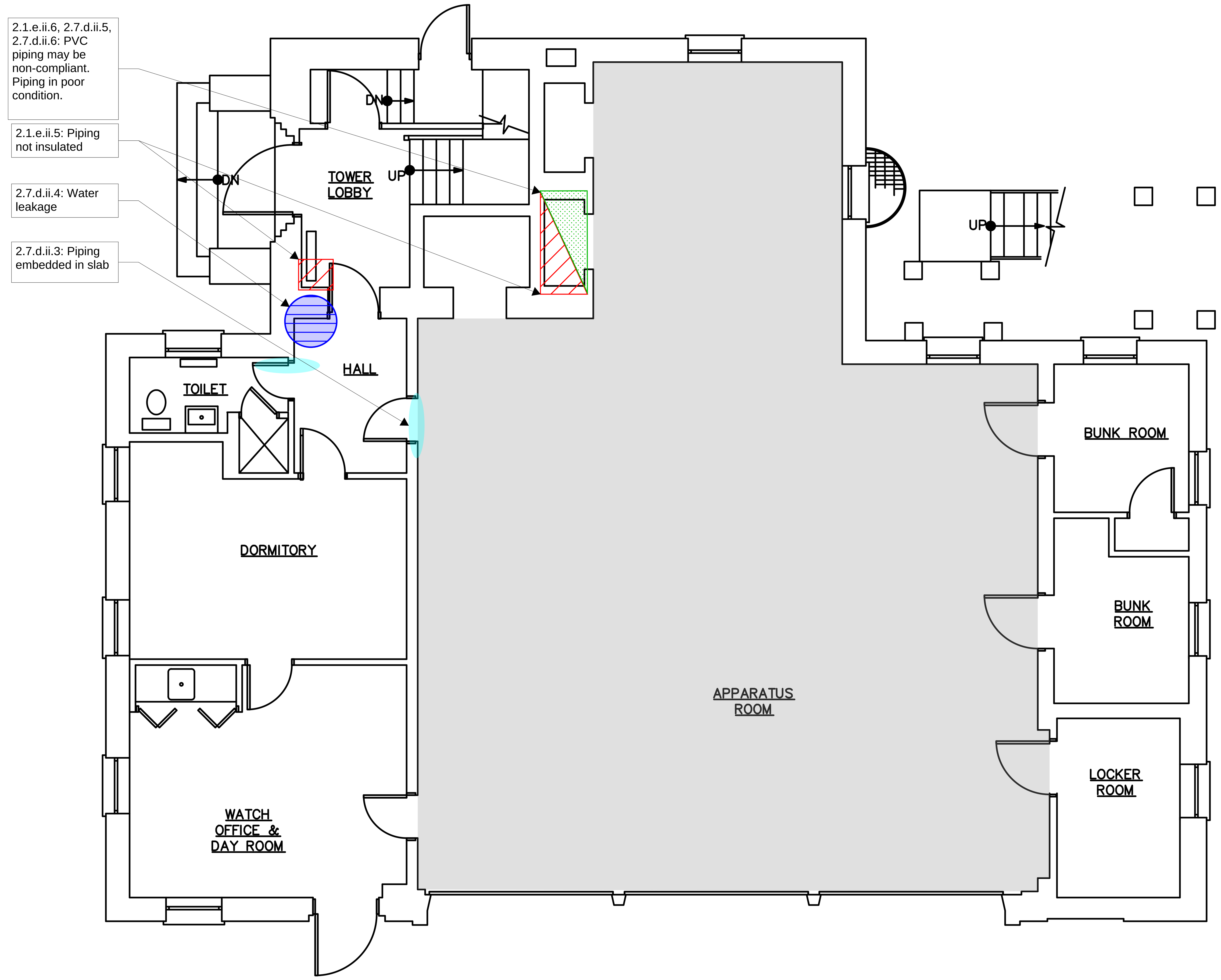
P-100.00

KEY - NEW YORK STATE CODE VIOLATIONS

- UNINSULATED PIPING
- CODE VIOLATION
- INADEQUATE ROOF DRAINAGE
- PENETRATION NOT CAULKED/FIRE STOPPED
- EQUIPMENT IS NOT PAD-MOUNTED
- PIPING NOT PROPERLY SUPPORTED

KEY - RECOMMENDED UPGRADES

- EQUIPMENT UPGRADE
- PIPE MATERIAL UPGRADE
- ABANDONED PIPING
- SEVERELY CORRODED PIPING
- TRIPPING HAZARD
- LEAKING PIPING / FITTING



1/4"=1'-0"
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Drawing Title
PLUMBING FIRST FLOOR PLAN

Drawing Number
P-101.00

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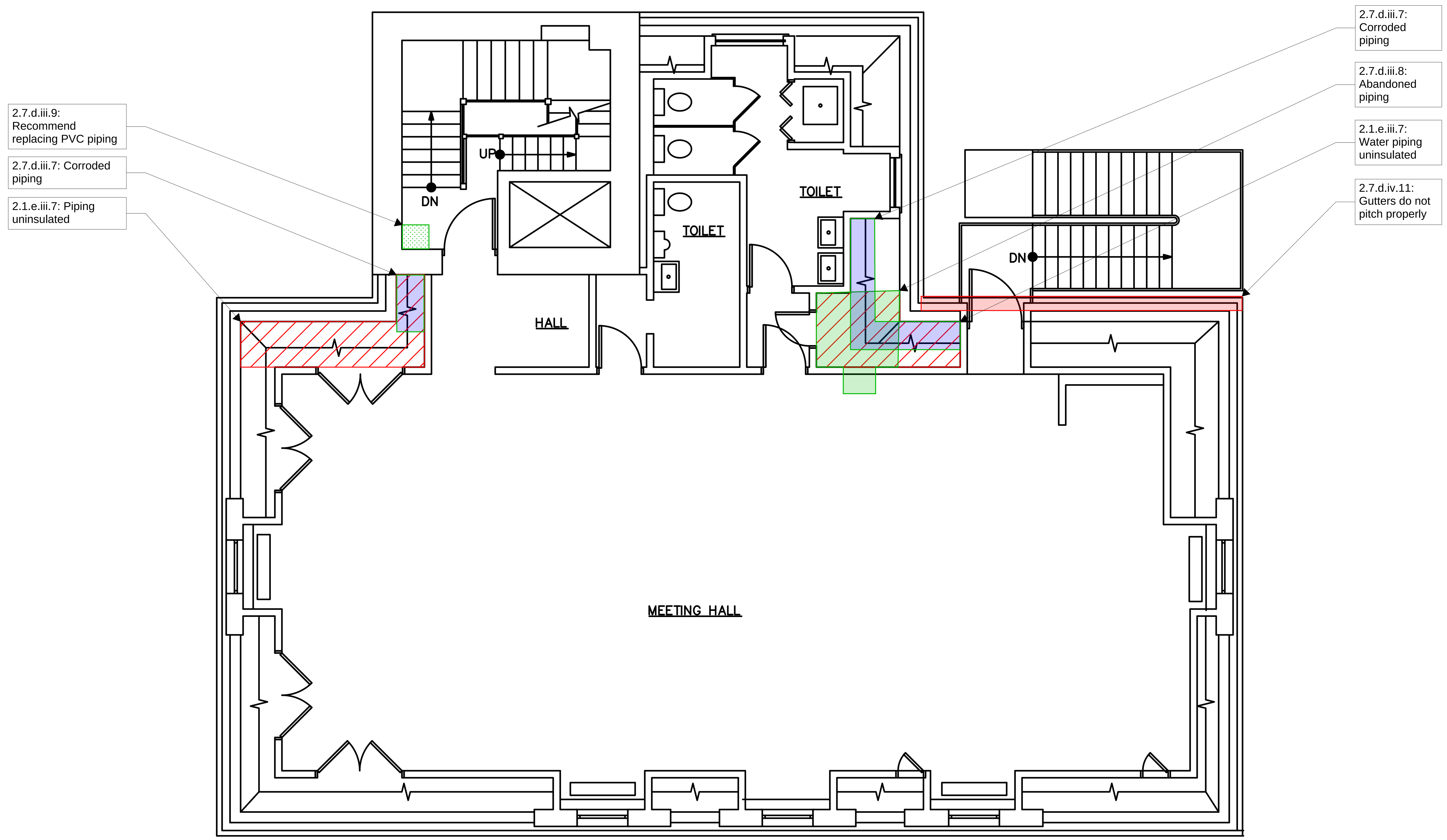

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GARDEN CITY
FIRE DEPARTMENT
351 Stewart Avenue, Garden City, NY 11530

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
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NORTH

Project
FIREHOUSE #2
Stewart Ave & Edgemere Rd
Garden City, NY 11530

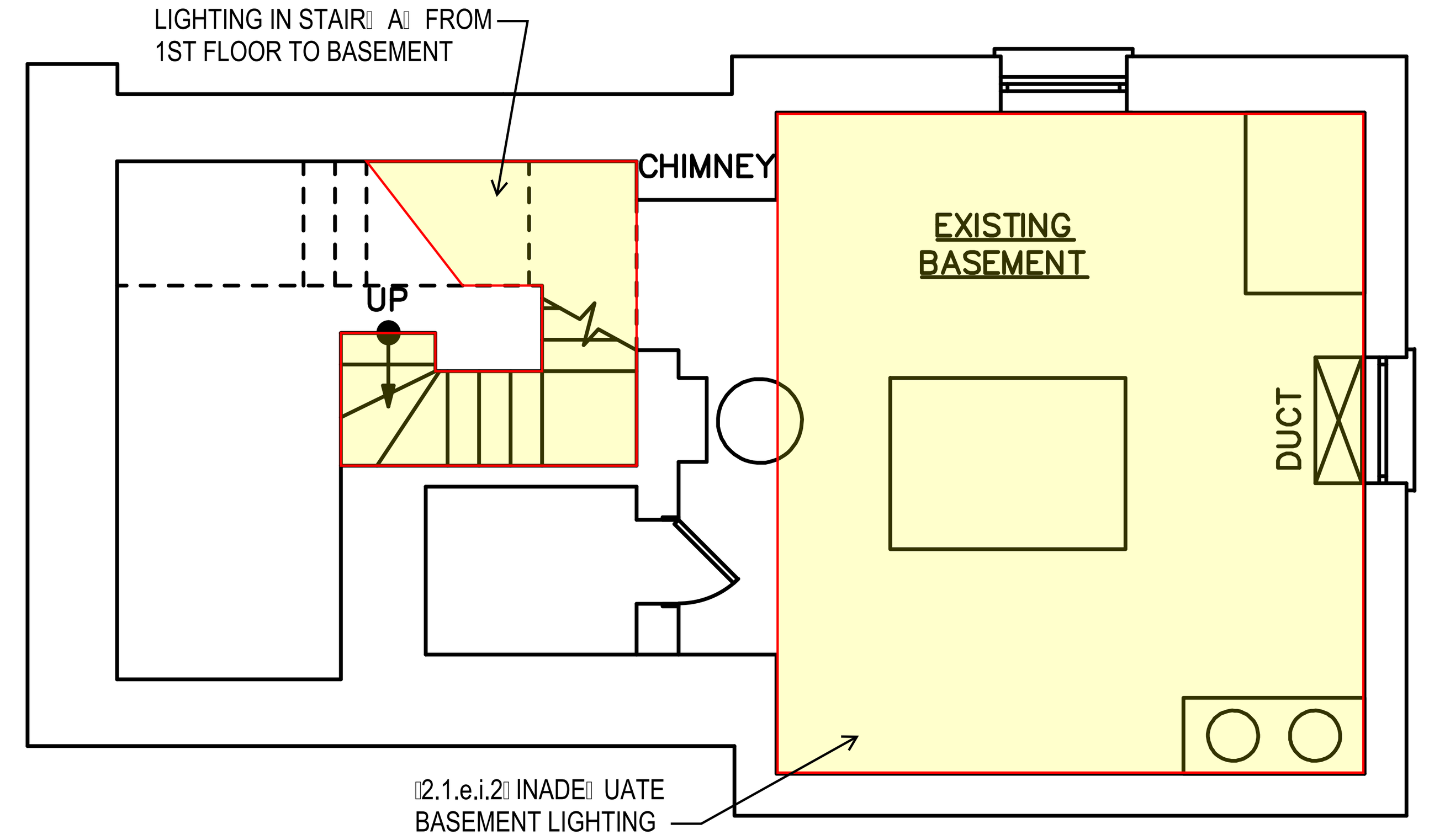
Drawing Title
PLUMBING
SECOND FLOOR PLAN

Drawing Number
P-102.00

3.0 APPENDIX

3.4 Electrical

E-100 Electrical Basement Floor Plan



E - NE OR STATE CODE VIOLATIONS	
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(yellow box)	INADE UATE LIGHTING

The abo e drawing eys are applicable to the electrical drawings only. Re er to each trade's drawing ey or trade-speci ic sy bols.

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FIREHOUSE #2

Stewart Ave & Edgemere Rd
Garden City, NY 11530

Drawing Title

ELECTRICAL BASEMENT FLOOR PLAN

Drawing Number

E-100

351 Stewart Ave
Garden City, NY 11530

Garden City
Fire Department

Firehouse #3

St James North & Emmet Place, Garden City, NY 11530

Existing Conditions
Documentation & Recommendations
DRAFT

February 2, 2018

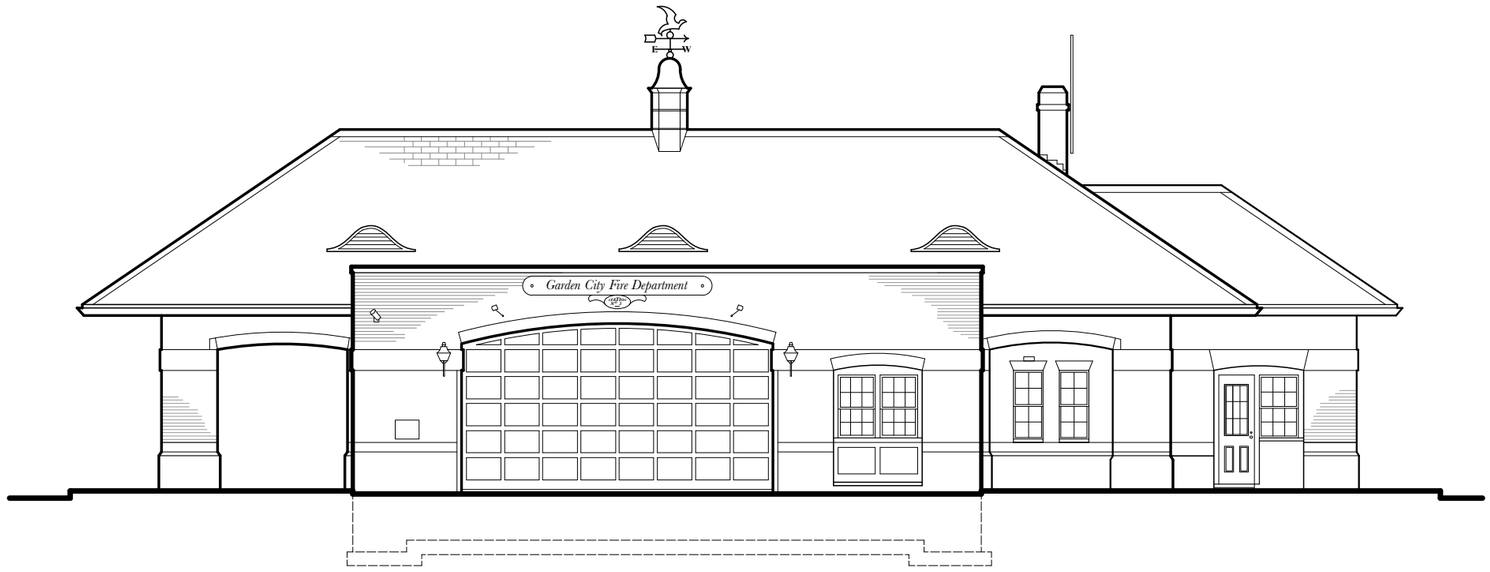

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TABLE OF CONTENTS

GARDEN CITY FIRE DEPARTMENT
FIREHOUSE #3
EXISTING CONDITIONS DOCUMENTATION & RECOMMENDATION

1.0 INTRODUCTION

1.1 Methodology

The existing conditions documentation is intended to be a general survey of the roofs and exterior facades' current physical conditions. It is also a general survey of the building's interior physical conditions and compliance with applicable Code and ADA regulations. The building's architectural, structural, mechanical, electrical, and plumbing systems were surveyed. VBA & CEA documented the building's existing conditions over a series of site visits. The existing conditions documentation was based on visual observation by binocular survey from grade level and roof level.

The following report is the result of the existing conditions documentation, translated into written descriptions, photographs and drawings. Based on the existing conditions found, VBA & CEA propose repair and design recommendations. In addition to code compliance and necessary repairs, the scope of this analysis will include options for expansion of the facility to accommodate a larger ladder fire truck than can currently be parked within the facility. At the end of each report will be a preliminary cost estimate.

For hazardous materials existing conditions, please see accompanying asbestos and hazardous materials report.

1.2 Location and Building Description

Firehouse #3 is a one story and basement brick building with aluminum windows and a concrete base. There are slate tile roofs, a flat roof, a hung gutter system and dormers. Firehouse #3 is a converted train station, built roughly at the turn of the previous century. It is located on St James North and Emmet Place. Firehouse #3 is a Landmark building.

Figure 1.2_1 Firehouse #3 Location Map - St James North & Emmet Place

1.3 Summary of Key Findings

In order to provide Garden City with a summary of Firehouse #3's existing conditions and repair recommendations, the scope of work items have been classified into the following categories:

1. Required by Code and Law

2. Severe Physical Condition & Deterioration

3. Poor Physical Condition & Deterioration

4. Fair Physical Condition & Deterioration

5. Good Physical Condition & Deterioration

The preliminary cost estimate for each scope of work item can be found at the end of Firehouse #3's report.

GCFD Firehouse #3		Physical Condition & Deterioration			
Scope of Work Item	Required By Code/Law	Severe	Poor	Fair	Good
2.1 National, State & Local Codes					
a. Fire Stopping & Fire Safing	X	X			
b. Egress & Emergency Lighting	X		X		
c. Mechanical	X		X		
d. Electrical	X		X		
e. Plumbing	X		X		
2.2 ADA Compliance					
a. Exterior Entrance	X				
b. Interior Route & Bathroom	X				
2.4 Roofs					
a. Flashing			X	X	
b. Slate Roof				X	X
c. Dormers				X	
d. Flat Roof & Drainage		X			
e. Roof Eaves				X	
2.5 Facades & Dormers					
a. Brick & Concrete Base				X	
b. Windows & Lintels			X	X	X
2.5 Recommended Upgrades					
a. Architectural			X	X	
b. Mechanical			X		
c. Electrical			X	X	
d. Plumbing				X	
e. Exterior Drainage				X	

2.0 ARCHITECTURAL & ENGINEERING

The following sections describe the existing conditions of Firehouse #2 as they relate to the 2.1 National, State, & Local Codes, 2.2 ADA Compliance, 2.3 Roofs, and 2.4 Facades. Also included are Recommended Upgrades that are standard common practice, and Program Design Options. At the end of each section VBA and CEA's recommended repairs are outlined.

2.1 National, State, & Local Codes

A. Fire Stopping & Fire Safing

Fire Stopping & Fire Safing Existing Conditions:
Fire separation at the floor assembly is required. The floor assembly is constructed of structural concrete joists and terracotta infill. *Please see EX-001 Basement Plan.*

- **Basement pipe penetrations** in multiple locations are not fire stopped / safed at underside of floor assembly. In violation of Code. Portions of the concrete joists and terracotta infill floor assembly are demolished. Portions of the concrete joist have been removed which severely reduce the capacity of the floor structure.

- **Basement ductwork penetrations** in multiple locations are not fire stopped / safed at underside of floor assembly. In violation of Code. A Large portion of the concrete joists and terracotta infill floor assembly are demolished. Portions of the concrete joist have been removed which severely reduce the capacity of the floor structure.

Figure 2.1_1 Basement - Pipe Penetrations Code Violation

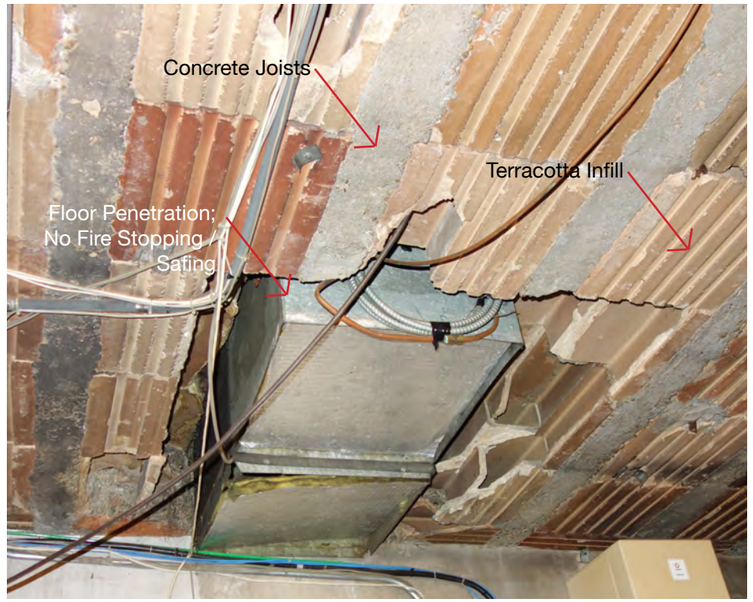


Figure 2.1_2 Basement - Ductwork Penetrations Code Violation

Fire stopping and fire safing are critical elements of fire rated construction and inhibit the spread of fire. They are required by Code.

Fire Stopping & Fire Safing Recommendations for Repair:

VBA recommends the following repairs:
1. All pipe and ductwork penetrations should be fire stopped and fire safed to maintain fire rated construction.
2. Repair floor system and structure. Remedial structural work will be required to repair and strengthen the floor structure where the concrete floor joists have been damaged or removed.

B. Egress & Emergency Lighting

Egress & Emergency Lighting Existing Conditions:
Please see EX-100 First Floor Plan and EX-101 Second Floor Plan.

- **Insufficient emergency lights** at the path of egress and exit doors throughout Firehouse. In violation of Code.
- **No illuminated exit signs** at Locker Room door and Hall doors. In violation of Code.
- **Single Step** at egress doors. In violation of Code.

Providing a safe means of egress is critical in meeting State Code. Sufficient emergency lighting and illuminated exit signs must be provided to meet Code requirements.

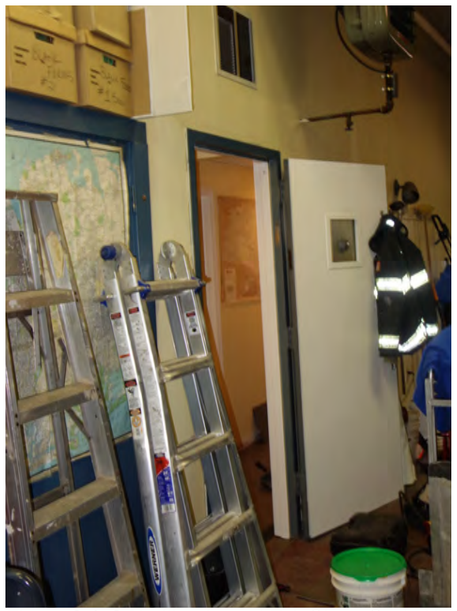


Figure 2.1_3 No Illuminated Exit Signs Code Violation

Egress & Emergency Lighting Recommendations for Repair:

VBA recommends the following repairs:
1. Provide new emergency lighting.
2. Provide new illuminated exit signs.
3. Remove step and provide landing and walkway. See ADA Compliance recommendations.

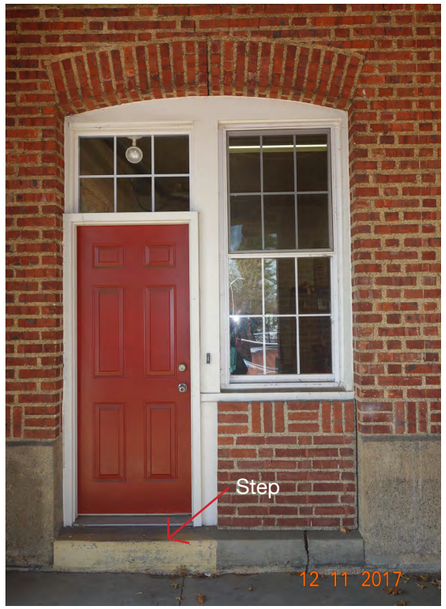


Figure 2.1_4 Egress Door Step Code Violation

Figure 2.1_5 No Illuminated Exit Signs Code Violation

C. Mechanical

i) Cellar

1) Observed deficiency: No dedicated boiler room ventilation. See Mechanical item 3.

Recommended fix: Utilize the operable window for cellar ventilation by creating a new source for combustion air intake. Alternatively, provide mechanical ventilation via a split variable refrigerant flow (VRF) make-up air unit.

2) Observed deficiency: Hot water supply and return piping uninsulated:

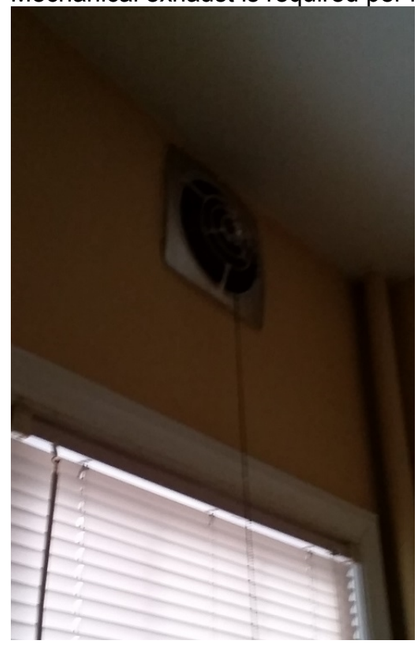
Recommended fix: All uninsulated piping and fittings should be cleaned, insulated, and provided with a service jacket as per New York State Energy Conservation Code. In addition to resolving the code-compliance problem, insulating this piping will lead to reduced energy consumption and operating costs.

3) Observed deficiency: Operable window presently used for combustion air intake. This presents a safety hazard. Code requires high/low combustion air louver or a single, larger opening, to be installed.

Recommended fix: A small combustion air intake louver could be installed on the exterior wall with a net free area of 1 square inch per 3,000 Btu/hour of equivalent input gas to the boiler.

ii) First Floor/Apparatus Floor

5) Observed deficiency: Bathroom exhaust fan not functional. Mechanical exhaust is required per NY State Mechanical Code:



Recommended fix: The bathroom exhaust fan should be replaced. A Cook Gemini exhaust fan with 4 inch diameter ductwork and a weather cap on the exterior would suffice provided there is a suspended ceiling in the space. Alternatively, an inline exhaust fan along could be installed and ducted to both the bathroom and the janitor's closet.

6) Observed deficiency: Janitor's closet requires mechanical exhaust. Mechanical exhaust is required per the New York State Mechanical Code.

   Recommended fix: A small inline exhaust duct could be installed and ducted to the bathroom exhaust system. Alternatively, a Cook Gemini exhaust fan could be installed with a 4 inch diameter exhaust fan. This method would require an additional penetration to the building skin and weather cap.

7) Observed deficiency: Spaces adjacent to apparatus floor not positively pressurized.

   Recommended fix: A variable refrigerant flow (VRF) split ventilation/make-up air unit could provide the code-required air for pressurization and ventilation. The unit could be mounted in the ceiling of the corridor and ducted to the dispatch and vestibule spaces. A Daikin FXMQ48MFVJU unit (or similar) with corresponding outdoor heat pump unit could be utilized with the outdoor unit mounted on grade. The two units would be interconnected by refrigerant piping and control wiring. Each unit would require electrical power wiring. A complete engineering design analysis is required to determine the exact recommended equipment.

D. Electrical

i) Cellar

1) Observed Deficiency: Main electrical panel partially blocked by telephone terminal box cover and air compressor, 3-feet minimum clearance in front of panel required by National Electrical Code (NEC).

   Recommended Fix: Relocate telephone terminal box & air compressor.

2) Observed Deficiency: Inadequate cellar lighting

   Recommended Fix: Existing lighting fixtures are obsolete. Replace fixtures with LED type and increase quantity by 25%+. See 'Recommended Upgrades'.

E. Plumbing

i) Cellar

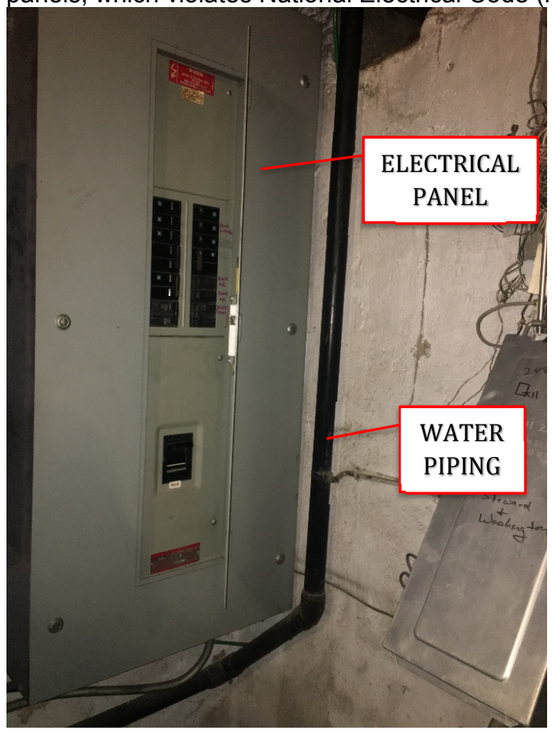
1) Observed Deficiency: All water piping is uninsulated.

   Recommended Fix: All water piping should be cleaned and thermally insulated in accordance with Table C403.2.10 of the New York State Energy Conservation Code.

2) Observed Deficiency: Piping and other utility penetrations not properly sealed or fire-stopped.

   Recommended Fix: Fireproofing should be applied to all penetrations through a fire-rated assembly. 3M Fire Barrier CP 25 Caulk (or a UL listed equivalent) may be utilized and applied per its UL listing.

3) Observed Deficiency: Cold water piping routed under electrical panels, which violates National Electrical Code (NEC).



Recommended Fix: Water piping to be rerouted and separated from electrical elements:

ii) First Floor/Apparatus Floor
N/A

F. Exterior Drainage

i) General

1) House reports flooding from dry-well during significant rain events. Structure observed to have wet-bottom after period of no precipitation (indicates poor drainage) & appears to be undersized. Centerline of dry-well is 8'-6" from building exterior, significantly less than minimum 20'-0" separation from edge of structure to building as required by Nassau County.

2.2 ADA Compliance

ADA refers to the Americans with Disabilities Act which is a Federal regulation. NYS Code also requires compliance with ANSI A117.1 accessible standards. The term “accessible” will refer to compliance with both ADA regulations and ANSI A117.1 Standard.

A. Exterior Entrance

Exterior Entrance Existing Conditions:
Please see EX-100 First Floor Plan.

- **Step** at exterior entrance hall door is not accessible.
- **Accessible door clearances** not provided at exterior entrance hall door.

Providing an ADA compliant and accessible main entrance is critical in meeting Federal regulations and State Code.

Figure 2.2_1 Exterior Entrance Door - Not Accessible & Code Violation

Exterior Entrance Recommendations for Repair:
Please see A-100 First Floor Plan.

VBA recommends the following repairs:
1. Provide new exterior accessible walkway and landing to the hall door at First Floor elevation.
2. Modify hall door to provide accessible clearances at the exterior entrance hall door.

B. Interior Route & Bathrooms

Please see EX-100 First Floor Plan and EX-101 Second Floor Plan.

- **Public toilet room** is not accessible. Accessible fixture and door clearances not provided.

Providing ADA compliant and accessible public bathrooms are critical in meeting Federal regulations and State Code.

Interior Route & Bathrooms Recommendations for Repair:
Please see A-100 First Floor Plan.

VBA recommends the following repairs:
1. Modify toilet room and doors to be accessible.

2.6 Roofs

There are two roof levels at Firehouse #3. The hip roof and flat roof. There are also copper dormers and a weather vane tower. Not all areas were able to be surveyed due to snow cover.

A. Flashing

Flashing Existing Conditions:
Please see EX-101 Roof Plan.

1. **Flat Roof:**
   - **Copper cap flashing** appears to be in poor condition; loose and warped. It has been repaired poorly in the past.
   - **Stainless Steel cap and coping flashing** are in poor condition. The cap and coping flashing have a poor connection and construction with slate roof.
   - **Base flashing** cracked and in poor condition.

2. **Hip Roof:**
   - Flashing not visible. In areas of ridge and hip slate tiles missing, flashing also **deteriorated**. Flashing failed where wood eave deteriorated.

3. **Dormers & Weather Vane:**
   - **Copper flashing** appears to be in fair condition. Not all dormers were able to be accessed and surveyed.

Flashing Recommendations for Repair:

VBA recommends the following repairs:
1. **Flat Roof:** New cap, base and coping flashing should be provided. This work should be performed with the overall roof repairs.
2. **Hip Roof:** New flashing should be provided where missing or failing. This work should be performed with the overall slate roof repairs.

All new flashing materials should be compatible with the recommended roofing repair materials.

Figure 2.6_1 SS Cap & Copper Cap Flashing

Figure 2.6_3 Hip Roof & Weather Vane Tower

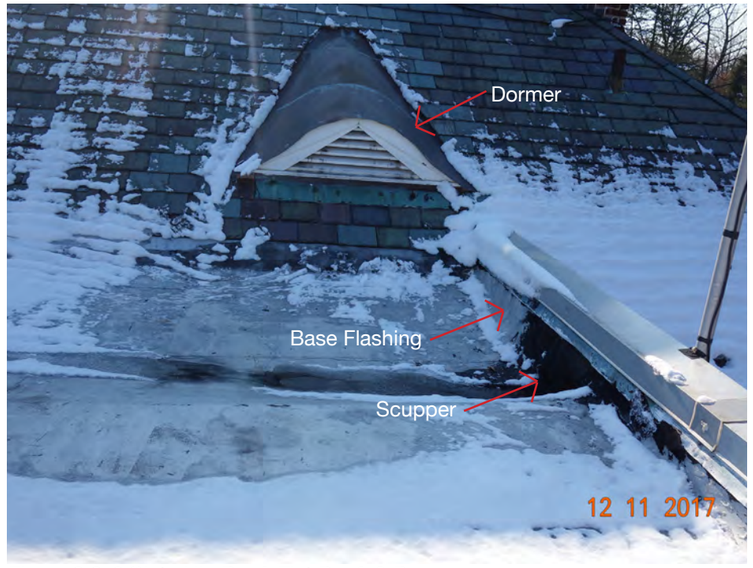


Figure 2.6_2 Slate Hip Roof, Flat Roof, & Dormers

Figure 2.6_4 Stainless Steel Cap & Slate Roof Flashing Connection

B. Slate Roof

The hip roof has a slate tile roof system. Not all roof areas were able to be surveyed due to snow cover.

Slate Roof Existing Conditions:
Please see EX-101 Roof Plan.

- Slate tiles **missing or loose** in areas at ridges and hips.
- Slate tiles **exfoliated, broken and stained** in areas.
- **Hung gutter** and downspouts are in fair condition.

Slate Roof Recommendations for Repair:

VBA recommends the following repairs:
1. Provide new ridge and hip slate tiles and secure properly.
2. Demolish deteriorated slate tiles and replace with new.

This work should be performed with the flashing, dormer and flat roof repairs.

Figure 2.6_5 South Facade - Hip Slate Roof

C. Dormers

Not all dormers were able to be accessed and surveyed.

Dormers Existing Conditions:
Please see EX-101 Roof Plan.

- **Copper enclosure** appears to be in good condition.
- **Wood vent** in poor condition. Cracked and deteriorated at sill and lower louver.

Flat Roof Recommendations for Repair:

VBA recommends the following repairs:
1. Repair or replace wood vent.

This work should be performed with the flashing, slate, and flat roof repairs.

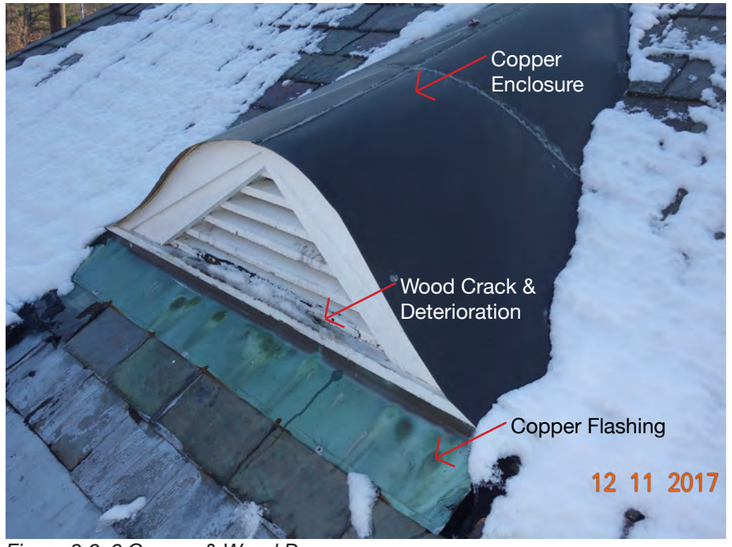


Figure 2.6_6 Copper & Wood Dormer

D. Flat Roof & Drainage

Not all roof areas were able to be surveyed due to snow cover.

Flat Roof & Drainage Existing Conditions:
Please see EX-101 Roof Plan.

1. **Flat Roof:**
   - **Roofing materials** appear to be in fair condition. Roof appears to have been re-roofed in the past and may be 10-15 years old. Roof is near the end of its useful life.

2. **Drainage:**
   - **Drainage valley** not pitched properly to scuppers. Snow accumulation at valley.
   - **Scuppers** are not properly flashed and previous repairs are of poor quality and workmanship. Water ponding and debris at scupper.
   - **Conductor heads** and downspouts are in fair condition.

Figure 2.6_7 Flat Roof

Figure 2.6_8 Scupper

Figure 2.6_9 Scupper, Conductor Head & Downspout

Flat Roof & Drainage Recommendations for Repair:

VBA recommends the following repairs:

1. A new liquid-applied fleece-reinforced roofing system. The new roofing system should be pitched for positive drainage to the new scuppers.
2. New masonry drainage openings, scuppers, conductor heads, and downspouts should be provided. Scuppers to be properly flashed and waterproofed.
3. New roof valley and crickets to be built for proper drainage throughout flat roof and at scuppers.

This work should be performed with the flashing, dormers, and slate repairs. All new roof materials should meet the current NYS Energy Conservation Code. Continuous insulation to meet the prescribed R-value (R-30) will be required in all areas insulation is not provided below the roof deck.

E. Roof Eaves

Roof Eaves Existing Conditions:
Please see EX-100 First Floor Plan.

- **Cracks** at wood eave brackets. Open gap at brick pocket.
- **Holes, rot, and cracks** at under side of wood eaves. Most likely due to flashing failure at the slate roof.

Roof Eaves Recommendations for Repair:

VBA recommends the following repairs:

1. Repair all cracks at brackets.
2. Repair all deterioration and provide new wood at eaves where required. Slate roof tiles and flashings should also be repaired.
3. Paint existing wood brackets, soffit, trim boards, etc at eaves.

Figure 2.6_10 Wood Eave & Bracket Deterioration

2.5 Facades

Firehouse #3 is a brick 1-story building with aluminum windows and concrete base. In the following sections the facades major and minor issues are outlined.

A. Brick & Concrete Base

1. North (Front) Facade Existing Conditions:
Please see EX-200 North Elevation Existing Conditions.

- **Stepped and vertical cracks** from corbeled brick band up to parapet stainless steel cap.
- **Horizontal crack** at Apparatus Garage Door brick arch.
- **Apparatus Garage Door** steel jamb and lintel paint flaking.
- **Course aggregate mortar** joints are worn above Apparatus Room door opening.
- **Thin red mortar** joints are worn and open on corners.
- **Vertical cracks** at concrete base. Biological growth and masonry staining in same area.
- **Parge coating** on horizontal surface of corbeled brick band missing.
- **Brick missing mortar** at underside of arch at Exterior Porch opening.

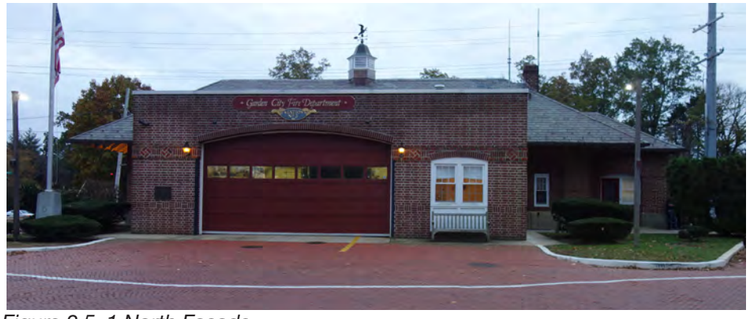


Figure 2.5_1 North Facade

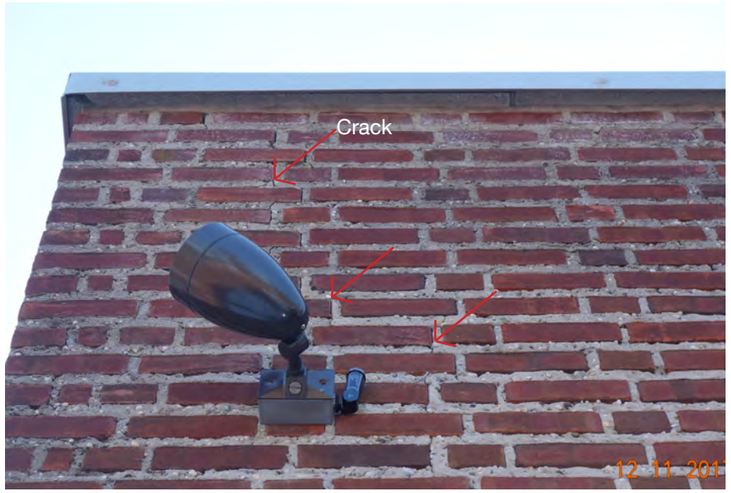


Figure 2.5_2 North Facade - Stepped & Vertical Crack

Figure 2.5_3 Concrete Base Crack, Biological Growth & Staining

2. West Facade Existing Conditions:

- **Thin red mortar** joints are worn, missing and cracked on Facade corners.
- **Mortar crack** at vertical joint between historic building and addition.
- **Ivy** growing on south portion of facade.

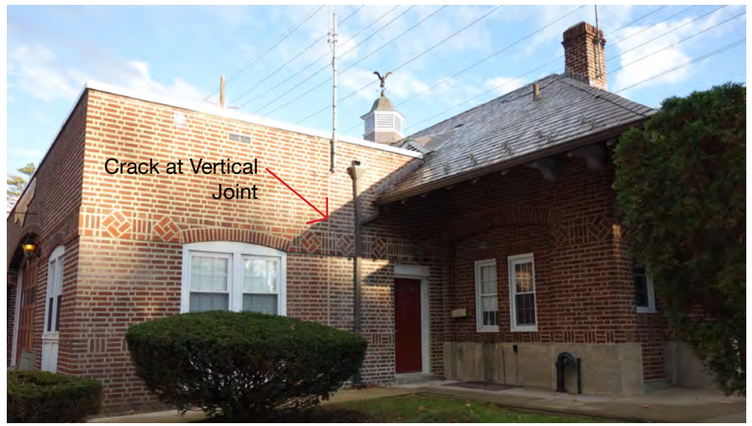


Figure 2.5_4 West Facade

Figure 2.5_5 West Facade

3. **East Facade Existing Conditions:**

- **Stepped and vertical brick cracks** from door opening's arched brick head up to Exterior Porch ceiling.
- **Mortar missing or cracked** at window opening's arched brick head.
- **Thin red mortar** joints are worn, missing and cracked on Exterior Porch piers and corners.
- **Mortar missing** at underside of brick arch at Exterior Porch opening.
- **Mortar crack** at vertical joint between historic building and addition. Also mortar crack between Porch walls.
- **Vertical and horizontal crack** through concrete step /sill.
- **Parge coating** on horizontal surface of corbeled brick band missing.

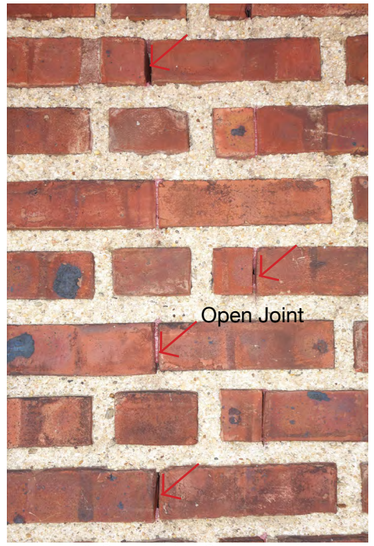


Figure 2.5_7 East Facade - Crack at Arch Head & Step (left), Open Jts (right)

Figure 2.5_8 South Facade - Concrete Base & Brick Arch Cracks

Figure 2.5_6 East Facade

4. **South Facade Existing Conditions:**

- **Brick crack and missing mortar** at brick head and underside of arch at Exterior Porch opening.
- **Course aggregate mortar** joints are worn at wood facia at level of wood eave.
- **Vertical and horizontal cracks** at concrete base.
- **Exfoliation and cracks** at top side of parged or bluestone sill.
- **Parge coating** on horizontal surface of corbeled brick band missing.
- **Ivy** growing on west portion of facade.

Figure 2.5_9 South Facade - Exterior Portico Arch Crack

These brick and concrete base existing conditions vary slightly from Facade to Facade. Generally, all of the Facades are in **fair condition**.

Brick & Concrete Base Recommendations for Repair:

VBA recommends the following repairs:

1. Repair all brick and concrete base cracks.
2. Repair Exterior Porch brick arch cracks and re-point worn mortar joints.
3. Provide new bluestone sills.
4. Re-point areas with worn and open mortar joints.
5. Provide new parge coating on top of corbeled brick band.
6. Remove ivy and repair masonry where required.
7. Scrape and paint existing Apparatus Door steel jamb and lintel.

B. Windows & Lintels

Windows & Lintels Existing Conditions:
Please see EX-100 First Floor Plan and EX-200 North Elevation.

- **Window lintel** is rusted due to water infiltration. Moderate deterioration. (East Facade)
- **Sealant missing and failed** at aluminum sill pan and frame. Gaps and holes in aluminum sill.
- **Aluminum windows** near end of life. Most likely do not meet the current NYS Energy Conservation Code.

Windows & Lintels Recommendations for Repair:

VBA recommends the following repairs:

1. Replace the window lintel with a new hot dipped galvanized lintel. Provide proper flashing and weep holes.
2. Windows and doors should be replaced to meet the current NYS Energy Conservation Code.

Figure 2.5_10 East Window


Figure 2.5_11 North Facade Windows


Figure 2.5_12 Rusted Window Lintel

Figure 2.5_13 Aluminum Sill Holes

2.7 Recommended Upgrades

A. Architectural

Architectural Existing Conditions:

- **Apparatus Room concrete slab on grade** has cracks traveling East-West and North-South across the slab.
- **Apparatus Room plaster ceiling** and insulation removed due to water infiltration. Underside of wood deck water stained. Most likely due to flashing failure at roof level.
- **Apparatus Room plaster wall** cracked and dented.

Architectural Recommendations for Upgrades:

VBA recommends the following upgrades:

1. Repair cracks in the concrete slab on grade.
2. Patch plaster ceilings and wall finishes. Re-insulate as needed.

Figure 2.7_1 Concrete Slab Cracks

Figure 2.7_2 Plaster Ceiling Deterioration & Wood Deck Staining

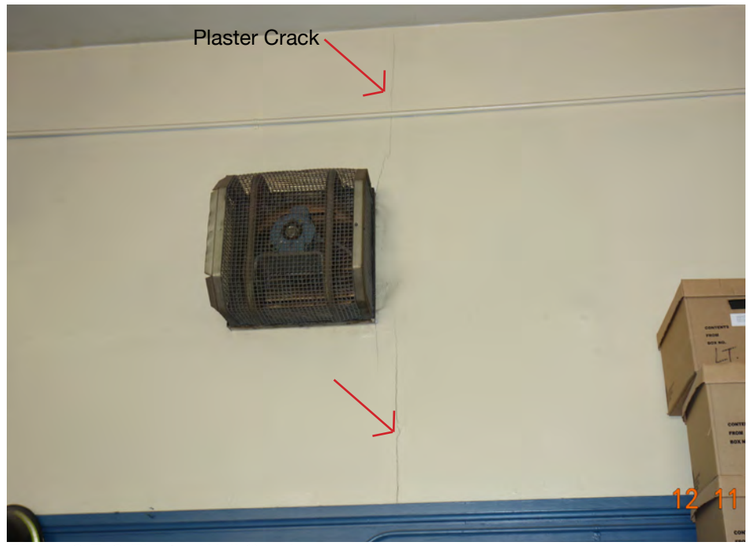


Figure 2.7_3 Plaster Wall Crack

B. Mechanical

i) Cellar

1) The boiler and domestic hot water heater chimney breechings are damaged and in need of repair. Recommend replacing exhaust flues in the cellar and re-sealing chimney breachings.

ii) First Floor

2) House reports of inadequate heat, electric heating prevalent. Recommend larger capacity boiler. Electric heating carries a higher operating cost in New York. Additional or larger unit heaters may be installed to provide heat in the apparatus bay. Hot water baseboard could replace electric baseboard throughout.

iii) Apparatus Floor

3) Exhaust fan too small for truck garage, recommend installation of additional fan(s).

C. Electrical

i) Cellar

1) Exposed wiring and armored cable throughout cellar, should be concealed

ii) First Floor/Apparatus Floor

2) Recommend replace obsolete electrical panel in Water Room

3) Numerous Flourescent lights inoperable.

iii) General

4) Recommend evaluation of lighting system for upgrade to LED

D. Plumbing

i) Cellar

1) Main sanitary service cracked & corroded (noted during observations, design team informed corrections made by Garden City in the interim)

2) Remove and abandon existing pipe protrusion through basement wall:

ii) First Floor/Apparatus Floor
N/A

E. Exterior Drainage

i) General

1) Downspout at building southwest corner splashes onto grade and drains across sidewalk, possible icing hazard. Recommend piping to underground detention/infiltration facility

2) No discernable connection between downspouts on south and west sides of building to drywell, recommend televise existing lines to determine underground routing & re-route to functional drainage structure

2.8 Program Design Options

GCFD is procuring a new ladder truck to be potentially housed at Firehouse #3. VBA is proposing two design options for an new addition to house the ladder truck.

A. Option A

Please see A-101.A First Floor Plan Option A.

- New addition on East side of existing building with Ladder Apparatus Room. Demolish existing Exterior Porch.
- New driveway on St James St.
- More difficult to transition between new addition and existing building architecturally.

Figure 2.8_1 Option A & B - View from St James Street (Google Street View)

B. Option B

Please see A-101.B First Floor Plan Option B.

- New addition on East side of existing building with Ladder Apparatus Room. Exterior Porch to remain and be new addition Lobby.
- New driveway on St James St.

Figure 2.8_2 Option A & B - View from St James Street

C. Exterior

i) Per reported recurring flooding from existing dry-well, stormwater management upgrades are required for building addition as well as existing building runoff. Existing building footprint is approximately 4,000 square-feet, building addition Option #2 will increase footprint by 2,000 square-feet. Stormwater detention volume for 8” rain event across entire upgraded building footprint is 4,000 cubic-feet. Pending 239F review by Nassau County DPW, reduction in required detention may be possible as building addition replaces existing impervious at-grade area. Roadways receiving direct drainage from building are all location; Clinton Road to the east is Nassau Country

D. Mechanical

i) The new apparatus bay will require heating and ventilation. In a typical apparatus bay ventilation is achieved via wall-mounted exhaust fan(s). Heating may be provided via hot water unit heaters and cast-iron radiators. The existing hot water boiler capacity would be evaluated to determine if it is sufficient for the expanded building. Based on the field observations and interviews with House staff the boiler is undersized. It is very likely that a new, larger hot water boiler would be required. The hot water piping system would be modified to extend into the new space. Inadequate heating complaints in the existing apparatus bay may be addressed by adding additional or larger unit heaters. Electric heating baseboard may be replaced with hot water.

ii) The existing cooling system may remain, however, a split VRF make-up air unit may be required to provide the proper air pressurization between the apparatus bay and connected spaces. All HVAC systems may be replaced if requested. This would provide a more robust HVAC system and increase occupant comfort. Through-wall AC units would be removed and returned to The City.

2.9 Cost Estimate

GCFD Firehouse #3 Preliminary Cost Estimate*

Scope of Work Item	Amount

2.1 National, State & Local Codes		
a. Fire Stopping & Fire Safing	$	9,300
b. Egress	$	8,900
c. Mechanical	$	25,300
d. Electrical	$	24,500
e. Plumbing	$	88,600
National, State & Local Codes TOTAL	**$**	**156,600**

2.2 ADA Compliance		
a. Exterior Entrance	$	78,200
b. Interior Route	$	70,800
Bathroom	$	56,200
ADA Compliance TOTAL	**$**	**205,200**

2.3 Roof		
a. Flashing	$	27,400
b. Slate Roof	$	21,000
c. Dormers	$	11,500
d. Flat Roof & Drainage	$	115,000
e. Roof Eaves	$	11,100
Roof TOTAL	**$**	**186,000**

2.4 Facades		
a. Brick & Concrete Base	$	173,300
b. Windows & Lintels	$	113,000
Facades TOTAL	**$**	**286,300**

Firehouse #3 TOTAL	**$**	**834,100**

***10% General Conditions, 10% Overhead & Profit, 4% Escalation, & 15% Design Contingency Built In**

2.5 Recommended Upgrades		
a. Architectural	$	137,000
b. Mechanical	$	120,200
c. Electrical - LED Lighting Upgrade	$	120,100
d. Plumbing	$	5,000
e. Exterior Drainage	$	93,600
Recommended Upgrades TOTAL	**$**	**475,900**

2.6 Program Design Options		
a. Option A	$	1,585,200
b. Option B	$	2,218,200

Abatement - Continuous Project		
Abatement	$	150,900
Air Monitoring	$	16,600
Continuous Abatement TOTAL	**$**	**167,500**

Abatement - Phased Project		
Abatement	$	188,700
Air Monitoring	$	20,800
Phased Abatement TOTAL	**$**	**209,500**

Abatement - Exterior Waterproofing		
Abatement	$	182,300
Air Monitoring	$	18,200
Exerior Waterproofing Abatement TOTAL	**$**	**200,500**

3.0 APPENDIX

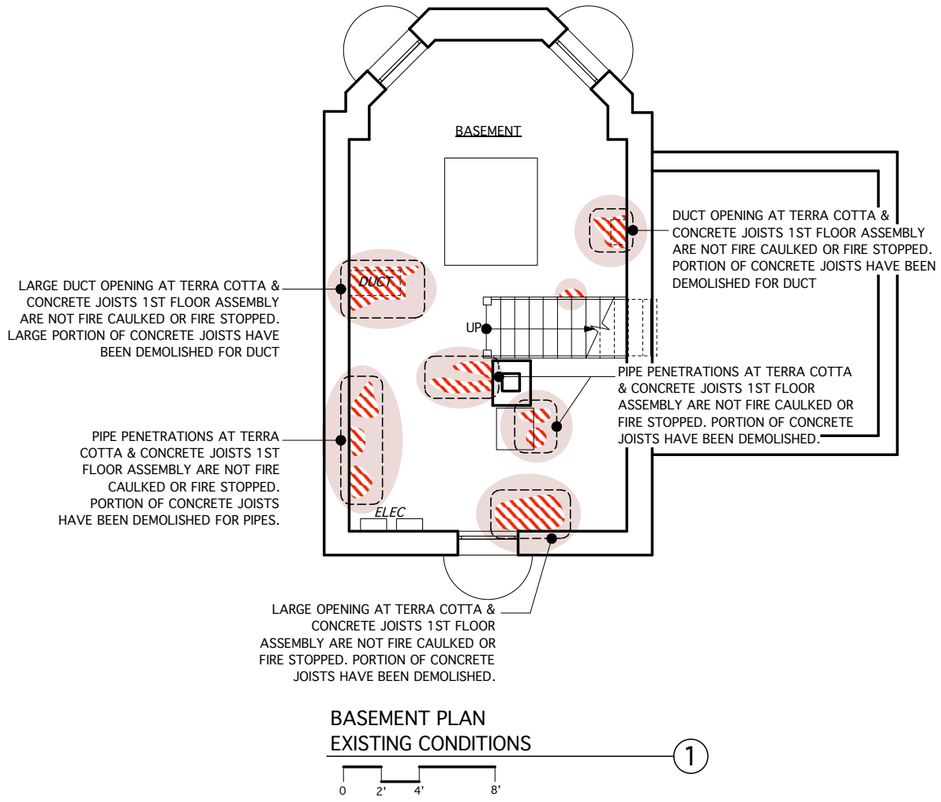
3.1 Architectural

EX-001 Basement Plan Existing Conditions
EX-100 First Floor Plan Existing Conditions
EX-101 Roof Plan Existing Conditions

EX-200 North Elevation Existing Conditions

A-100.ADA First Floor Plan - ADA Bathroom

A-100.A First Floor Plan - Option A
A-100.B First Floor Plan - Option B



BASEMENT PLAN
EXISTING CONDITIONS — 1

0 2' 4' 8'

KEY:

- NEW WALLS/ PARTITIONS
- EXISTING WALLS/CEILINGS
- AREA NOT IN SCOPE OF WORK

NYS CODE EXISTING CONDITIONS KEY:

- OPEN/ NON FIRE STOPPED PENETRATIONS IN FIRE RATED ASSEMBLY
- AREA OF EGRESS / ACCESSIBILITY ISSUE
- AREA OF FIRE RATING ISSUE
- EXISTING EXIT SIGN & EMERGENCY LIGHT
- EXISTING EMERGENCY LIGHT

GARDEN CITY
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NYS# 014883

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FIREHOUSE #3

St. James North & Emmet Place
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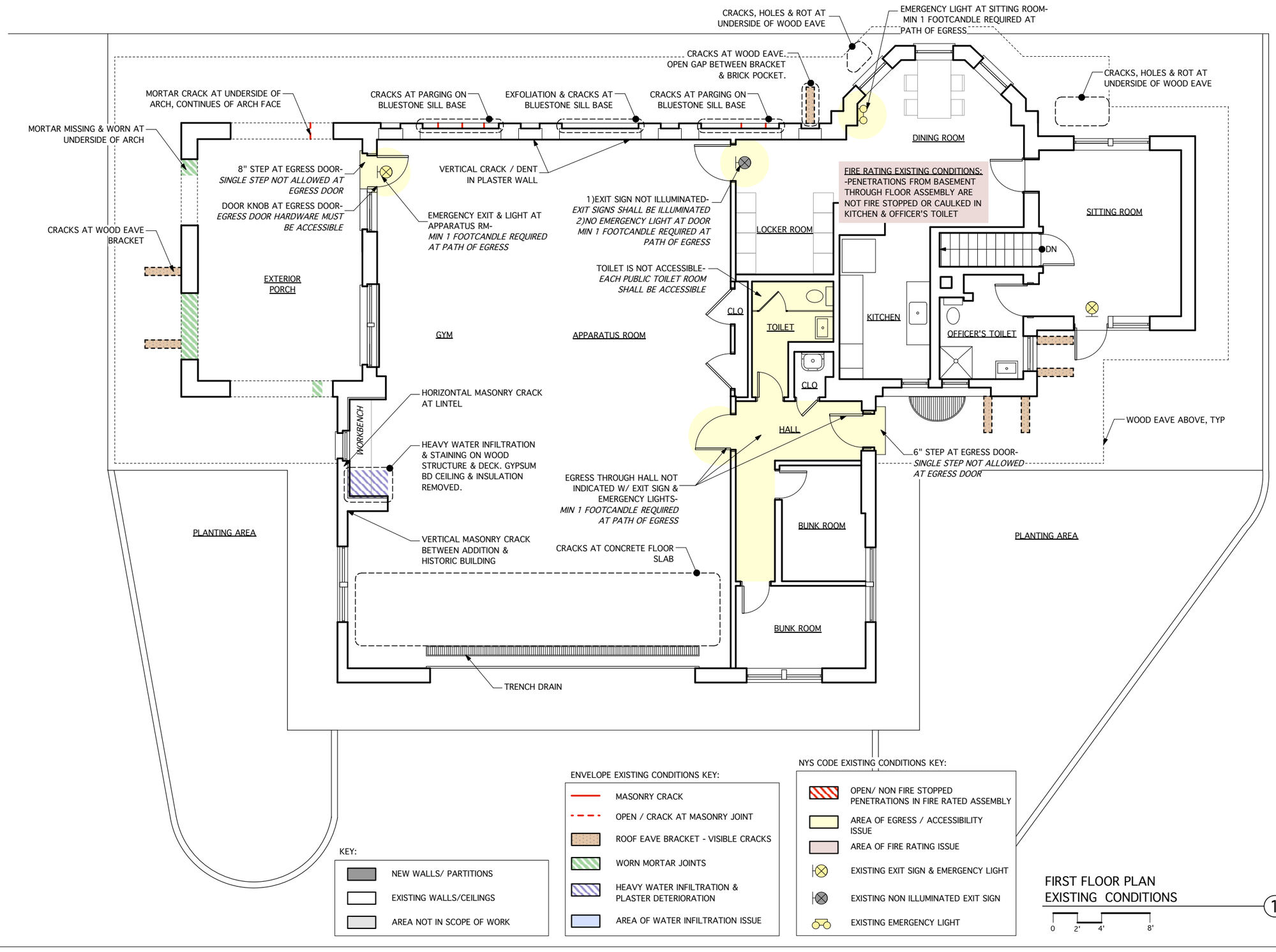
Drawing Title

EXISTING BASEMENT PLAN

Drawing Number

EX-001.00



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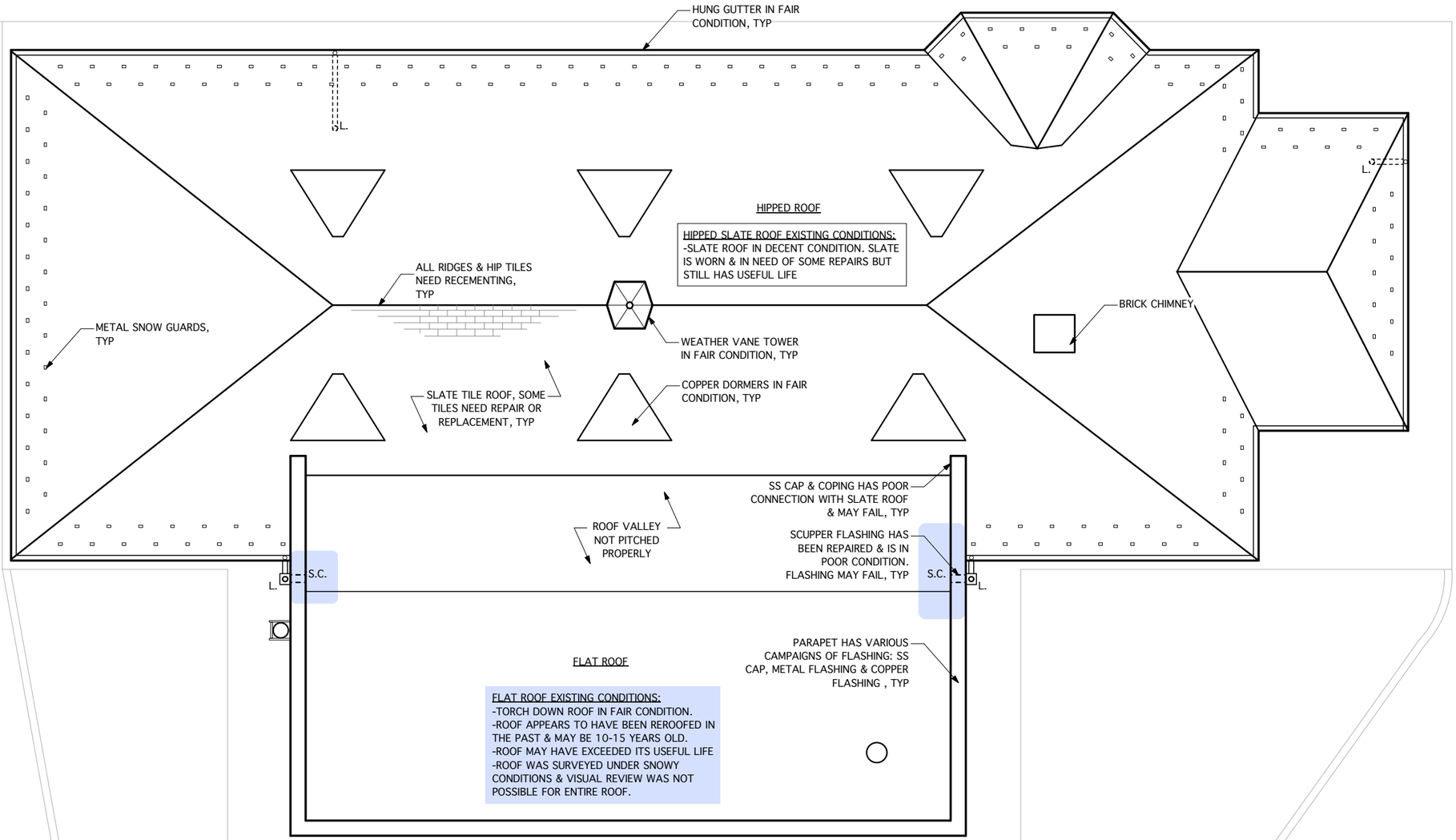
Drawing Title

FIRST FLOOR PLAN EXISTING CONDITIONS

Drawing Number

EX-100.00



KEY:

	NEW WALLS/ PARTITIONS
	EXISTING WALLS/CEILINGS
	AREA NOT IN SCOPE OF WORK
S.C.	ROOF SCUPPER
L.	GUTTER LEADER

ENVELOPE EXISTING CONDITIONS KEY:

- MASONRY CRACK
- OPEN / CRACK AT MASONRY JOINT
- ROOF EAVE BRACKET - VISIBLE CRACKS
- WORN MORTAR JOINTS
- HEAVY WATER INFILTRATION & PLASTER DETERIORATION
- AREA OF WATER INFILTRATION ISSUE

ROOF PLAN
EXISTING CONDITIONS 1

0 2' 4' 8'

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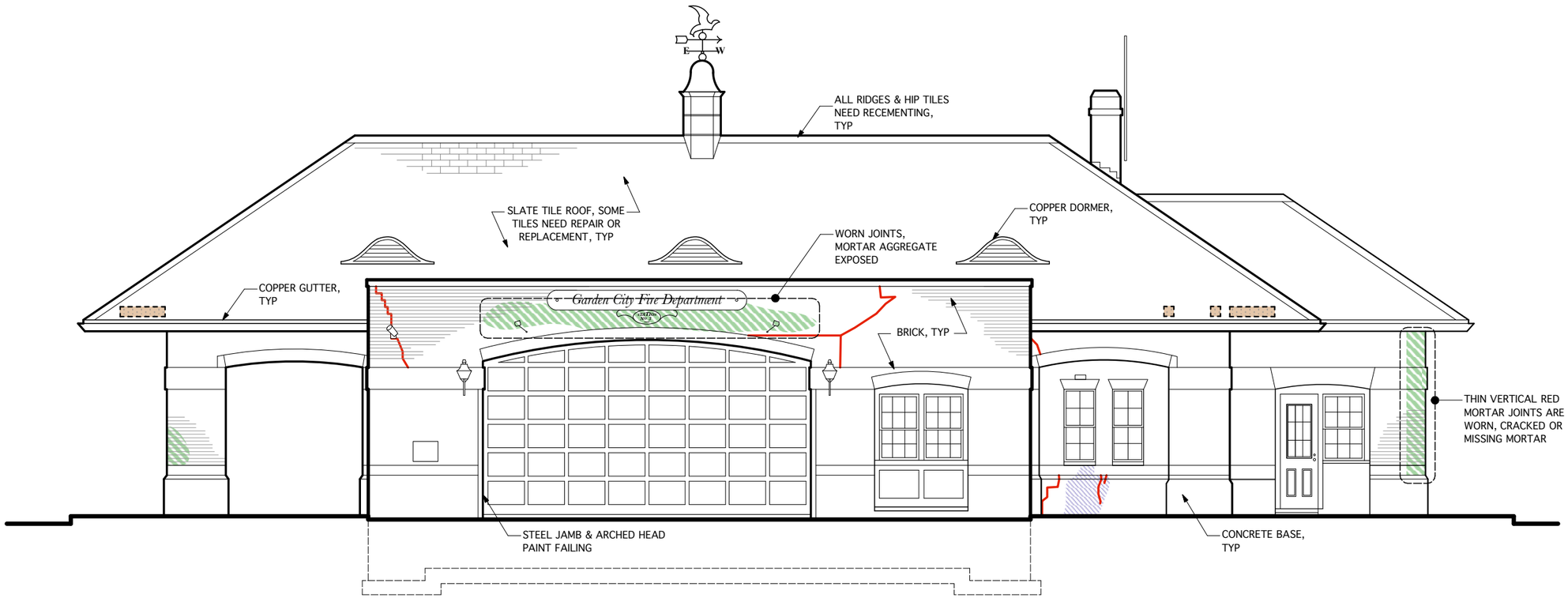
Drawing Title

ROOF PLAN
EXISTING CONDITIONS

Drawing Number

EX-101.00



ENVELOPE EXISTING CONDITIONS KEY:

- MASONRY CRACK
- OPEN / CRACK AT MASONRY JOINT
- SPALL / MISSING MASONRY
- LINTEL RUST VISIBLE
- EFFLORESENCE
- WORN MORTAR JOINTS
- MASONRY / WATER STAINING
- ROOF EAVE BRACKET - VISIBLE CRACKS

NORTH (FRONT) ELEVATION
EXISTING CONDITIONS 1

0 2' 4' 8'

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NORTH ELEVATION EXISTING CONDITIONS

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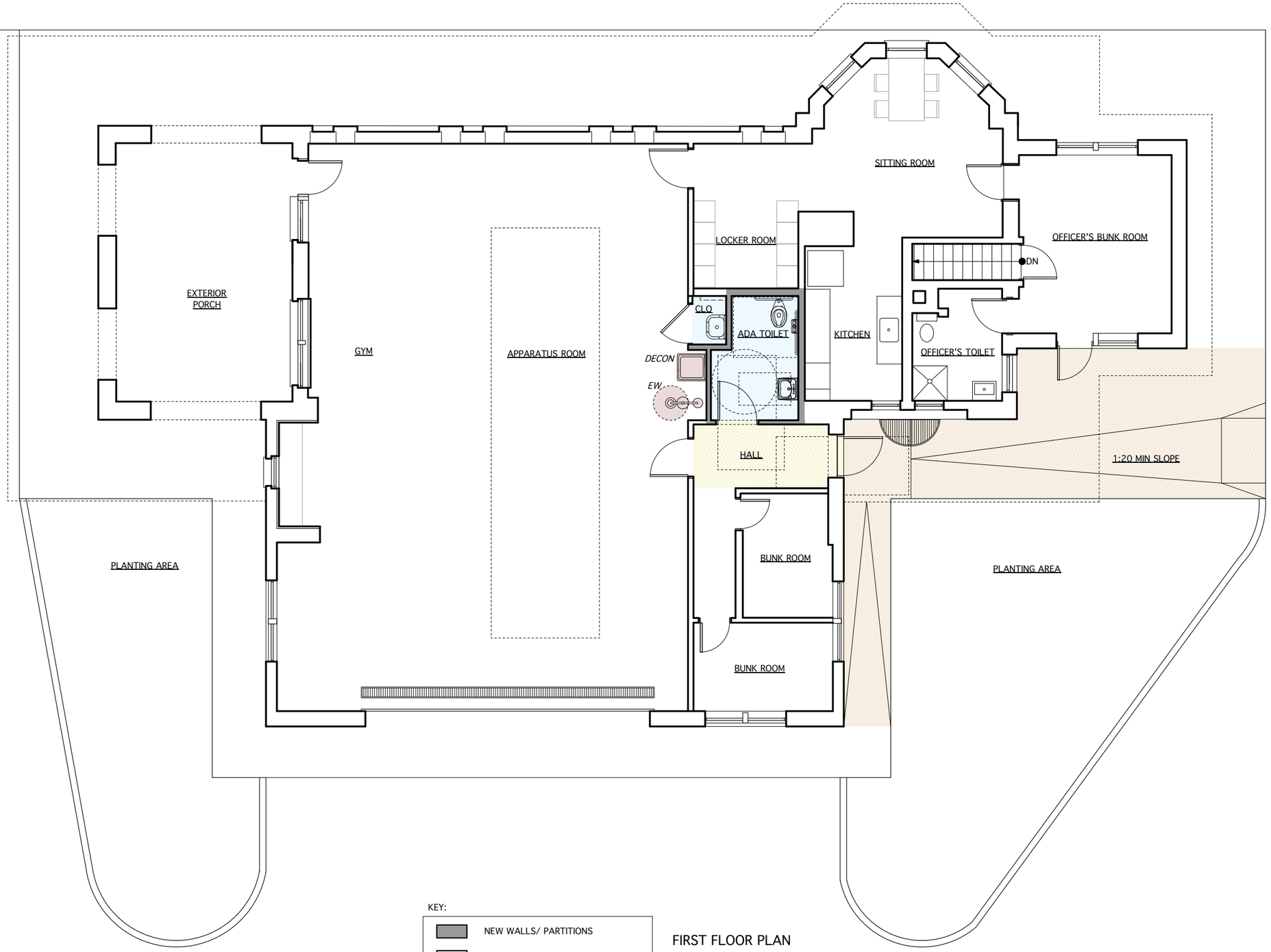

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FIREHOUSE #3

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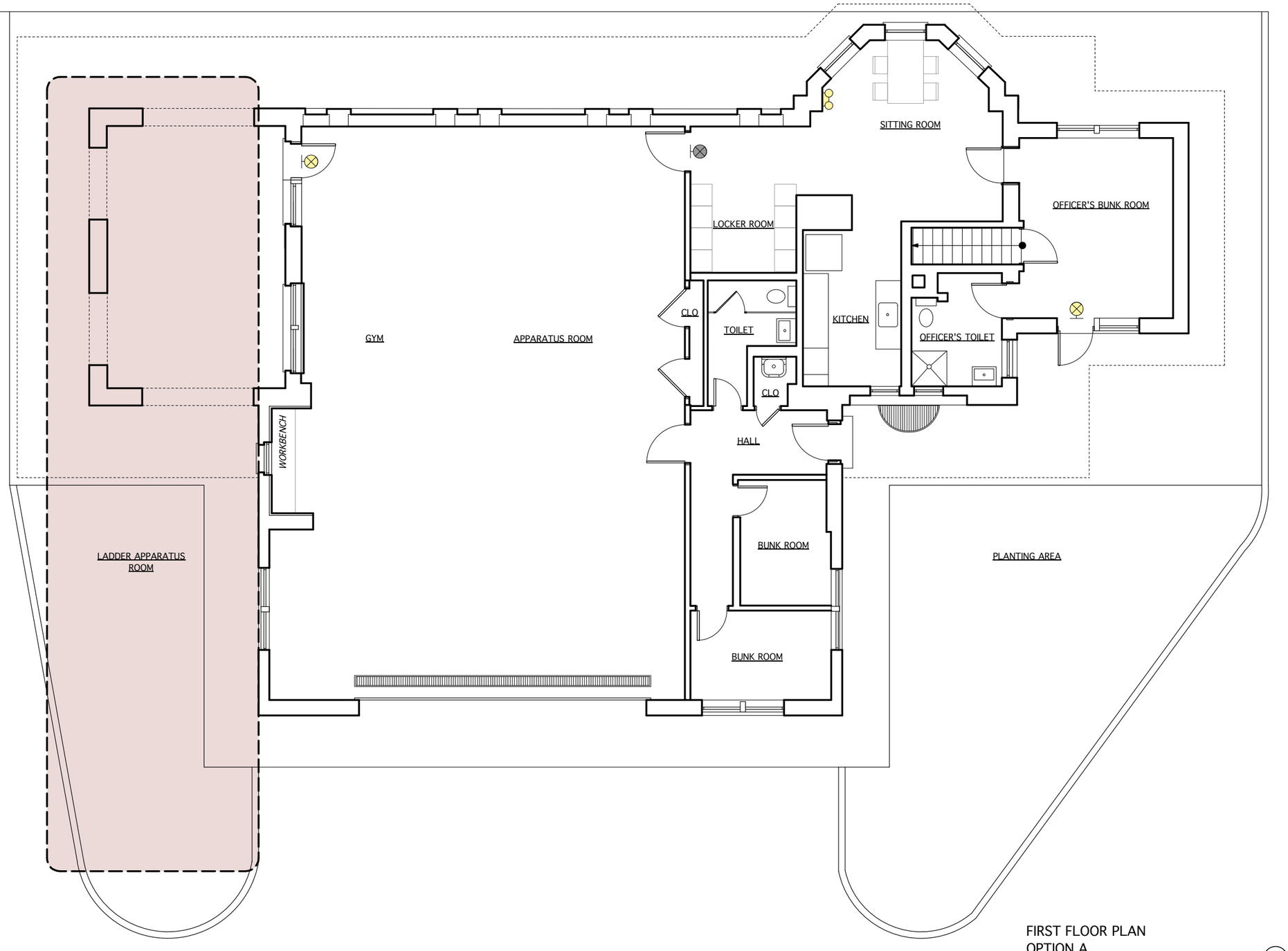
Drawing Title

FIRST FLOOR PLAN ADA BATHROOM

Drawing Number

A-100.ADA



FIRST FLOOR PLAN
OPTION A

1

0 2' 4' 8'

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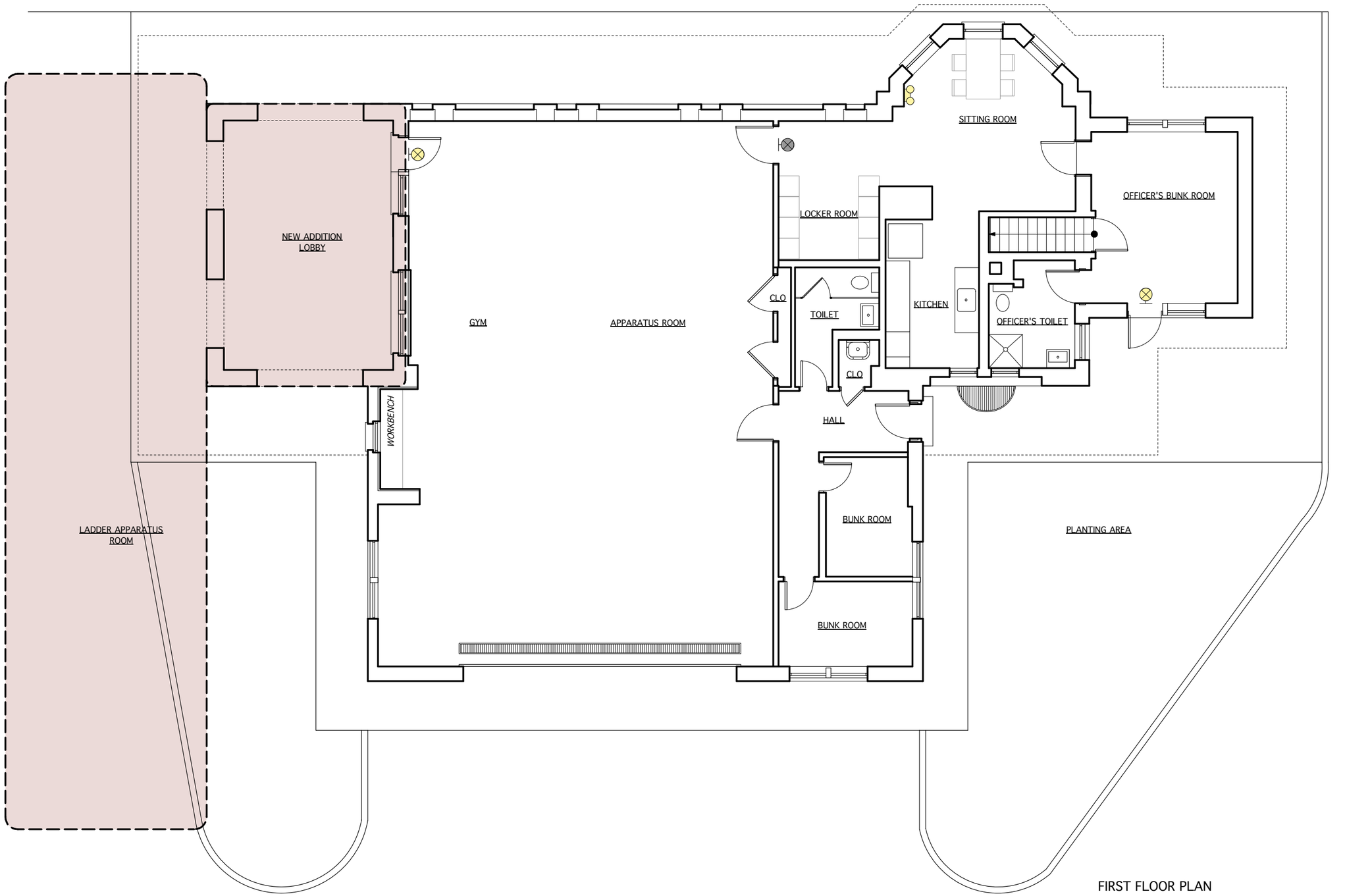
Drawing Title

FIRST FLOOR PLAN
OPTION A

Drawing Number

A-101.0A



FIRST FLOOR PLAN
OPTION B — 1

0 2' 4' 8'

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Drawing Title

FIRST FLOOR PLAN
OPTION B

Drawing Number

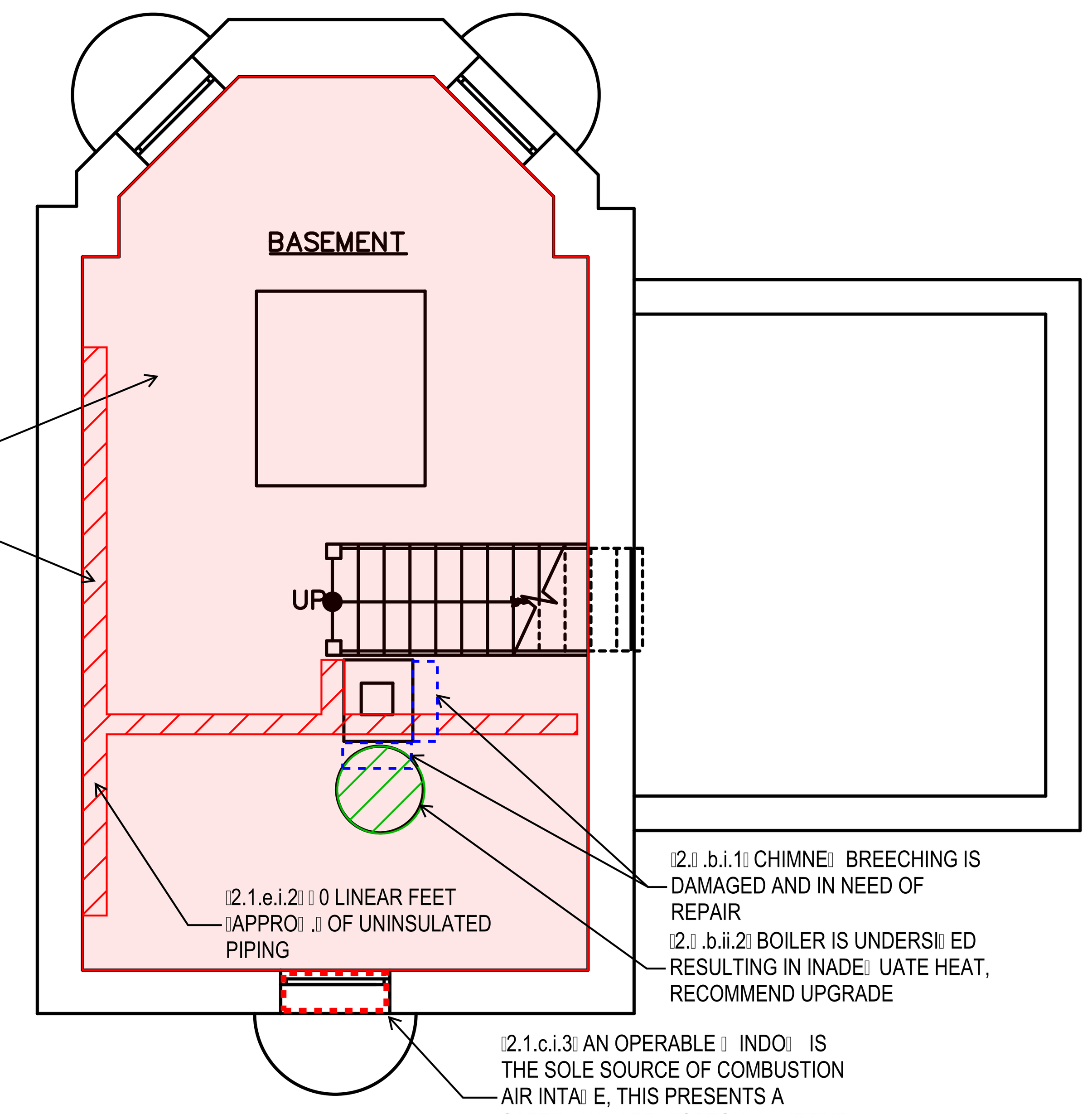
A-101.0B

3.0 APPENDIX

3.2 Mechanical

M-100 Mechanical Basement Floor Plan

M-101 Mechanical First Floor Plan



▯ E▯ - NE▯ ▯ OR▯ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LAC▯ ING MECHANICAL E▯ HAUST
- LAC▯ ING MECHANICAL VENTILATION / PRESSURI▯ ATION
- OSHA / FALL HA▯ ARD
- AIR INTA▯ E TOO CLOSE TO CONTAMINANT SOURCE
- HA▯ ARDOUS PIPING CONFIGURATION
- E▯ UIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

▯ E▯ - RECOMMENDED UPGRADES

- E▯ UIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NE▯ E▯ UIPMENT
- SEVEREL▯ CORRODED PIPING
- TRIPPING HA▯ ARD
- INADE▯ UATE HEATING
- LEA▯ ING PIPING / FITTING
- DAMAGED CHIMNE▯ BREECHING

▯The abo▯ e drawing ▯ eys are applicable to the ▯ echanical drawings only. Re▯ er to each trade's drawing ▯ ey ▯ or trade-speci▯ ic sy▯ bols.

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Belfiore Proj #:
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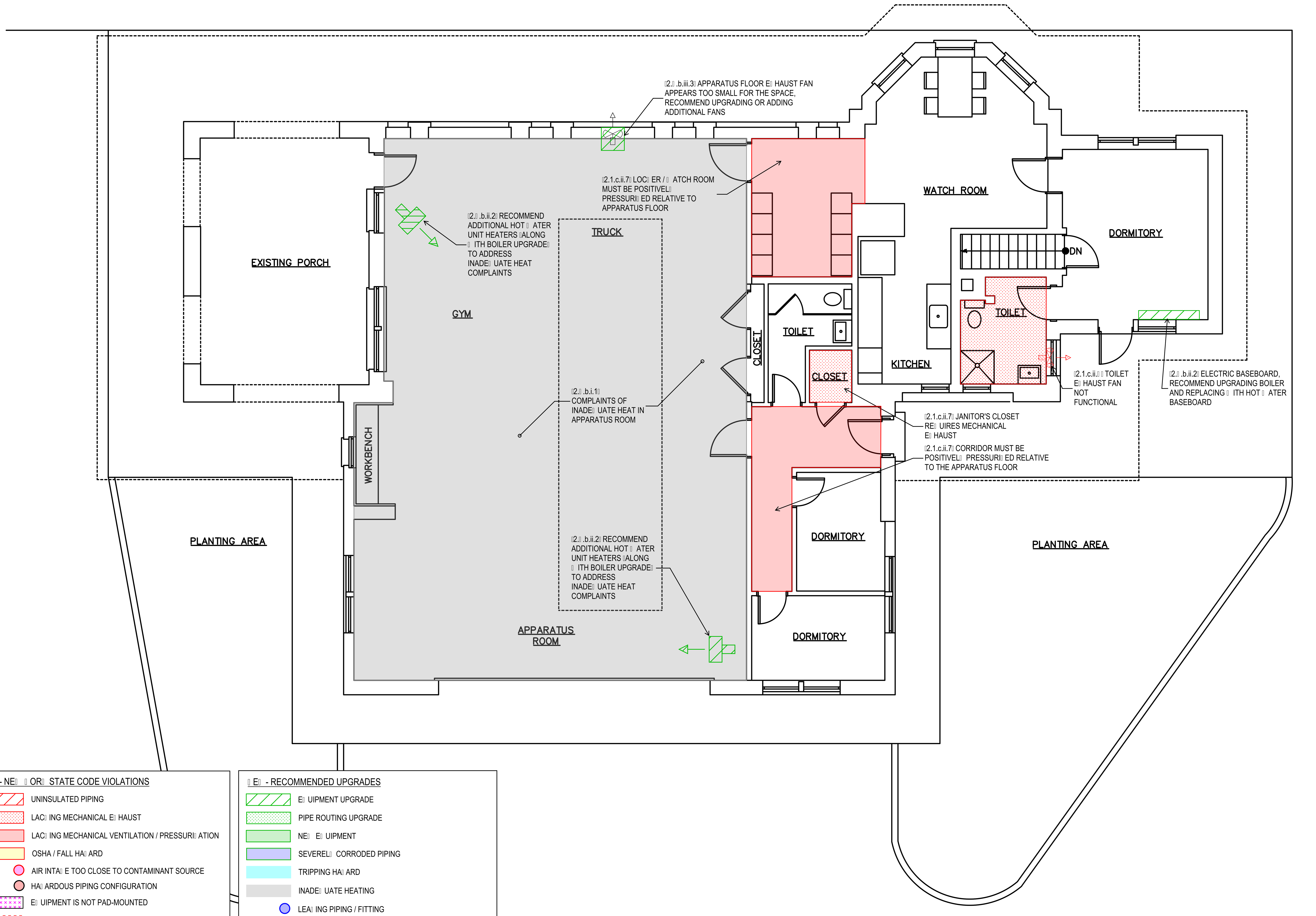
NORTH

Project
FIREHOUSE #3
St. James North & Emmet Place
Garden City, NY 11530

Drawing Title
MECHANICAL BASEMENT PLAN

Drawing Number
M-100



□ E□ - NE□ □ OR□ STATE CODE VIOLATIONS

- UNINSULATED PIPING
- LAC□ ING MECHANICAL E□ HAUST
- LAC□ ING MECHANICAL VENTILATION / PRESSURI□ ATION
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- AIR INTA□ E TOO CLOSE TO CONTAMINANT SOURCE
- HA□ ARDOUS PIPING CONFIGURATION
- E□ UIPMENT IS NOT PAD-MOUNTED
- COMBUSTION AIR SOURCE NOT CODE-COMPLIANT

□ E□ - RECOMMENDED UPGRADES

- E□ UIPMENT UPGRADE
- PIPE ROUTING UPGRADE
- NE□ E□ UIPMENT
- SEVEREL□ CORRODED PIPING
- TRIPPING HA□ ARD
- INADE□ UATE HEATING
- LEA□ ING PIPING / FITTING
- DAMAGED CHIMNE□ BREECHING

□The abo□ e drawing □ eys are applicable to the □ echanical drawings only. Re□er to each trade's drawing □ ey □or trade-speci□ic sy□ bols.

1/4"=1'-0"

4 2 0 4

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Belfiore Proj #:

Drawn:
EAO

Checked:
PAB

NORTH

Project

FIREHOUSE #3

St. James North & Emmet Place
Garden City, NY 11530

Drawing Title

MECHANICAL FIRST FLOOR PLAN

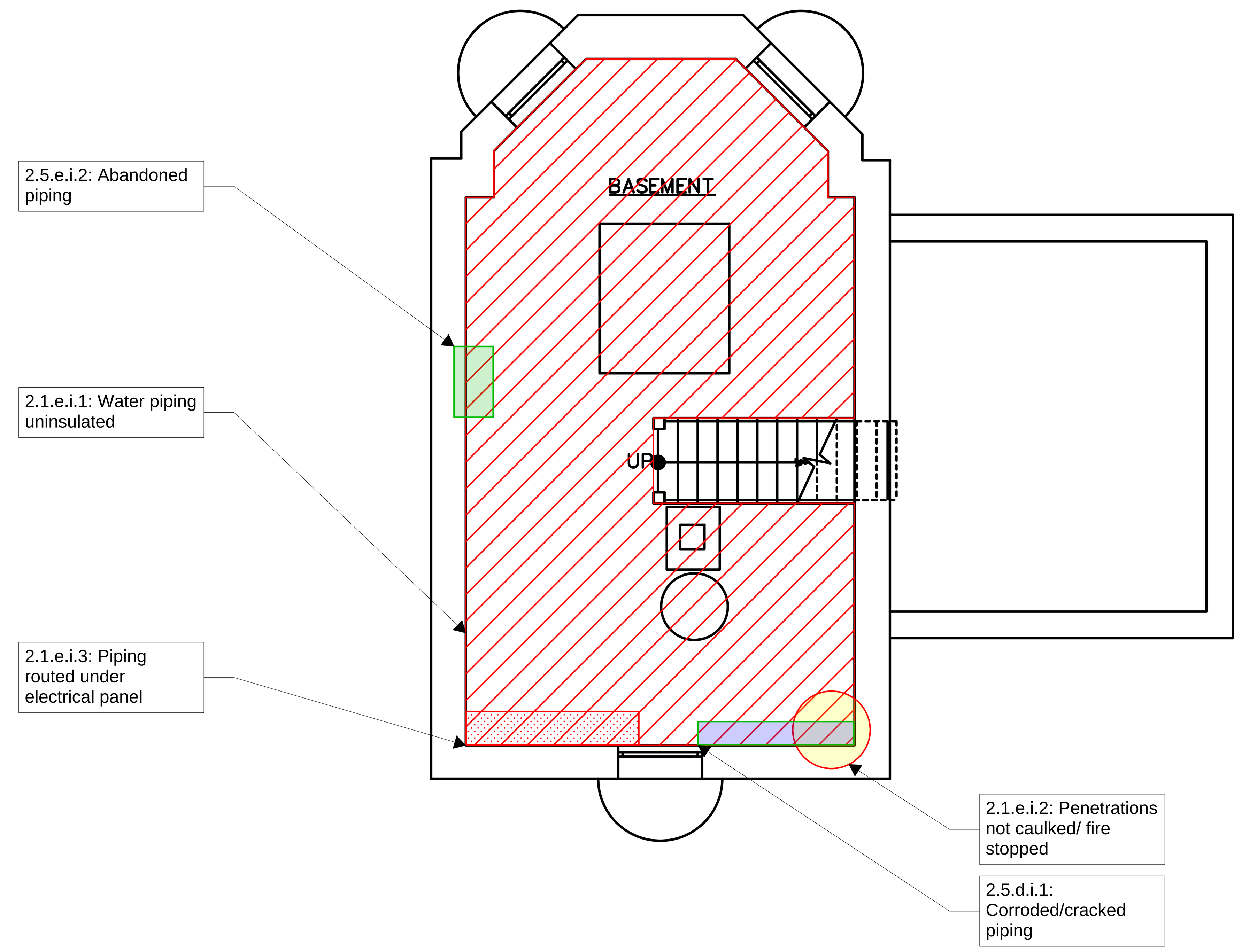
Drawing Number

M-101

3.0 APPENDIX

E - NE OR STATE CODE VIOLATIONS
UNINSULATED PIPING
CODE VIOLATION
INADE UATE ROOF DRAINAGE
PENETRATION NOT CAUL ED/FIRE STOPPED
E UIPMENT IS NOT PAD-MOUNTED
PIPING NOT PROPERL SUPPORTED

E - RECOMMENDED UPGRADES
E UIPMENT UPGRADE
PIPE MATERIAL UPGRADE
ABANDONED PIPING
SEVEREL CORRODED PIPING
TRIPPING HA ARD
LEA ING PIPING / FITTING



1/4"=1'-0"

4 2 0 4

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Seal:

Belfiore Proj #:

Drawn:
EAO
Checked:
PAB

NORTH

Project

FIREHOUSE #3

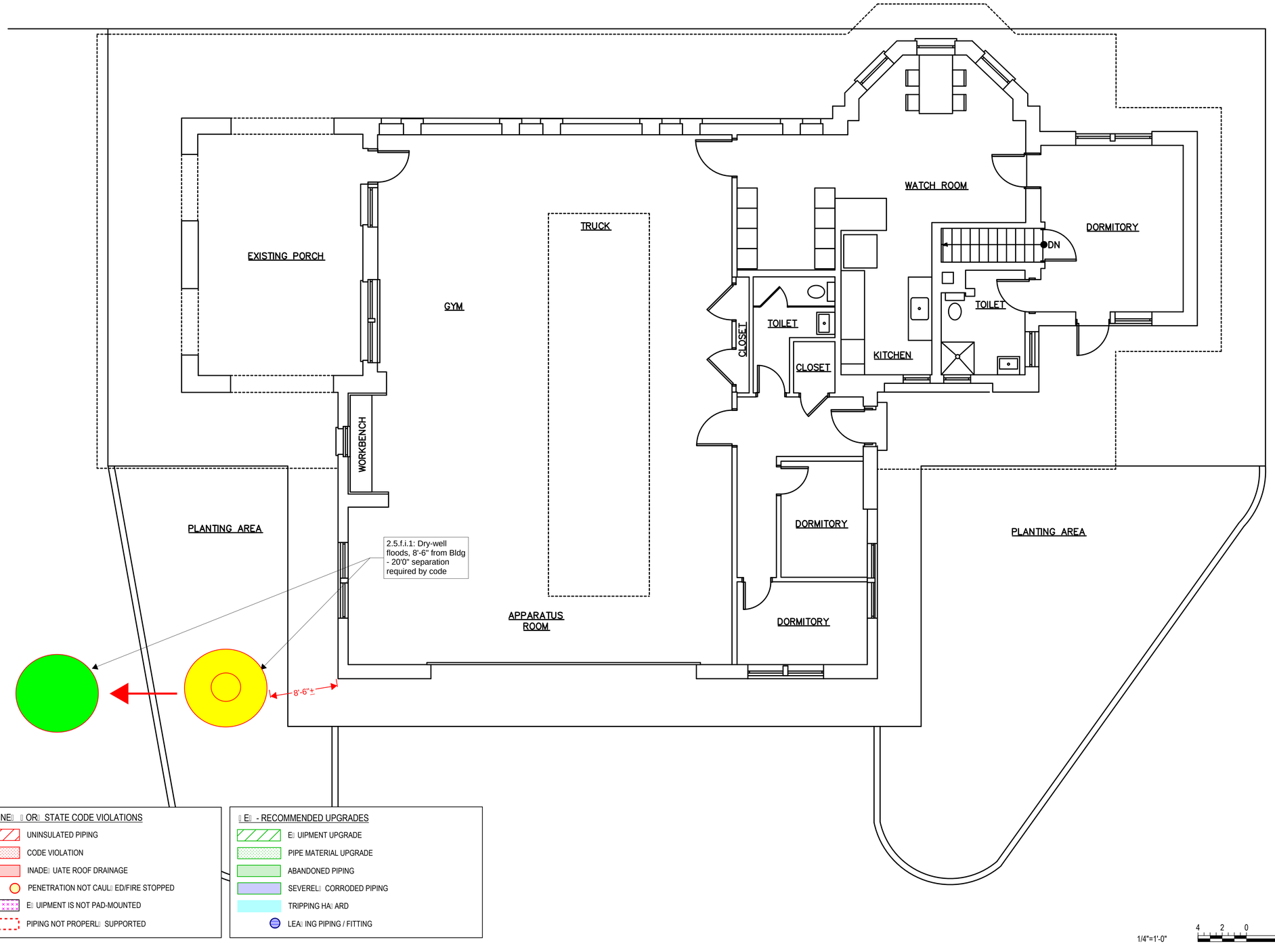
St. James North & Emmet Place
Garden City, NY 11530

Drawing Title

PLUMBING BASEMENT FLOOR PLAN

Drawing Number

P-100.00



GARDEN CITY
FIRE DEPARTMENT
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FIREHOUSE #3

St. James North & Emmet Place
Garden City, NY 11530

Drawing Title

PLUMBING FIRST FLOOR PLAN

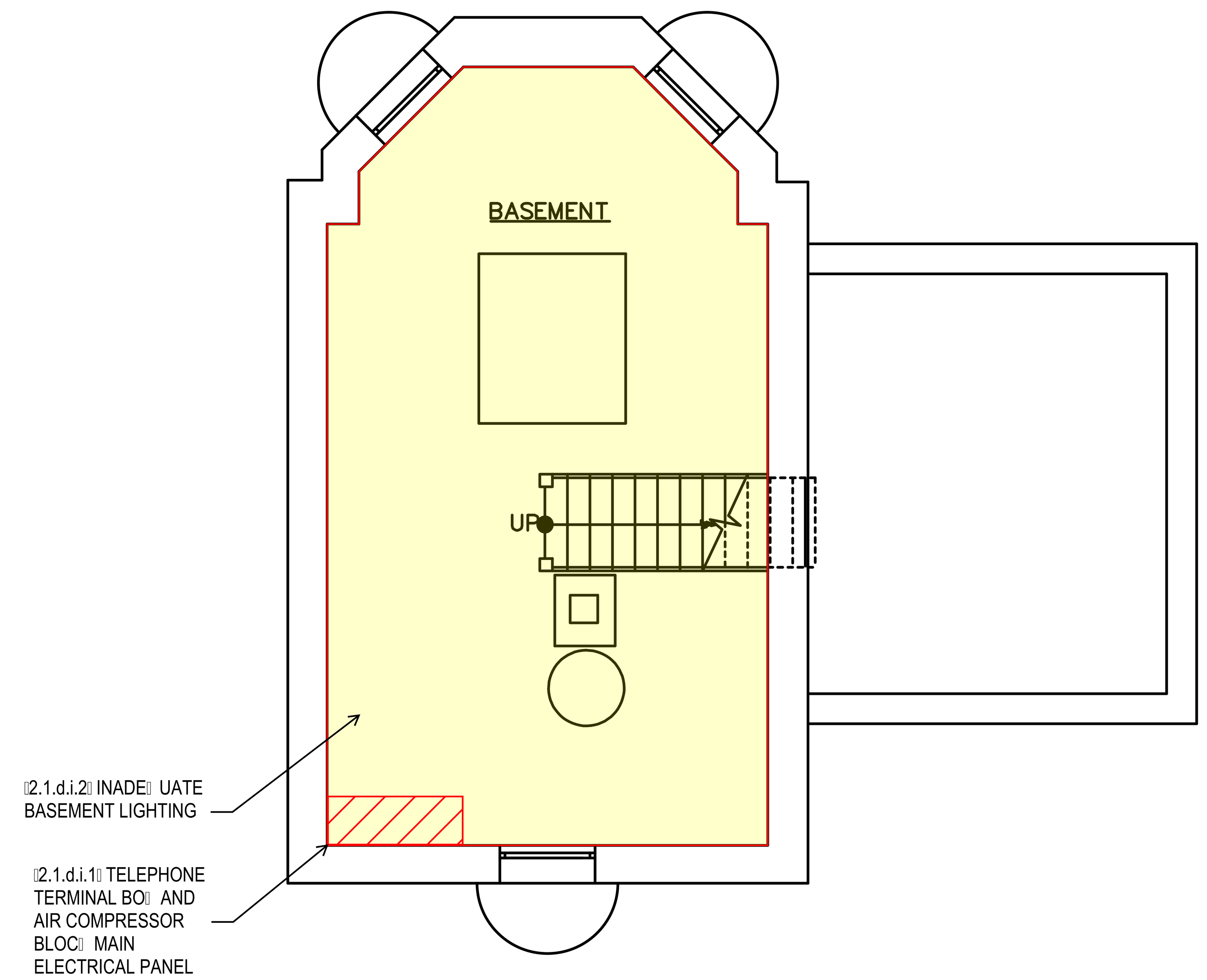
Drawing Number

P-101.00

3.0 APPENDIX

3.4 Electrical

E-100 Electrical Basement Floor Plan



□ E□ - NE□ □ OR□ STATE CODE VIOLATIONS

- OBSTRUCTED ACCESS
- GFI RECEPTCALE RE□ UIRED
- INADE□ UATE LIGHTING

□The abo□e drawing □eys are applicable to the electrical drawings only. Re□er to each trade's drawing □ey □or trade-speci□ic sy□ bols.

1/4"=1'-0" 4 2 0 4

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Drawing Title

ELECTRICAL BASEMENT PLAN

Drawing Number

E-100