



## **BUILDING ENVELOPE SCOPING GUIDELINES**

### **1.0 GENERAL GUIDELINES**

### **2.0 BUILDING ENVELOPE**

#### **2.1. Introduction**

The following ‘Scoping Guidelines’ are provided to clarify the intended scope of assigned Capital Improvement Program (CIP) projects related to the Exterior Modernization/Building Envelope/Water Infiltration Work and provide direction on how to approach the investigation and scoping of the work for the ‘DOE Referred Items’ as well as ‘SCA Additional Recommended Items’ in Scope Reports. These guidelines are intended to supplement the General Scoping Guidelines and the requirements of the Scoping Process outlined in the CIP Project Manual.

The intent of a Building Envelope Project is to perform repair or replacement of the system components in the building envelope that are causing leakage or other problems, which were identified in the latest BCAS report, to bring the components into good repair, or if necessary replace them entirely.

**Design of repairs must be comprehensive and engineered, addressing all building envelope categories and prioritizing repair to minimize the need and cost of maintenance in the future. The proposed work should provide a watertight building envelope for a minimum of 7 to 10 years before maintenance is required and 15-20 years before any major replacement/renovation is necessary.**

It is important to assure that all building envelope components are inspected so that when the project is complete there will not be water infiltration issues. This poses a significant challenge in larger buildings due to the potentially high number of leak sources. However, it is common for problems to be isolated to a specific area of the building, such as a recent or past addition with unique construction, or related to a specific repeated component such as a certain type of window. In both cases, a thorough review of the conditions and discussion of the history of problems with school personnel are still critical to understanding the extent of the issues.

The building envelope consists of all components of exterior walls (above and below grade) windows/glazing, doors, roofs, and related systems that function together to control heat and moisture flows into and out of a building. The primary issue with building envelopes is water leakage, and leakage can occur for a variety of reasons. These reasons include:

- Defective design of components
- Defective installation of components
- Failure of seals or transitions between different components
- Deterioration of components due to normal weathering/aging
- Premature deterioration of components due to defective materials

When reviewing the building, envelope it is important to realize that all components function together as a system, and that all components must be evaluated/reviewed in order to fully identify any issues. Other issues with building envelopes can include thermal inefficiencies, air leakage, excessive water vapor flow or accumulation, and interior condensation.



## **2.2. Energy Code Compliance**

The **2020** NYC Energy Code requires that alterations to any building or structure are to comply with the requirements of the code for new construction, with the exceptions to these requirements specifically listed in Section C503 .1. Thus in general, for the following types of work:

- Roofing replacement scope items must comply with Sections C402.1.3 and C402.2.
- Parapet replacement projects with a 3-foot strip roofing replacement
  - Partial roofing replacement must follow the energy code and thus comply with insulation requirements as listed in Table C402.1.3. The NYC Department of Buildings requires that within the existing slope the roof strip be insulated as much as possible without causing a ponding issue, which would create an unsafe condition. Provide such statement on drawings indicating areas where energy code isn't being met, as meeting such may create an unsafe ponding condition.
  - Progress Inspections for Energy Code compliance are required for the partial roofing replacement as mandated by Section BC 109.3.5.1 RCNY 5000-01
  - If sheeting/decking is not exposed, but insulation is damaged, Section C504 applies.
- Masonry facade replacement projects, whether partial or full, that do not expose an existing wall cavity do not require insulation meeting Section C402.2 as per Section C503.1, Exception #4. This applies to cavity walls also if no framing members are exposed. Cavity walls constructed in the early 1970's many times may have had a one or two-inch cavity only. Where possible, provide insulation while maintaining a drainage plane **using ¼" drainage mat**.
- Window replacement projects must comply with Section C402.4, Table C402.4 for fenestration, and Section C402.5 for air leakage-thermal envelope. If the proposed work includes an increased window area, then compliance with maximum fenestration area has to be met. If window area is brought above the maximums or all windows are being replaced and the maximum fenestration threshold is surpassed, energy modeling is required to show compliance with the energy code.
- The **2020** NYCECC does not require existing buildings to add skylights to comply with Section C402.4.2. Section C503.3 outlines the requirements for new building envelope assemblies in alteration projects. If skylights are added to the design, the requirements of C503.3.3 are to be followed.

## **2.3. Project Definition**

Building Envelope categories are as follows. Each of the items has its own Capital Category:

- [Roofing](#)
- [Parapet](#)
- [Exterior Masonry](#)
- [Windows](#)
- [Exterior Doors](#)



An additional category related to water infiltration is:

➤ [Flood Elimination](#)

Also, refer to the [“Building Envelope Testing Scoping Guidelines”](#) for descriptions of recommended testing strategies and procedures.

Historically, a project was identified as an “Exterior Modernization” project in the CIP system when the BCAS system determined there were deficiencies in at least three of the five Building Envelope Cap Cat components. When BCAS determined there were less than three of the items deficient, the referred item specifically listed the Cap Cat of the intended Building Envelope category that was included in the Capital Plan rather than include it in the Exterior Modernization category. In order to avoid confusion as to whether an exterior modernization captured a particular element, the Exterior Modernization was removed as a Cap Cat and thus the individual building category component assigned. The CIP system will include a listing of the intended Cap Cat of the specific building envelope components referred to in the Capital Plan and include the individual “nodes” found to be deficient. The nodes provide insight as to what specific deficiencies led to the creation of the project.

#### **2.4. Referred Items and Additional Items:**

“Building Envelope Projects” deviate slightly from “General Scoping Guidelines” for referred and additional items. When the original ‘DOE referred item’ is one of the five components of the Building Envelope (roofs, parapets, exterior masonry, windows, exterior doors), the designer must verify the condition of all five components as well as that for “Flood Elimination” and advise the Design Project Manager (DPM) if the other components should be added to the scope of work as “SCA Additional Recommended Items” in order to provide a water-tight building upon completion of the project. Prior to proceeding with scoping of additional items, the Consultant AEOR must obtain approval by the DPM. If there is no work required in one of the Building Envelope categories, a positive statement indicating no work is required shall be included in the report.

As with all designated or undesignated components, it is important for the designer to determine the appropriate amount of work to be performed, not just to replace all the components identified by the Node. The goal is, in a cost effective manner, to upgrade the building envelope to provide a watertight enclosure to serve the school premises for 7 to 10 years as a minimum before maintenance (e.g., minor replacement of sealants, etc.) is required and 15 to 20 years before any major replacement is necessary.

#### **2.5. Investigation & Documentation of Findings**

Visit the site to perform visual inspections as appropriate to the scope of work. Arrange for the use of lifts and booms as appropriate. Document findings using photography and annotated drawings. Prepare “Existing Condition” or “Damage Mapping” drawings that record the locations and extent of deficiencies on copies of plans and/or elevations and include in the “Scope Drawings” section of the Scope Report (Appendix 2). Where water infiltration and interior damage is involved, prepare annotated plans and elevations to indicate the locations of observed and reported leaks and interior damage. (Refer to Section 2.7 regarding **preparing the [Interior Active Leak Record Form](#) and performing a room-by-room survey** with the School Custodian to identify areas of water infiltration). On the “Existing Condition” drawings, indicate the location of probes and tests and identify if the test results were “positive” or “negative” for water infiltration.



When choosing locations for water testing, consider the number of different conditions where water damage is present. In most circumstances testing two or three of each condition is sufficient for finding the leakage path or identifying the condition of the system. Water testing of every potential leakage source, or every similar condition where water damage is evident, is typically a waste of resources and does not provide any useful input to the project. Water testing is a systematic process in which a process of elimination allows for the water infiltration source to be targeted. Start from the lowest possible point of water infiltration and work up to the roof and parapet.

In addition to the “Existing Condition” drawings, prepare separate “Proposed Work” drawings, which correspond to the “Existing Conditions” drawings, but indicate the proposed work based upon analysis of the existing conditions. **Both “Existing Condition” and Proposed Work” drawings are to be included in the “Scope Drawings” section of the Scope Report (Appendix 2).**

Refer to the [Building Envelope Testing Scoping Guidelines](#) for additional information. [Exhibit A, List of Building Envelope Tests](#), and [Exhibit B, Building Envelope Map/Test Guidelines](#), of that guideline provides a comprehensive list and description of tests to be considered. Also refer to the [CIP Project Manual](#) for a further description of the Scoping Process.

## **2.6. Warranty/Guarantee**

When a component being scoped is under existing warranty/guarantee and believed to be a source of water infiltration, it is required to refer the items to the DOE/Custodian. DOE representative(s) must follow up with the company who issued warranty/guarantee. Typical manufacturer’s warranties include roofing, windows/insulating glass units, and some types of cladding. Roof warranties may be in effect for 20 years or more; windows and insulating glass are typically 5 to 10 years; cladding can vary widely from simple 1-year guarantees to longer term (10-50 year) warranties for a wide range of issues. There may also be separate agreements with specific contractors for workmanship on items such as brick masonry or sealant or injection waterproofing installations for which material/system warranties alone are not sufficient. These types of warranties are typically in the range of 1 to 3 years. In all cases, the warrantor will generally require that any repair or investigation work to their system(s) only be performed by approved contractors and only with their specific approval. They will typically reserve the right to void the warranty, either for specific components that are modified or for the entire warranted system, if these steps are not taken. Warranties are valuable – DO NOT risk voiding any warranty by performing work without contacting the appropriate manufacturer or contractor.

## **2.7. Meetings and Site Investigations with School Personnel**

The designer must meet with the school’s Custodian, Principal, and other designated school staff during the investigation to identify existing Building Envelope problems or hazards and review the status of outstanding building violations related to the Building Envelope and other renovations or additions being planned which may impact the funded project.

**Prior to the Kick-off Meeting, it is recommended that the AEOR forward a copy of the [Interior Active Leak Record Form](#) to the Custodian to request a list of rooms where active (bulk) leakage or areas of bubbling plaster and/or paint have occurred, but no water leaks have been observed. (After the AEOR’s site investigation indicated below, the final form is to be forwarded to the Custodial Engineer for concurrence). Following the Kick-off Meeting, the AEOR shall perform a room-by-room survey with the Custodian or his/her representative to identify areas of water infiltration and interior damage. While this can be time consuming in larger buildings, it is critical to evaluating the **potential sources of water or vapor****



**infiltration and determining the appropriate** scope of work for a project. This includes identifying signs in the basement of ground water or other subsurface water infiltration. In particular, identify with the Custodian any areas that experience recurring water infiltration that may have been recently repaired and are not showing visible signs of deterioration. This is critical, as many custodians are extremely diligent about repairing finishes and repainting after damage occurs. Take note of water staining which may be attributed to plumbing leaks, as well as damage to interior finishes with no history of bulk water infiltration that may then be attributed to other causes. The designer shall **complete the [Interior Active Leak Record Form](#) utilizing the custodian's initial mark-up and** annotate a set of plans and elevations indicating the extent of water infiltration and interior damage (**Damage Mapping Drawings**) and include in **Appendix 2** of the Scope Report. **For Consultant designed projects, the form and drawings shall also be included in the [Building Envelope Field Report](#).** Refer to Exhibit B for a sample of the completed leak form.

The “Damage Mapping Drawings” need not be more than a copy of annotated existing plans and elevations from the Authority’s EDOCS application with hand markings of field notes. (For samples, refer to Exhibits C, D & E). Damage shall be described to distinguish between the areas of simple staining, reports of prior leakage (without current leakage) and areas with clearly failed finishes or other evidence of water leakage. “Damage Mapping Drawings” are critical in diagnosing the nature and extent of leakage issues, as well as ascertain whether leaks are discrete/isolated conditions or are more widespread/systemic. This is necessary to determine the most appropriate testing strategies to confirm the cause(s) of deficiencies or leakage and/or confirm existing conditions

It is important when meeting with the school staff to be clear that the intent of the project is to address the repair or replacement of items listed in the Capital Plan as deficient and to bring the Building Envelope into good repair and provide a water-tight enclosure.

Minutes of meetings with school personnel shall be included in the Scope Report.

## **2.8. Building Envelope Field Report (Consultant Designed Projects)**

As soon as possible following the Initial Kick-Off Meeting and site visit(s), the Consultant AEOR shall utilize and submit a [Building Envelope Field Report](#) to document preliminary findings and proposed specialty testing, which can be found on the SCA Website and the internal SCA T: drive.

In addition to basic background information about the building and project, the Building Envelope Field Report shall include the following:

- Preliminary Findings (with references to photos to illustrate deficiencies)
- Proposed Specialty Testing
- Photos
- Interior Active Leak Record
- Preliminary Damage Mapping Drawings
- Probe Request Sketches
- NDT Request Sketches



**Preliminary Findings**

Identify building envelope deficiencies identified during the initial field investigation. Reference photo(s) to be included in the Appendix to illustrate the cited deficiencies. Deficiencies shall also be documented on the Preliminary Damage Mapping Drawings.

**Proposed Specialty Testing**

For each capital category, provide a list of proposed specialty testing, description of the problem(s) being investigated and what testing is expected to reveal. Requests for NDT Spray Tests, Probes, Roof Cuts, Surveys, Geotech Investigation, Borings and/or Sewer/Piping Investigations and any other requested testing must be identified.

**Photos**

Provide photos to illustrate the deficiencies identified in the Preliminary Findings.

**Interior Active Leak Record**

Complete and include in the report the [Interior Active Leak Record Form](#) as described in Section 2.7 above.

**Preliminary Damage Mapping Drawings**

Include preliminary “Damage Mapping Drawings” as described in Section 2.7 above.

**Probe Request Sketches/NDT Request Sketches**

Provide sketches showing proposed destructive testing for probes, roof cuts, areas of proposed NDT spray tests, etc. The description of probes must indicate the depth & size requested.

**2.9. Scope Report - Building Envelope (BE) Findings and Recommendations.**

The [Building Envelope \(BE\) Findings and Recommendations Template](#) shall be used to prepare a complete and comprehensive scoping of all Building Envelope Capital Categories and components and the contents of the template inserted into the latest Scope Template found on the SCA Website or Internal T: drive, replacing the standard contents of “Section G – Findings and Recommendations”.

The Building Envelope (BE) Findings and Recommendations Template is comprised of an Executive Summary, followed by a listing of all of the Building Envelope Capital Categories, starting with “DOE-Referred” Categories and followed by the remaining Building Envelope Categories as “SCA Additional Recommended Items”. A sample of “Building Envelope (BE) Findings and Recommendations” is included in [Exhibit A](#).

**2.9.1 Parts of the Section G – Finding and Recommendations**

- **Executive Summary**

Provide an “Executive Level” summary to provide background information on conditions or needs that generated the project, followed by brief findings and recommended work under each DOE-Referred and SCA Additional Recommended Category. See the template for format and text to be edited to suit the specific project.

For “Emergency” projects, include introductory statements in the Executive Summary providing background regarding recent and on-going work and what



triggered the emergency project. Reference specific DSF, DOE or other correspondence describing the initial concerns and summarize what action has been taken. Include copies of correspondence in Appendix 7 of the scope report. Be sure to fully address and respond to all expressed concerns or issues raised by DOE and DSF.

Summarize the spray testing, probes, roof cuts and other specialty testing that have been performed and what was found. (If any testing is not yet complete, explain what testing has been requested and what it is expected to reveal.) Clearly identify the recommended work under each Capital Category (for the DOE-Referred and Additional Work). Update the summary of findings and recommendations when testing is complete.

*The following shall be included in the findings and recommendations for each Building Envelope (BE) Capital Category:*

- **Introduction**

Provide background information and a general description of the primary components under each Capital Category. Include a description of history of previous renovation projects and repairs. Identify the status of warranties for roofing and other components. Expand upon background information for Red Dot and other emergency projects and the hazardous conditions that must be addressed in the project. Identify if there is or is not water infiltration occurring due to defective components in the referenced category.

- **BCAS Summary**

After the Introduction, provide a BCAS Summary including all components under the Capital Category, with the BCAS rating and all deficiencies and comments noted. Indicate if the components are noted as “does not exist” or if “no deficiencies were recorded”. Do not include BCAS priorities, recommended work or quantities in the BCAS Summary. See format example included in Exhibit A.

Including the summary of BCAS ratings and deficiencies benefits the Designer, as well as the reviewers, to ensure that all BCAS deficiencies are properly addressed. Prior to submitting the Draft or Final Scope Reports, be sure to include the latest BCAS Report and update BCAS references accordingly. (Typically BCAS Reports are updated in the early fall of each year.)

- **Findings and Recommendations**

In accordance with SCA Standards, all findings should be numbered in outline format and have a one to one correlation with the recommendations. This is intended to clearly identify the deficiencies in the ‘Findings’ section and the resulting ‘Recommendations’. Items referred to in the ‘Recommendations’ should include statements in the ‘Findings’ that correspond with the appropriate description of the existing conditions or deficiencies that ‘justify’ the Recommendations. Include alternative approaches explored (if any) and indicate the recommended option.

The outline of components in the BE Template is based upon the list of components to be scoped under each Capital Category as described in more



detail in the Scoping Guidelines for each category. If components do not exist at this building, indicate “Does not exist at this building” for both the findings and recommendations.

### 2.9.2 Typical Items to be considered in determining the recommendations

- **Confirmation of Existing Conditions:** The AEOR, as part of their independent investigation, must confirm actual existing conditions. The AEOR should not rely upon the condition descriptions in the BCAS report or items identified by school personnel, without further investigation and assessment. Include findings based upon the AEOR’s independent investigation and assessment based upon site inspection and confirmed reports from the Custodian, Principal, or other school representatives.

BCAS deficiencies must be field verified to confirm conditions and determine if work is required in the project. Deficiencies must be described in the findings and illustrated by referenced photos in Appendix 1 of the Scope Report. References to photos or findings in the BCAS report alone are not acceptable.

Retain the list of all components in the Building Envelope Findings and Recommendations Template. Provide a brief description of each component and describe specific deficiencies (if any). Identify all deficiencies noted in the BCAS report and if, in the AEOR’s opinion, work is or is not required. If the component is in good condition and no work is required, indicate in the corresponding findings and recommendations.

Where components are in good condition and no work is required, provide a brief description of the component(s) and condition under “findings”. If appropriate, indicate “No work required” or “No work required at this time” in the “Recommendations” in lieu of “No recommendations”.

When commenting on general conditions, use terms as used in BCAS (Good, Fair and Poor), rather than “fine” or “adequate”. For any components that are noted as “fair” or “poor”, describe conditions that contribute to that assessment.

- **Break-down of Larger Categories of Work:** Some LLW Categories cover a very large amount of work. It is recommended that the ‘Findings and Recommendations’ be broken into smaller subsections as appropriate. Break down findings between the Original Building and subsequent additions. For Exterior Walls, for example, consider breaking down conditions by “like” elevations with similar properties, such as street-facing or courtyard-facing elevations, where the extent of deficiencies can be described on the Damage Mapping Drawings. The reader should not be required to read many pages of repetitive findings for each individual elevation before getting to the recommendations.
- **Cause of Deficiencies:** The ‘Findings’ should include the description of the deficiencies and what, in the AEOR’s professional opinion, is judged to be the cause(s). Summarize the findings of any probes and/or tests performed to confirm conditions and cause(s) of defects. In the Scope Report, note if probes or testing are planned but not yet completed. If applicable, describe the



probes and/or testing that have been requested and estimated completion date(s).

- **Interior Damage:** Repair of collateral damage related to the referred items shall also be included in the scope of work as part of the Work. If interior damage has been caused by water infiltration due to roof or wall deficiencies, for example, include the interior repairs with the repair of roof or wall deficiencies.
- **Other Collateral Impacts:** Indicate existing conditions and impacts to MEP and other components required by the proposed work under each category. If no impact is anticipated, indicate “no impact anticipated”.
- **Photo Documentation of Findings:** In the numbered pictures referred to in the ‘Findings’, add photo ‘close-ups’ as necessary to allow a view of the cited deficiencies. Include reference to photos in bold text in the findings, such as (Photo #1) or (Photo #2).
- **Record the locations and extent of deficiencies and proposed work on the “Damage Mapping” and “Recommended Work” Scope Drawings in Appendix 2 of the Scope Report.**
- **Quantification of Recommendations:** ‘Recommendations’ should **include quantification** of the repair/replacement for the proposed scope. Refer to Scope Drawings to clarify location and quantities as appropriate. The quantities should match those in the Scope Estimate. Quantities in recommendations shall be in bold text with units, such as “Area of Work: 350 SF” or “Area of Work: 110 LF”.

### 3.0 EXHIBITS

- A. [Sample Building Envelope Findings and Recommendations \(with BCAS Ratings & Notes\)](#)
- B. [Sample Completed Building Envelope Interior Active Leak Record Form.](#)
- C. [Sample Damage Mapping Drawings \(Hand Markings\)](#)
- D. [Sample Damage Mapping Drawings \(Showing Interior Damage & Test Locations on Exterior Elevations\)](#)
- E. [Sample Damage Mapping Drawings \(Showing a Sample Graphic Legend\)](#)

End of Building Envelope Scoping Guidelines



## EXHIBIT A - SAMPLE BUILDING ENVELOPE FINDINGS AND RECOMMENDATIONS (WITH BCAS RATINGS & NOTES)

### G. FINDINGS AND RECOMMENDATIONS

#### Executive Summary

The following provides overall background information on the extent of work proposed for the DOE Referred and SCA Additional Recommended Items to bring the building envelope of this school into good repair and eliminate water infiltration.

It is our understanding that the school continues to experience water infiltration issues at isolated locations throughout the building, more specifically at the upper floors. It appears that work related to these deficiencies was performed as part of the Exterior Walls, Roof and Interior Project (Design Number D001293) and as part of the Exterior Modernization Rotted Window Frames projects, but the water infiltration has persisted.

The school has reported water infiltration at localized areas which has resulted in damage to existing paint and plaster within these spaces. As mentioned previously, although previous repair programs consisting of work performed on the exterior walls, roofs and interiors were performed during the years 1997 and 2004, water infiltration has persisted and it is the intent of this project to address these deficiencies and to provide long term solutions as described below.

Also, a number of open violations have been issued related to deteriorated brick masonry, deteriorated plaster at interior spaces and water infiltration at various locations throughout the building. It is important to note that current open violations, (as fully described in Section E), will be addressed or included in Referred Items. Deficiencies related to exterior exit doors have also been issued but it is recommended that these items be addressed by DSF as maintenance items.

Although the designated DOE Referred Work authorized by SCA Capital Plan Management was limited to the Building Envelope Capital Category of "Exterior Masonry", with an assigned node "160013 Exterior Walls", a comprehensive review of the other components under this and all other Building Envelope Categories was undertaken to determine if additional work is recommended now or in the near future to bring the building envelope into good, watertight condition. The findings and recommendations under each Building Envelope Category are summarized below and described further in the detailed "Findings" and "Recommendations" later in this section of the report.



## **DOE Referred Item 1.1. Exterior Masonry**

The building was constructed in 1936 and the structural system consists of a steel frame superstructure with solid masonry walls. The building is a 3 story brick structure with a full cellar that is a full level below grade.

Overall, the building was found to be in good condition with the exception of areas with cracked brick or limestone masonry, deteriorated mortar joints and vertical cracks at building corners. The school has reported water infiltration particularly near building corners and it appears that these conditions are related to deteriorated masonry at the exterior.

Recommended work includes selective repairs to brick and stone, repointing, as well as corner replacement at four locations. Interior repairs to plaster walls and ceilings damaged by exterior masonry deficiencies are also proposed as part of the project.

## **SCA Additional Recommended Item SCA 3.1 Roofing**

Existing roofing assemblies consist of either a Built-Up roof (BUR), copper standing seam metal roofing system or an IRMA roofing system. Partial roofing repairs were performed as part of the Exterior Modernization/Rotted Window Frames Project completed in the year 2006. Vegetative growth was observed throughout the Main Roof, particularly at existing roof drain locations and at the roof perimeter.

It appears that current water infiltration issues are related to deteriorated roofing assemblies, particularly at locations near the perimeter of the building.

Full roof replacement of the existing Built-up and copper standing seam metal roofing systems is recommended. Interior repairs to plaster walls and ceilings damaged by roof deficiencies are proposed as part of the project.

## **SCA Additional Recommended Item SCA 3.2 Parapets**

Existing parapets were renovated as part of the Exterior Modernization Project which took place in the year 2004. Overall, they appear to be in good condition with the exception of the lower parapet sections on the Main Roof which fall below the minimum required height of forty two inches above the finished roof, as per NYC Building Code. Parapet coping stone joints were found to be open at many locations.



It is proposed to add a parapet-mounted railing at low parapets and cut and reseal existing coping stones. No interior damage was noted due to parapet defects.

**SCA Additional Recommended Item 3.3 Windows**

All windows were removed and replaced as part of the project Design Number D006904, LLW Number 031136. Existing windows and exterior window guards are in good condition. No work is required under this project. It is recommended that minor operational repairs be referred to DSF for maintenance.

**SCA Additional Recommended Item SCA 3.4 Exterior Doors**

Overall, exterior doors were found to be in good to fair condition. No work is required under this project. It is recommended that minor repairs be referred to DSF for maintenance.

**SCA Additional Recommended Item SCA 3.5 (Below Grade) Flood Elimination**

Deficiencies related to Below Grade Flood Elimination will be addressed as part of Design Number D010086: LLW No. 043946 Flood Elimination and Design Number D016661: LLW No. 096129, Reinforcing Supporting Elements.

**1. DOE Referred Items:**

**1.1 Description/LLW#: Exterior Masonry/LLW#107738**

**Node(s): 160013 Exterior Walls**

**Introduction**

The building was constructed in the year 1936 and the structural system consists of a steel frame superstructure with solid masonry walls. The building is a 3 story brick structure with a full cellar that is a full level below grade.

Overall, the building was found to be in good condition with the exception of areas with cracked brick or limestone masonry, deteriorated mortar joints and vertical cracks at building corners. The school has reported water infiltration particularly near building corners and it appears that these conditions are related to deteriorated masonry at the exterior.

*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*



- *Exterior Walls: 4-Between Fair and Poor; open stone joints, open brick joints, cracked/displaced/spalled brick at building corners were noted. Some areas of water infiltration through brick were also noted (see pages 8-9 of the 2015-2016 BCAS).*
- *Louvers: 2-Between Good and Fair; no deficiencies recorded.*
- *Chimney(s): 3-Fair; minor brick cracks and spalling was noted.*
- *Exterior Soffits: Noted not to exist at this building.*
- *Awnings & Canopies: Noted not to exist at this building.*
- *Areaways (Drains, Gratings, Slabs, Railings, Stairs & Walls): 3-Fair; deteriorated coping stone was noted.*
- *Loading Dock: Noted not to exist at this building.*
- *Stairs/Ramps:*
  - *Building Cheek/Flank Walls: 4-Between Fair and Poor; open stone joints and minor brick cracks/spalling were noted.*
  - *Railings: 3-Fair; a missing railing was noted.*
  - *Stairs/Ramps: 4-Between Fair and Poor; open stone joints were noted.*

## Findings:

### A. Exterior Walls

Street Elevations: Front (108<sup>th</sup> Avenue/South Elevation) and Sides (155<sup>th</sup> Street/East; and West Elevations)

The Front and Side Street Elevations are comprised of face brick with decorative limestone bands, trim and window surrounds with a granite base.

1. Deteriorated brick mortar joints were noted along entire elevation, particularly in areas which were not part of previous repair projects. (Photos 1 & 2).
2. Deteriorated limestone mortar joints were noted, particularly at building corners that have vertical limestone bands. (Photos 3 & 4).
3. Deteriorated window and door perimeter sealant were noted as a typical condition. (Photos 5 & 6),
4. Cracked face brick was observed at several locations throughout this elevation. (Photo 7).



5. Spalled limestone was noted at vertical bands. (Photo 8).
6. Cracked limestone was observed at vertical bands. (Photo 9).
7. Deteriorated sealant at limestone coping stone joints was observed throughout the entire building. (Photo 10).
8. Open and deteriorated mortar joints at the granite base of the building were observed. (Photo 11).
9. Efflorescence at brick masonry units was noted at isolated areas of the building. (Photo 12).
10. Open and eroded mortar joints at limestone sills were observed throughout the entire elevations. (Photo 13).
11. Continuous vertical crack was observed at building corners. (Photo 14).

#### Courtyard/Rear Elevations (North)

Courtyard/Rear Elevations are comprised of face brick with limestone window sills and copings.

1. Deteriorated brick mortar joints were noted along entire elevation, particularly in areas which were not part of previous repair projects. (Photos 15 & 16).
2. Bulging brick masonry was noted at the roof spandrel level. (Photo 17).
3. Deteriorated window and door perimeter sealant were noted as a typical condition. (Photo 18).
4. Efflorescence at brick masonry units was noted at isolated areas of the building. (Photos 19 & 20).
5. Open and eroded mortar joints at limestone sills were observed throughout the entire elevation. (Photos 21 & 22).
6. Continuous vertical crack was observed at both building corners. (Photos 23 & 24).

#### Bulkhead Elevations

1. Deteriorated brick mortar joints were noted along entire elevation, particularly in areas which were not part of previous repair projects. (Photo 25 & 26).
2. Deteriorated window and door perimeter sealant were noted. (Photo 27).

- B. Louvers – No deficiencies were noted.
- C. Chimney(s) – (See Findings for Courtyard/Rear Elevations).
- D. Exterior Soffits: No exterior soffits exist at this building.
- E. Awnings & Canopies: No awnings & canopies exist at this building.



- F. Areaways (Drains, Gratings, Slabs, Railings, Stairs & Walls) – No deficiencies were noted.
- G. Loading Dock: No loading dock exists at this building.
- H. Stairs/Ramps (Stairs/Ramps, Building Cheek/Flank Walls, Railings) – Deteriorated stone mortar joints were noted.
- I. Interior Damage
- J. Existing wall/ceiling paint and plaster are damaged at isolated locations throughout the building. It is probable that this is the result of active water infiltration within or adjacent to these areas due to exterior wall deficiencies. (Photos 28 & 29).
- K. Other Collateral Impacts
- L. Plumbing: No plumbing components are impacted by the proposed exterior masonry work.
  - 1. Mechanical: No mechanical components are impacted by the proposed exterior masonry work.
  - 2. Electrical: Items such as existing loud speakers, fire alarm devices, intrusion alarm devices and electrical outlet boxes will be temporarily removed and stored for re-installation.
  - 3. Other: No other collateral damage/impacts are anticipated due to the proposed exterior masonry work.

## Recommendations:

### A. Exterior Walls

Although previous repair programs appear to have mitigated water infiltration issues throughout the building, leaks are still present, as evidenced by damage(s) to interior finishes. It is recommended that repairs be performed to the exterior masonry in order to eradicate the conditions described above.

#### General:

- Assume all material to be removed to contain asbestos, caulking contains PCB and paint is lead based paint.
- Provide full height pipe scaffolding on all elevations, typical for the duration of the Contract. **(22,600 SF)**
- Provide sidewalk shed for public safety, minimum at paved areas. **(560 LF)**



Street Elevations: Front (108<sup>th</sup> Avenue/South Elevation) and Sides (155<sup>th</sup> Street/East; and West Elevations)

1. Cut minimum  $\frac{3}{4}$ " deep all brick masonry joints, prepare joints and repoint using Type O mortar. **Area of Work: 4,230 SF**
2. Cut minimum  $\frac{3}{4}$ " deep all limestone mortar joints, prepare joints and repoint using Type N mortar. **Area of Work: 6,840 SF**
3. Cut and remove caulking and filler at all window and door perimeter joints. Clean and prime joint, install new filler and caulk using Type 1C sealant. **Area of Work: 3,545 LF**
4. Remove face bricks at scattered locations including ties and anchors. Fill joints of backup masonry as per Area Face Brick Replacement Detail. **Area of Work: 380 SF**
5. Remove loose and spalled limestone from isolated locations at vertical band. Prepare area and repair. **Area of Work: 175 SF**
6. Clean existing crack at limestone, set injection ports and install epoxy adhesive. **Area of Work: 100 LF**
7. Cut sealant and filler from the transverse joints of limestone coping stones. Prime joint, install filler, bond breaker tape and caulk joint using Type 1C sealant. **Area of Work: 150 LF**
8. Cut minimum  $\frac{3}{4}$ " deep all granite stone mortar joints, prepare joints and repoint using Type N mortar. **Area of Work: 1850 SF**
9. At completion of project, entire building to be power washed using water and detergent. **Area of Work for this Elevation: 11,750 SF**
10. Cut and remove sealant from all window sills. Clean and prime joint, install bond breaker tape, filler and caulk joint using Type 1C sealant. **Area of Work: 3,090 LF**
11. Remove cracked face brick masonry, repair back-up wall, stabilize back-up wall with pins, parge area and provide new face brick masonry with continuous vertical control joint, per Corner Brick Replacement Detail. **Area of Work: (2) corners, northeast and northwest, approximately 48 LF in height.**

Courtyard/Rear Elevations – (North)

1. Cut minimum  $\frac{3}{4}$ " deep all brick mortar joints, prepare joints and repoint using Type O mortar. **Area of Work: 12,940 SF**
2. Remove bulging brick masonry at isolated locations throughout the elevation. Fill joints of back-up masonry as per area face brick replacement detail. Include cleaning, scraping and painting of all exposed underlying steel. **Area of Work: 250 SF**



3. Cut and remove caulking and filler at all window and door perimeter joints. Clean and prime joint, install new filler and caulk using Type 1C sealant. **Area of Work: 1,675 LF**
4. At completion of project, entire building to be power washed using water and detergent. **Area of Work for this Elevation: 9840 SF**
5. Cut and remove sealant from all window sills. Clean and prime joint, install bond breaker tape, filler and caulk joint using Type 1C sealant. **Area of Work: 1000 LF**
6. Remove cracked face brick masonry, repair back-up wall, stabilize back-up wall with pins, parge area and provide new face brick masonry with continuous vertical control joint, per Corner Brick Replacement Detail. **Area of Work: (2) corners, southeast and southwest, approximately 48 LF in height.**

#### Bulkhead Elevations

1. Cut minimum  $\frac{3}{4}$ " deep all brick mortar joints, prepare joints and repoint using Type O mortar. **Area of Work: 1080 SF**
2. Cut and remove caulking and filler at all window and door perimeter joints. Clean and prime joint, install new filler and caulk using Type 1C sealant. **Area of Work: 280 LF**

- B. Louvers – No deficiencies were noted. No work is required.
- C. Chimney(s) – (See Findings for Rear Elevations).
- D. Exterior Soffits: No exterior soffits exist at this building. No work is required.
- E. Awnings & Canopies: No awnings & canopies exist at this building. No work is required.
- F. Areaways (Drains, Gratings, Slabs, Railings, Stairs & Walls): No deficiencies were noted. No work is required.
- G. Loading Dock: No loading dock exists at this building. No work is required.
- H. Stairs/Ramps (Stairs/Ramps, Building Cheek/Flank Walls, Railings) - Cut minimum  $\frac{3}{4}$ " deep all brick mortar joints, prepare joints and repoint using Type O mortar. **Area of Work: 150 SF**
- I. Interior Damage  
Areas with wall and ceiling plaster damages were observed in many spaces, particularly on the upper floors. Cut and remove plaster, prepare area and re-plaster. Apply (3) coats of paint on entire wall and ceiling. **Area of Work: Plaster: 14,700; Paint: 23,850**



## J. Other Collateral Impacts

1. Plumbing: No plumbing components are impacted by the proposed exterior masonry work.
2. Mechanical: No mechanical components are impacted by the proposed exterior masonry work.
3. Electrical: Items such as existing loud speakers, fire alarm devices, intrusion alarm devices and electrical outlet boxes will be temporarily removed and stored for re-installation after completion of masonry work.
4. Other: No other collateral damage/impacts are anticipated due to the proposed exterior masonry work.

## 2. Resolution “A” Items: N/A

## 3. SCA Additional Recommended Items:

### 3.1 Roofing

#### Introduction

Existing roofing assemblies consist of either a Built-Up roof (BUR), copper standing seam metal roofing system or an IRMA roofing system. All existing roofing assemblies were installed in the year 1994 and the warranties expired in the year 2004. Partial roofing repairs on the Main Roof Number 1 were performed as part of the Exterior Modernization Rotted/Window Frames Project completed in the year 2006. Vegetative growth was observed throughout the Main Roof, particularly at existing roof drain locations and at the roof perimeter.

*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*

#### Roofing

- *Roofing: 3-Fair; loss of gravel at IRMA roofs, as well as major active roof leaks in instructional spaces are noted. Metal roof also noted with condition 3-Fair, but no deficiencies were recorded.*
- *Flashing: Not referenced in BCAS.*
- *Roof Drains: 2-Between Good and Fair; no deficiencies recorded.*



- *Leaders, Gutters, Downspouts: 2-Between Good and Fair; no deficiencies recorded.*
- *Hatches (Roof/Smoke): Noted not to exist at this building.*
- *Ladders and Ladder Safety Cages: No ladders are referenced in BCAS. Roof cages are noted not to exist at this building.*
- *Roof Barriers & Fences: 2-Between Good and Fair; minor rusting and deterioration was noted at railings/panels (roof barriers). No Roof fences are noted to exist at this building.*

### Roofing Specialties

- *Bulkhead/Penthouse:*
  - *Roofs: 4-Between Fair and Poor; minor leakage, with damaged/deteriorated ceiling plaster is noted.*
  - *Walls: 4-Between Fair and Poor; open joints are noted.*
  - *Windows: No reference in BCAS. Confirm if no windows occur at bulkheads/penthouses at this building.*
  - *Bulkhead Doors: No conditions referenced in BCAS.*
- *Cupola/Spires/Towers/Dormers: Noted not to exist at this building.*
- *Dunnage Steel: Noted not to exist at this building.*
- *Skylights/Roof Vents: 2-Between Good and Fair; no deficiencies recorded.*
- *Water Tank: Noted not to exist at this building.*

### Findings:

#### A. Roofing (Breakdown by Building and Roof Area)

##### 1. Roofing Membrane:

###### Roof No. 1:

Existing IRMA roofing assembly does not have an active warranty. Open seams and blistering of the roofing membrane were observed as typical conditions as well as vegetative growth at various locations. (Photo 30).

It appears that active water infiltration within the vicinity of deteriorated seams and blistering of existing base flashings align with deteriorated paint and plaster in areas directly below.



## Roof No. 2: (Bulkhead Roof)

Open seams were noted at the existing copper standing seam metal roof assembly causing water infiltration at the ceiling below. Also, a membrane patch was observed at one location. (Photo 31).

## Roof No. 3: (Bulkhead Roof)

Open seams were noted at the existing copper standing seam metal roof assembly causing water infiltration at the ceiling below.

## Roof No. 4 and Roof No. 5:

Existing built-up roofing assemblies do not have an active warranties. Open seams and blistering of the roofing membranes (wherever visible on the IRMA roof system) were observed as typical conditions. (Photos 32 and 33).

2. Flashing: Blistering of base flashing was noted throughout Roof Nos. 1, 4 and 5. (Photo 34).
3. Roof Drains: Vegetative growth was observed near drain locations. (Photo 35).
4. Leaders, Gutters, Downspouts at existing bulkheads: No deficiencies were noted.
5. Hatches (Roof/Smoke): No roof or smoke hatches exist at this building.
6. Ladders and Ladder Safety Cages: None exist at this building.
7. Roof Barriers & Fences: None exist at this building.

## B. Roofing Specialties

### 1. Bulkhead/Penthouse:

- Roof Numbers 2 and 3: (See Findings and Recommendations for Roof No. 2 and Roof No. 3 above).
  - Walls: (See section Bulkhead Elevations under Exterior Masonry).
  - Windows: (See section Bulkhead Elevations under Exterior Masonry).
  - Bulkhead Doors: Existing doors are in good condition.
2. Cupola/Spires/Towers/Dormers: None of these components exist at this building.
  3. Dunnage Steel: No dunnage steel exists at this building.
  4. Skylights/Roof Vents: No skylights exist at this building.



5. Water Tank: No water tank exists at this building.
- C. Interior Damage: Paint and plaster damage were observed inside of bulkheads.
- D. Other Collateral Impacts  
Plumbing
- E. Deteriorated flashing at existing roof drains and vent stacks was observed throughout all roofs. No leaks were reported or observed at this time.
- F. Mechanical
  1. Some of HVAC Gravity Ventilators installed on original roof curbs are too close to the parapet
    - GV-1 Located on main roof with 6'-0"x 10'-8" curb and 56" height of roof.(M-1)
    - GV-2 Located on main roof with 3'-0"x 4'-0" curb and 36" height of roof (M-2).
    - GV-3 Located on main roof with 3'-11"x 2'-11" curb and 20" height of roof(M-3)
    - GV-4 located on main roof with 6'-0"x 10'-8" curb and 56" height of roof(M-4)
    - GV-5 serving pipe chase and located on skylight(M-5)
  2. Fuel oil fill box and vent located on the corner of the building at 108<sup>th</sup> avenue (M-6).
  3. Gas meter room fresh air intake and exhaust were installed on the corner of the building at 108<sup>th</sup> avenue (M-7)
  4. DX split system serving MDF was installed on a concrete pad on roof. Per custodian comments, the unit isn't in working condition.(M-8)

#### Electrical

1. There are five (5) gravity fans installed on the original roof curbs. See photo E1.
2. There are seven (7) loud speakers, three (3) fire alarm and intrusion alarm devices, one (1) electrical outlet box and one (1) junction box mounted on the building facades. See photo E2 and E3.
3. There are seven (7) wall mounted exterior light fixtures at the entrances/exits, which are operational but passed their useful life. See photo E4.
4. Current site security lighting fixtures (7) are mounted on the parapets. See photo E5.



5. Conduits to provide power to the parapet mounted light fixtures are attached to the parapet wall. See photo E6.
6. There are few incoming utility cables attached to the façade of the school building of 155<sup>th</sup> street side. See photo E7.
7. There is a split air-condensing unit on the roof, which serves MDF room. According to the custodian, this unit is not in working condition. See photo E8.

## Recommendations:

### A. Roofing

#### 1. Roofing Membrane:

##### General:

- Assume all materials to be removed to contain asbestos.

##### Roof No. 1:

1. Roofing: Remove existing IRMA roofing system and associated base flashings down to screed and fill. Provide new insulated Hybrid Built-Up/SBS Roofing assembly with flashing system at all penetrations. Assume all materials to be removed to contain asbestos. **(10,400 SF)**
2. Cap Flashing: Remove and replace existing copper metal cap flashing to match existing. Provide new accessories such as wood nailers and blocking wherever required. **(740 LF)**. Face brick replacement: 740 LF x 6" high
3. Low Parapet Sections: Provide Roof Barrier Fence minimum 3'-6" above finished roof secured to low parapet sections. **(140 LF)**.

##### Roof No. 2 (Bulkhead Roof)

1. Roofing: Remove existing copper metal standing seam roofing system and associated base flashings down to screed and fill. Provide new insulated standing seam copper roof with gutter. **(260 SF)**

##### Roof No. 3: (Bulkhead Roof)

1. Roofing: Remove existing copper metal standing seam roofing system and associated base flashings down to screed and fill. Provide new insulated standing seam copper roof with gutter. **(260 SF)**



## Roof No. 4:

1. Roofing: Remove existing built-up roofing system and associated base flashings down to screed and fill. Provide new insulated liquid-applied resin waterproofing system with flashing system at all penetrations. Assume all materials to be removed to contain asbestos. **(150 SF)**
2. Cap Flashing: Remove and replace existing copper metal cap flashing to match existing. Provide new accessories such as wood nailers and blocking wherever required. **(52 LF)**. Face brick replacement: 740 LF x 6" high

## Roof No. 5:

1. Roofing: Remove existing built-up roofing system and associated base flashings down to screed and fill. Provide new insulated liquid-applied resin waterproofing system with flashing system at all penetrations. Assume all materials to be removed to contain asbestos. **(150 SF)**
2. Cap Flashing: Remove and replace existing copper metal cap flashing to match existing. Provide new accessories such as wood nailers and blocking wherever required. **(52 LF)**. Face brick replacement: 740 LF x 6" high
2. Flashing: Perimeter base flashing(s) and cap flashing(s) covered in Roofing.
3. Roof Drains: Roof drains covered in Plumbing section.
4. Leaders, Gutters, Downspouts: No work required.
5. Hatches (Roof/Smoke): No roof or smoke hatches exist at this building.
6. Ladders and Ladder Safety Cages: None existing at this building.
7. Roof Barriers & Fences: None existing at this building.

## B. Roofing Specialties

1. Bulkhead/Penthouse:
  - Roofs: See recommendations for Roof Nos. 2 and 3 above.
  - Walls: See recommendations for Bulkhead Elevations under Exterior Masonry.
  - Windows: See recommendations for Bulkhead Elevations under Exterior Masonry.



- Bulkhead Doors: Bulkhead sill pan flashing and threshold will require removal and replacement.
- 2. Cupola/Spires/Towers/Dormers: None of these components exist at this building. No work is required.
- 3. Dunnage Steel: No dunnage steel exists at this building. No work is required.
- 4. Skylights/Roof Vents: None exist at this building.
- 5. Water Tank: No water tank exists at this building. No work is required.

## C. Interior Damage

Cut and remove plaster, prepare area and re-plaster. Apply (3) coats of paint on entire wall and ceiling. **Area of Work: Plaster: 2,500; Paint: 10,000**

## D. Other Collateral Impacts

### Plumbing

1. On all roofs (#1 thru #5) scheduled to be replaced, remove and replace with total of eight (8) roof drains with cast iron domes, including new flashing and connect to existing storm leader piping at floor below ceiling as per schedule below:
  - (3) 5", (1) 4" and (2) 3" roof drains on Main Roof #1 and (2) 3" roof drains on Roof #4 & #5.
  - On all roofs scheduled to be replaced, remove and replace with new flashing around one (1) 5" and ten (10) 4" existing vent stacks.
  - Pressure-wash house sewers/drain lines up to the street mains.
  - Insulation, color-coding, identification marking on new piping and pressure test all new storm piping.

### Mechanical

1. HVAC Gravity Ventilators:
  - GV-1, GV-2, GV-3 & GV-4 to remain.
  - Remove GV-5 and provide a smoke hatch (See Arch. DWG)
2. Fuel oil box & vent to remain
3. Gas meter room FAI & exhaust pipes to remain



4. Remove and replace DX split system unit serving MDF room and provide new 2-Ton Mitsubishi unit. Provide temporary cooling during construction

## Electrical

1. All gravity fans will remain in place. Therefore, no electrical work is required for these fans.
2. Remove existing loud speakers (7), fire alarm and intrusion alarm devices (3), electrical outlet box (1) and junction box (1) with associated low voltage wire/conduit (approximately 300 LF) from the exterior wall during the masonry work. Temporarily support and protect throughout the exterior work and re-install in the original location after the work is done.
3. Existing wall mounted exterior light fixtures shall be removed and replaced with seven (7) new wall mounted light fixtures as per SCA standards at the exact same location as existing after masonry work is completed. Use existing circuit/wire/conduit to provide power. Extend wire/conduit if required.
4. Five (5) parapet mounted light fixtures will stay in place. Protect these light fixtures during the work. Two (2) parapet mounted light fixtures with mounting brackets shall be removed from the parapet wall, stored and re-installed at the end of the work. Relocate these light fixtures as required. Extend wire/conduit (approximately 25LF 3#12 in  $\frac{3}{4}$ "C) if required.
5. Conduits (approximately 600 LF) which were run to provide power to the parapet mounted light fixtures, need to be detached from the parapet wall, protected during the masonry work and attach to the parapet wall upon completion of the work.
6. Detach the utility cables from exterior wall and support temporarily for the masonry work. Do not disconnect. Reattach to the exterior wall after the masonry work is completed.
7. Disconnect the power from the existing split air-condensing unit with associated wire/conduit to the nearest junction box. Provide new 30A disconnect switch for the new split air-condensing unit and provide power using same circuit. Extend wire/conduit as required (50 LF of 3#10 in  $\frac{3}{4}$ "C).



## 3.2 Parapets

### Introduction

Areas within existing parapets were renovated as part of the Exterior Modernization Project which took place in the year 2004. Overall they appear to be in good condition with the exception of the lower parapet sections on the Main Roof which fall below the minimum required height of forty two inches above the finished roof, as per NYC Building Code. (Photos S21 & S22). Parapet coping stone joints were found to be open at many locations. (Photo S6).

*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*

- *Parapets: 3-Fair; open brick joints are noted.*
- *Copings: 2-Between Good and Fair; no deficiencies recorded.*
- *Cornices: Noted not to exist at this building.*

### Findings:

- A. Parapets: Low parapet sections at Roof No. 1 fall below the minimum required height of forty two inches above the finished roof, as per NYC Building Code.
- B. Copings: Parapet coping stone joints were found to be open at many locations.
- C. Cornices: No cornices exist at this building.
- D. Interior Damage: No interior damage due to parapet deficiencies was reported or observed.
- E. Other Collateral Impacts
  1. Plumbing: None
  2. Mechanical: None
  3. Electrical: None



### **Recommendations:**

- A. Parapets: A railing attached to the inboard side of low sections of parapets at Roof No. 1 will be required. (This work item will be covered in the 'Roof' section).
- B. Copings: Coping stone transverse joints to be cut and resealed. (This work item will be covered in the 'Exterior Walls' section).
- C. Cornices: No cornices exist at this building. No work is required.
- D. Interior Damage
- E. Other Collateral Impacts
  - 1. Plumbing: No work required.
  - 2. Mechanical: No work required.
  - 3. Electrical: No work required.

### **3.3 Description: Windows**

#### **Introduction**

The building underwent a Window Replacement project during the year 2004. All existing double hung windows, including exterior window guards were removed and replaced at that time.

*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*

- *Windows: 2-Between Good and Fair; no deficiencies recorded.*
- *Exterior Guards: 2-Between Good and Fair; no deficiencies recorded.*
- *Shades: No BCAS rating is provided.*
- *Lintels: 2-Between Good and Fair; no deficiencies recorded.*

#### **Findings:**

- A. Windows: No deficiencies were noted.
- B. Exterior Guards: No deficiencies were noted.
- C. Shades: No deficiencies were noted.



- D. Lintels: No deficiencies were noted.
- E. Interior Damage: No deficiencies were noted.
- F. Other Collateral Impacts
  - 1. Plumbing: None
  - 2. Mechanical: None
  - 3. Electrical: None

**Recommendations:** No work is required at this time. Operational issues should be referred to DSF for maintenance.

### **3.4 Description/LLW#: Exterior Doors**

#### **Introduction**

Per the School Custodian, several exterior hollow metal doors are exhibiting operational issues as well as physical deficiencies. It is recommended that these conditions be referred to DSF for maintenance.

*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*

- *Doors & Frames: 3-Fair; major deterioration at metal clad doors and frames.*
- *Door Hardware: 3-Fair; no deficiencies were noted.*
- *Transom/Side Lights: 2-Between Good and Fair; No deficiencies recorded.*
- *Lintels: 2-Between Good and Fair; No deficiencies recorded.*

### **3.5 Description: (Below Grade) Flood Elimination**

#### **Introduction**

Currently, there is a Flood Elimination project which is scheduled to begin in 2017 and will address all issues pertaining to water infiltration occurring below grade. (Refer to projects Design Number D010086, LLW Number 043946, Flood Elimination and Design Number D016661, LLW Number 096129 Reinforcing Support Elements).



*The Building Condition Assessment Survey (BCAS) notes the following condition ratings and deficiencies:*

- *Foundation Walls: 2-Between Good and Fair; no deficiencies recorded.*
- *Floor Slab (at Basement/Cellar): 5-Poor; water infiltration into electrical panel room through the concrete slab on grade into non-instructional space is noted. Also concrete cracks/spalls and exposed reinforcing is noted.*
- *Columns/Beams (at Basement): 3-Fair; deteriorated concrete fireproofing at steel columns and beams is noted.*
- *Areaways: These components are described under “Exterior Masonry”*
- *Vaults/Bunkers:*
  - a. *Foundation Walls: 2-Between Good and Fair; cracks and spalls are noted near the ash hoist.*
  - b. *Slab Structure: 3-Fair; deteriorate concrete fireproofing is noted at steel columns and beams near the ash hoist.*
  - c. *Vault/Ash Hoist Doors and Framing: 5-Poor; deteriorated/damaged vault/ash hoist doors and framing, with water infiltration is noted.*
- *Stairs/Ramps: These components are described under “Exterior Masonry”*

**Findings and Recommendations:** (Refer to projects Design Number D010086, LLW Number 043946, Flood Elimination and Design Number D016661, LLW Number 096129 Reinforcing Support Elements).

## END OF FINDINGS & RECOMMENDATIONS

# Interior Active Leak Record Form

Date of Template:

1/3/2022

*This Form to be completed by the Design Architect/Engineer and submitted to the School Custodian for input and concurrence. Include form in the appendix of the Initial Building Envelope Field Report and the appendix of the Scope Report.*

<b>School Name (Boro): PS 121</b>	<b>Building ID: Q121</b>
<b>School Address: 126-10 109 Avenue, Queens, NY 11420</b>	<b>School District: 28</b>
<b>Person(s) Performing Room Inspection (print): Ben Townsend (WDP), Mark Villasin (SCA), Chung Zhao (SCA)</b>	<b>Signature: _____ Date: 10/11/18</b>
<b>Custodial Engineer (print): John Griffith, C.E. &amp; Marshall (Fireman)</b>	<b>Signature: _____ Date: 10/18/18</b>

ROOM #/ NAME	Condition Description	Active (Bulk) Leak? (Y/N?)	Bubbling Plaster and/or Paint only? (Y/N)	Observation Time / Weather	Repair History	Additional Notes
	<i>Describe conditions, location(s) of damage, and if on-going or getting worse. In the adjacent columns, indicate if 1) "Active (Bulk) Leak(s)": interior surfaces damp when touched and/or water is running or ponding; or 2) Bubbling Plaster and/or Paint only, but no water leaks have been observed.</i>	<i>Interior surfaces damp when touched and/or water is running or ponding?</i>	<i>No active (bulk) water leaks observed</i>	<i>Have leaks been noticed over a period of days / months/ years? Do active (bulk) leaks only occur during or following rain events? How long afterward do leaks, dampness, and/or damage appear?</i>	<i>Has interior water damage been repaired at this location in the past? How long ago? How many times? What repairs were performed?</i>	<i>Refer to Photos, if available</i>
507, 508, 512, 513	Damage on ceiling around drain above; blistering plaster	Yes	No	On-going drip from ceiling during rains	Repairs were attempted to fix the roof membrane interface with drain, unsuccessfully	<b>Refer to Photo #1</b>
517	Damage on ceiling around drain above; blistering plaster	No	Yes	Does not drip during rain	None	<b>Refer to Photo #2</b>
Hallway in from of 5th Floor bathroom	Damp ceiling, water in light fixture	Yes	No	Water in fixture during rain	None	
2nd Floor Girls Bathroom, 150, 151	Spaces under the small vestibule roofs have ceiling damage	Yes	No	Drips when rains	None	<b>Refer to Photos #3 &amp; 4</b>
Exit 2, East Stair, 1st Floor	Water stains from window	Yes	No	Leakage when raining	None	<b>Refer to Photo #5</b>

# Interior Active Leak Record Form

Date of Template:

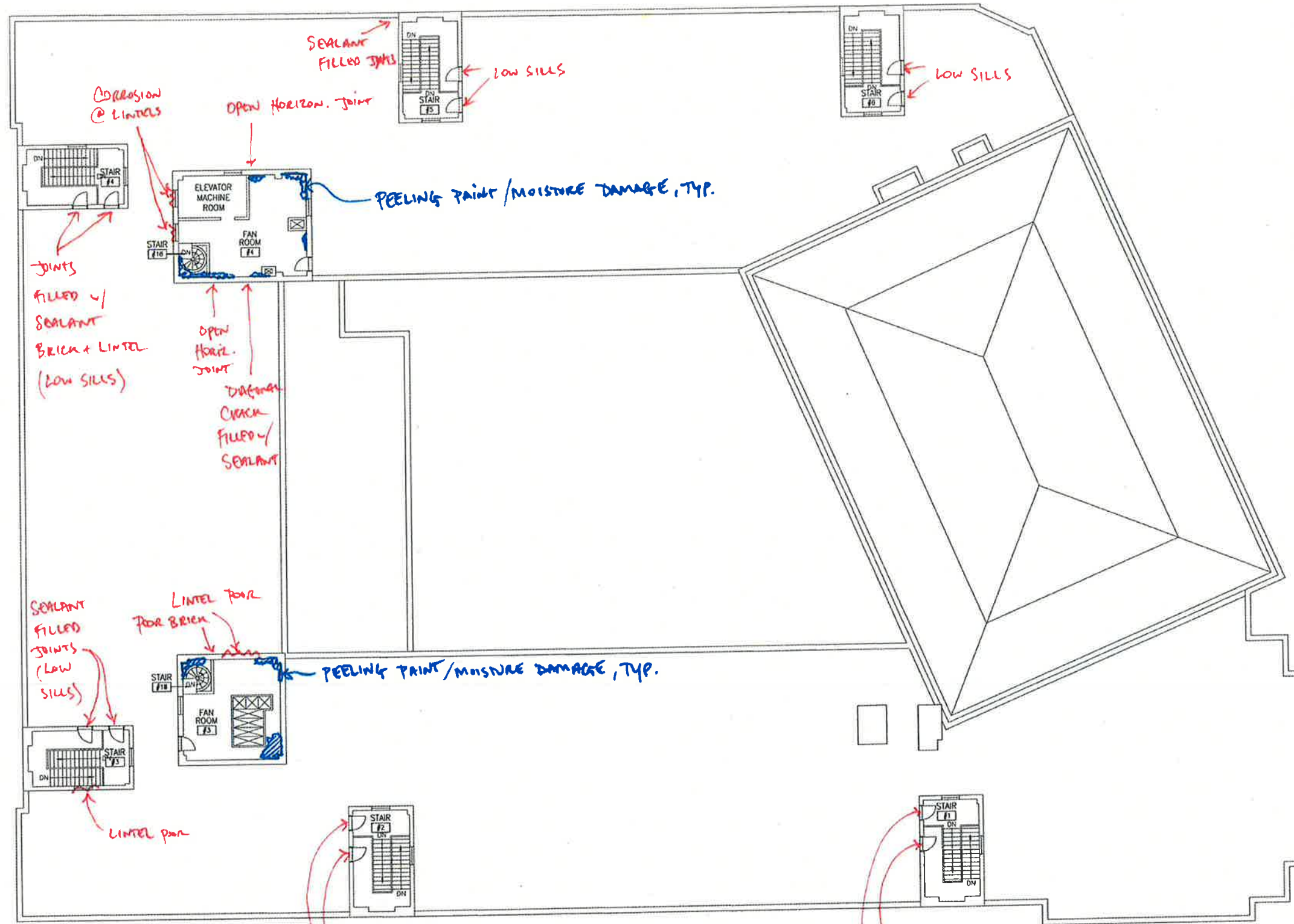
1/3/2022

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	<b>Date: 10/11/18</b>
<b>Custodial Engineer (print): John Griffith, C.E. &amp; Marshall (Fireman)</b>	<b>Signature:</b>
	<b>Date: 10/18/18</b>

<b>ROOM #/ NAME</b>	<b>Condition Description</b>	<b>Active (Bulk) Leak? (Y/N?)</b>	<b>Bubbling Plaster and/or Paint only? (Y/N)</b>	<b>Observation Time / Weather</b>	<b>Repair History</b>	<b>Additional Notes</b>
5th Floor, Stair C	Leak into Hallway below crack	Yes	No	Only during very heavy rain	None	Refer to Photo #6
512	Damage at ceiling beam; blistered plaster	No	Yes	Damage has been present for a long time; no leakage noted	None	Refer to Photo #7





**BULKHEAD LEVEL PLAN**  
DAMAGE MAP



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Lorraine Grillo

Board of Trustees  
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George D. Ramsey, P.E., LEED A.P., Director, Technical Standards  
Stacey Spotts-Thom, Director, Operations Support

Consultants:

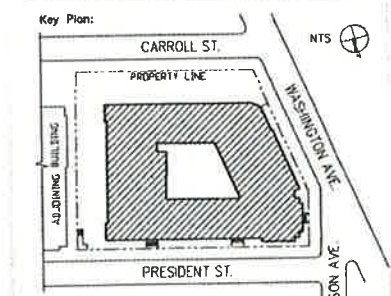
22 AVENUE OF THE AMERICAS  
NEW YORK, NY 10038  
TEL: 212 606 1800  
FAX: 212 606 1728

Preliminary  
Not For Construction

NOTE: Drawing may be printed at reduced scale

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No.	Date	Revision



Block # 1188 Lot # 1

SCA Design Manager: CLEVELAND MORRISON

Project Architect/Engineer: JOHN GALETTA, RA

Discipline Lead: LORIE RIDOLE, RA

Designer: MIKE ORMAN, RA

Drawn by: M. ORMAN

Checked by: LORIE RIDOLE, RA

Design No or LWF No: D016968	Facility Code: K600	Date: 00/00/200x
---------------------------------	------------------------	---------------------

Project:  
**CLARA BARTON HS, BROOKLYN**  
EXTERIOR MASONRY

Address:  
901 CLASSON AVENUE  
BROOKLYN, NY 11225

Drawing Title:  
**BULKHEAD LEVEL PLAN**  
DAMAGE MAP

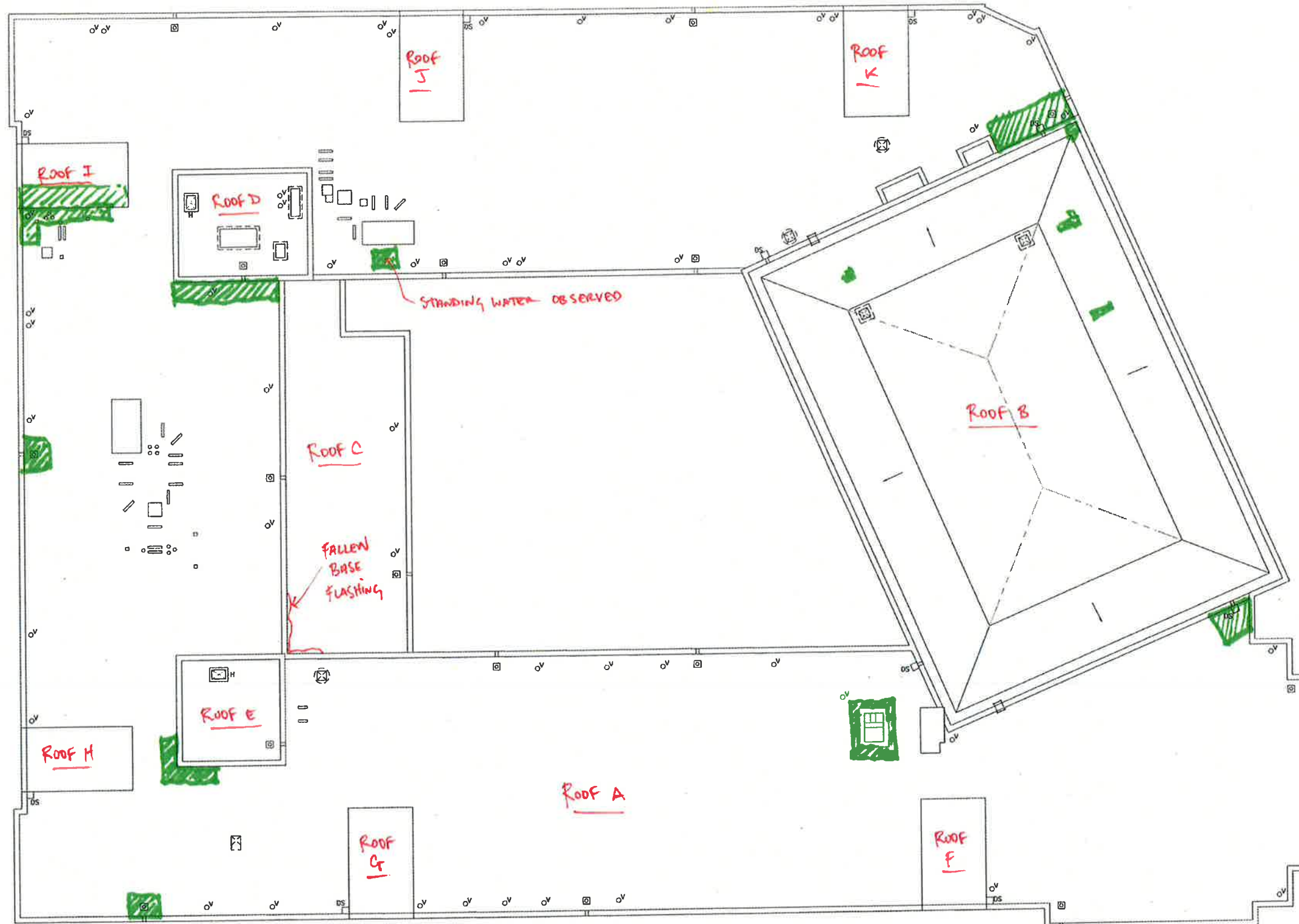
Drawing No.:


**SK02**

Sheets in Contract Set:  
000 of xxx

Sheets in D08 Set:  
000 of xxx

CLARA BARTON HS\_Masonry/PA-01 INWESTER/0204\_10/07/09/15 - 10:21am eba.e



**KEY**  
 : AREA OF ROOF PATCH

**ROOF PLAN**  
**DAMAGE MAP**

NOTE: SEE 4<sup>TH</sup> FLOOR PLAN FOR INTERIOR DAMAGE



President & CEO  
 Lorraine Grillo

Board of Trustees  
 Director Carmen Fortis, Chairman  
 Curtis A. Harle  
 Emily A. Yousoof



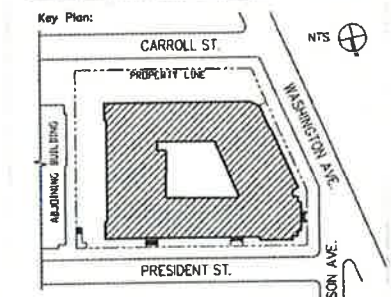
Architecture & Engineering  
 E. Bruce Barrett, R.A., LEED AP, Vice President  
 Dan R. Abner, P.E., Senior Director, Design Consultant Management  
 Stanley Dohr, R.A., Director, Quality Control & Construction Support  
 Maria A. Gomez, P.E., LEED AP, Director, A/E In-House Design  
 George D. Roumey, P.E., LEED AP, Director, Technical Standards  
 Stacey Spinn-Thorn, Director, Operations Support



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 LICENSED PROFESSIONAL ENGINEER, AND THE ENGINEER STAMPS SUCH CHANGES

No	Date	Revision



Block # 1188	Lot # 1
SCA Design Manager:	CLEVELAND MORRISON
Project Architect/Engineer:	JOHN GALETTA, RA
Discipline Lead:	LORIE RIDDLE, RA
Designer:	MIKE ORMAN, RA
Drawn by:	M. ORMAN
Checked by:	LORIE RIDDLE, RA

Design No or LWF No.:	Facility Code:	Date:
D01698B	K600	00/00/200x

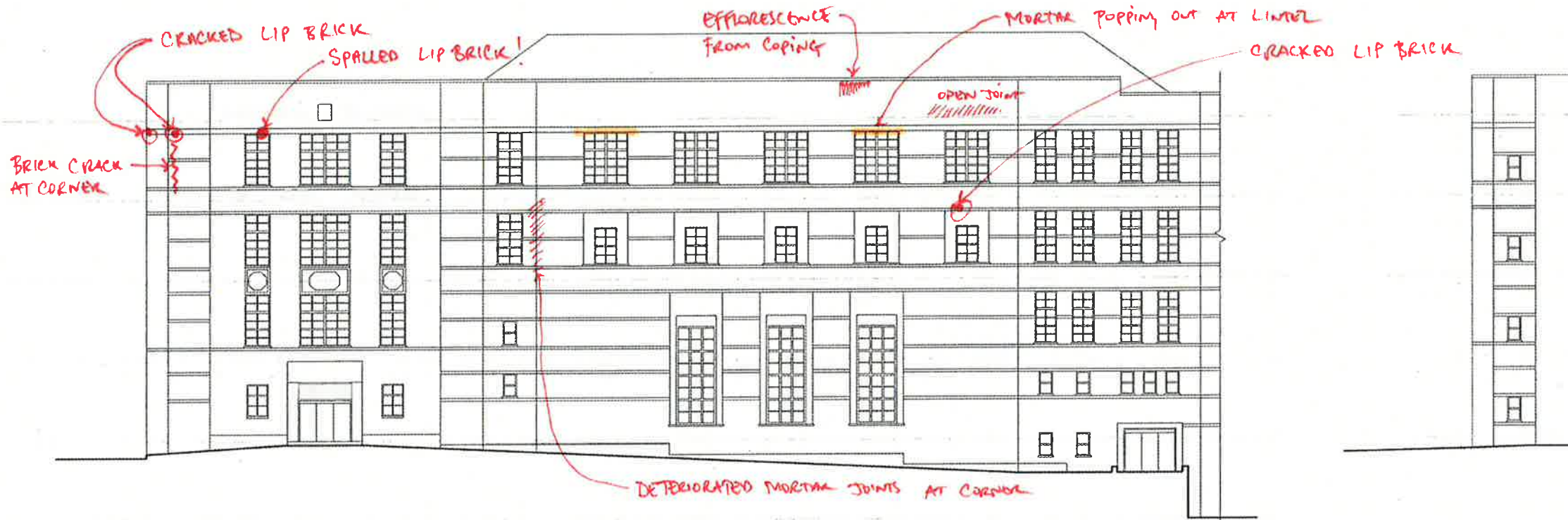
Project:  
 CLARA BARTON HS, BROOKLYN  
 EXTERIOR MASONRY

Address:  
 901 CLASSON AVENUE  
 BROOKLYN, NY 11225

Drawing Title:  
 ROOF PLAN  
 DAMAGE MAP

Drawing No.:	SK03
Sheets in Contract Set:	000 of XXX
Sheets in DOB Set:	000 of XXX

(Clara Barton HS\_Masonry)01  
 11/20/2013 10:20:00 AM  
 07/08/13 - roof plan.dwg - roof plan.dwg

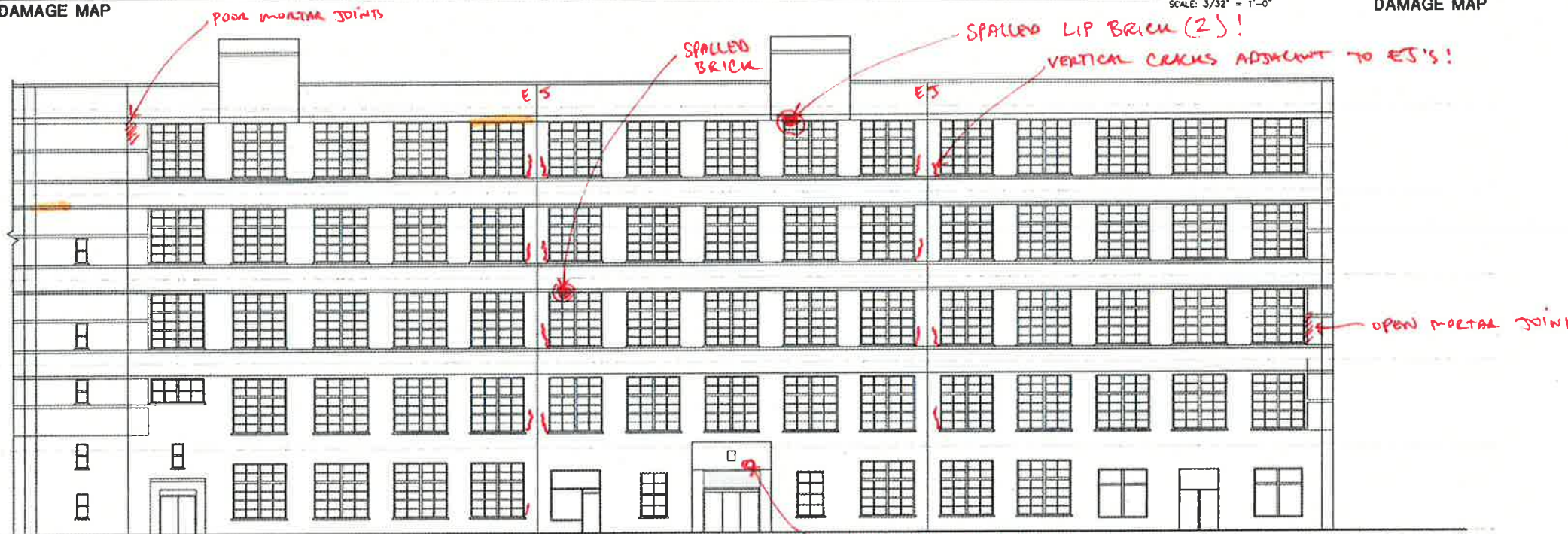


**WEST ELEVATION**  
DAMAGE MAP

NOTE: NO LEAKS OBSERVED ON INTERIOR WALLS

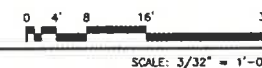


**WEST RETURN**  
DAMAGE MAP



**SOUTH ELEVATION**  
DAMAGE MAP

NOTE: NO LEAKS OBSERVED ON INTERIOR WALLS



**KEY**  
[Yellow brushstroke] = CORROSION AT LINTEL

President & CEO  
Lorraine Grillo

Board of Trustees  
Dorcelor Gomes Fortes, Chairman  
Curtis A. Harris  
Emily A. Youseuf



Architecture & Engineering  
E. Bruce Barrett, R.A. LEED A.P., Vice President  
Eon R. Abneef, P.E., Senior Director, Design Consultant Management  
Stanley Dohr, R.A., Director, Quality Control & Construction Support  
Mario A. Gomez, P.E., LEED A.P., Director, A/E In-House Design  
George D. Roussey, P.E., LEED A.P., Director, Technical Standards  
Stacey Spann-Thorn, Director, Operations Support

Consultants:



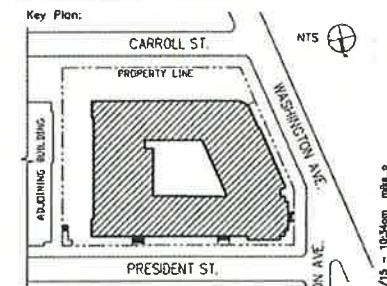
10 AVENUE OF THE AMERICAS  
NEW YORK, NY 10018  
TEL: 212 868 1000  
FAX: 212 868 0728

Preliminary  
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NOTE: Drawing may be printed at reduced scale

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No.	Date	Revision



Block # 1188	Lot # 1	
SCA Design Manager:	CLEVELAND MORRISON	
Project Architect/Engineer:	JOHN GALETTA, RA	
Discipline Lead:	LORIE RIDGLE, RA	
Designer:	MIKE DRWAN, RA	
Drawn by:	M. ORMAN	
Checked by:	LORIE RIDGLE, RA	
Design No. or LHM No.:	Facility Code:	Date:
D016968	K600	00/00/200x

Project:  
CLARA BARTON HS, BROOKLYN  
EXTERIOR MASONRY

Address:  
901 CLASSON AVENUE  
BROOKLYN, NY 11225

Drawing Title:  
ELEVATIONS - 1  
DAMAGE MAP

Drawing No.:

**SK04**

Sheets in Contract Set:  
000 of XXX

Sheets in DOR Set:  
000 of XXX

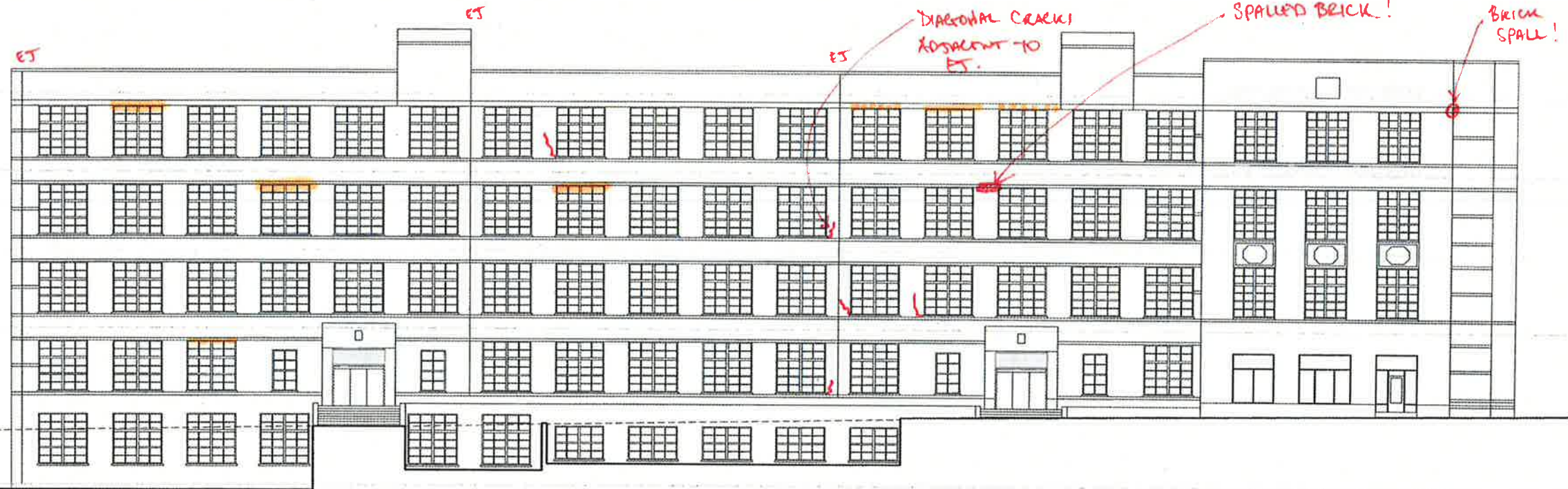
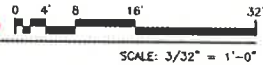
(Clara Barton HS Masonry) V1  
 L:\2000\1002001  
 WEST0210201.dwg  
 07/08/15 - 10:34am mla\_e

MISALIGNED BRICK / BULGE AT RELIEVING ANGLES, SOME PRIOR REPAIRS



**EAST ELEVATION**  
DAMAGE MAP

NOTE: NO LEAKS OBSERVED ON INTERIOR WALLS



**NORTH ELEVATION**  
DAMAGE MAP

NOTE: NO LEAKS OBSERVED ON INTERIOR WALLS



**KEY**  
CORROSION AT LINTEL

President & CEO  
Lorraine Grillo  
Board of Trustees  
Chancellor Carmen Farfa, Chairperson  
Curtis A. Horris  
Emily A. Youssouf

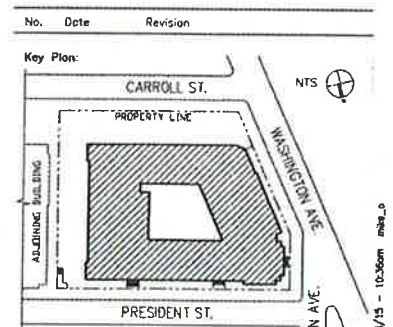


Architecture & Engineering  
E. Bruce Borrelli, RA, LEED AP, Vice President  
Dan R. Abner, P.E., Senior Director, Design Consultant Management  
Stanley Daler, R.A., Director, Quality Control & Construction Support  
Mark A. Gomez, P.E., LEED AP, Director, Add-In-House Design  
George O. Rosaway, P.E., LEED AP, Director, Technical Standards  
Stacey Spoon-Thorn, Director, Operations Support



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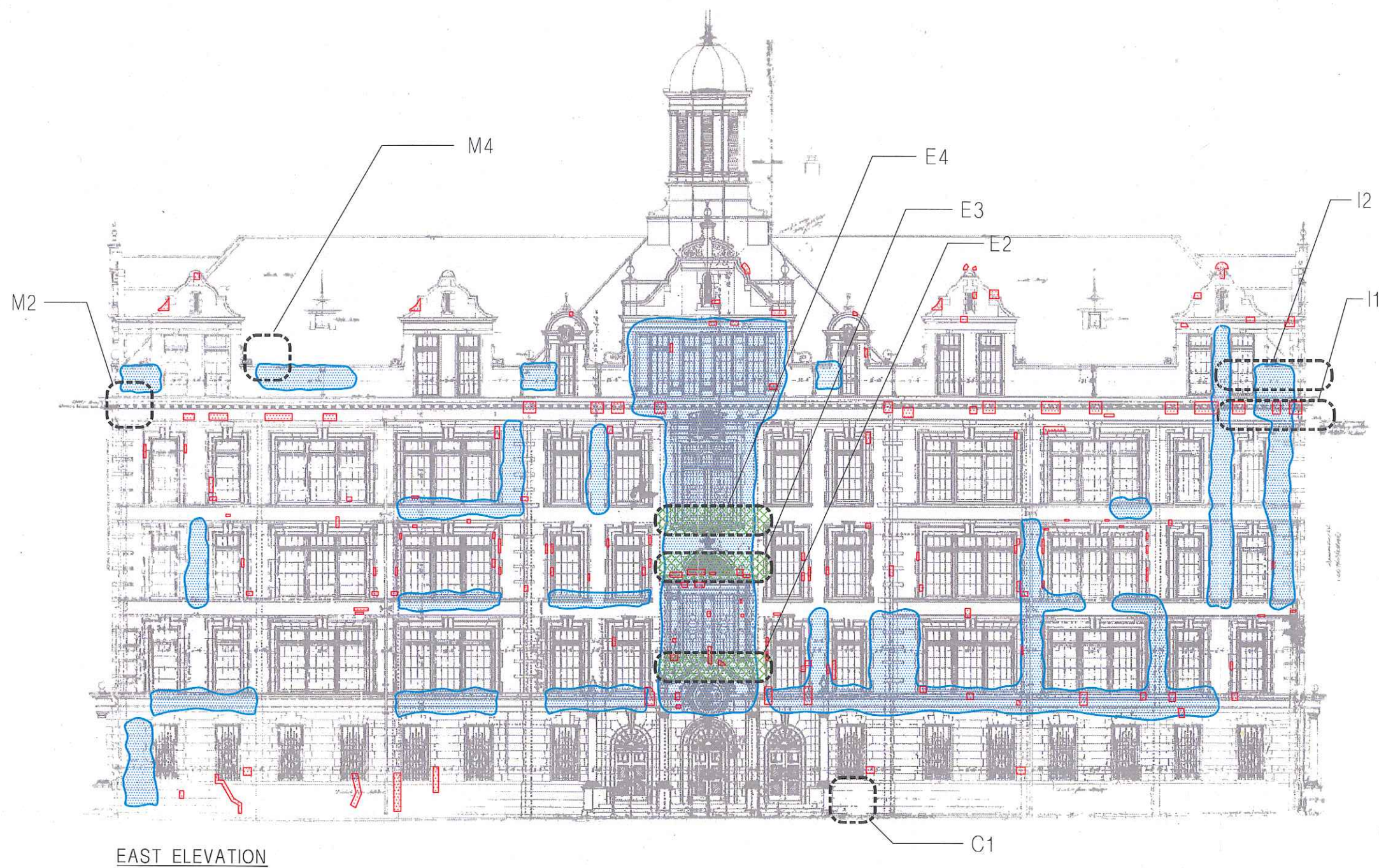
Block # 1188 Lot # 1  
SCA Design Manager: CLEVELAND MORRISON  
Project Architect/Engineer: JOHN CALETTA, RA  
Discipline Lead: LORE PROOLE, RA  
Designer: MIKE DRIMAN, RA  
Drawn by: M. DRIMAN  
Checked by: LORE PROOLE, RA





Design No or LHM No.: D018968 Facility Code: K600 Date: 00/00/200x  
Project:  
CLARA BARTON HS, BROOKLYN  
EXTERIOR MASONRY  
Address:  
901 CLASSON AVENUE  
BROOKLYN, NY 11225

Drawing Title:  
ELEVATIONS - 2  
DAMAGE MAP

Drawing No.: SK05  
Sheets in Contract Set: 000 of XXX  
Sheets in DOB Set: 000 of XXX

L:\2009\1020901 (Carmen Farfa - RE\_Masonry) - 101 10/20/09 10:00 AM Photo Positive Item 10009 - elevations-2.dwg 07/08/15 - 10:05am mha\_3



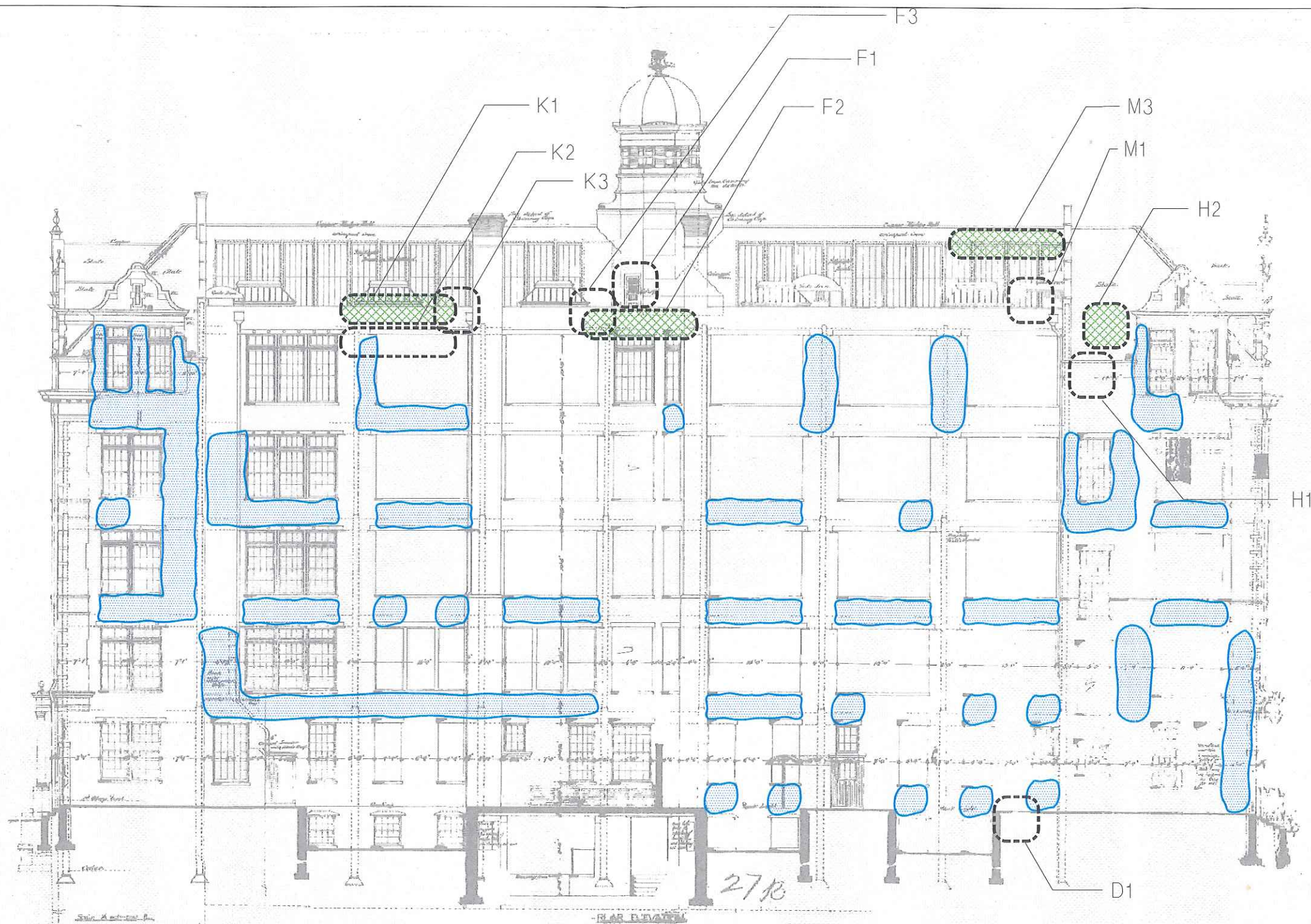
LEGEND	
	INTERIOR DAMAGE AT WALL
	EXTERIOR MASONRY CRACK
	SPRAY TEST LOCATION POSITIVE
	SPRAY TEST LOCATION NEGATIVE







PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'





REAR ELEVATION

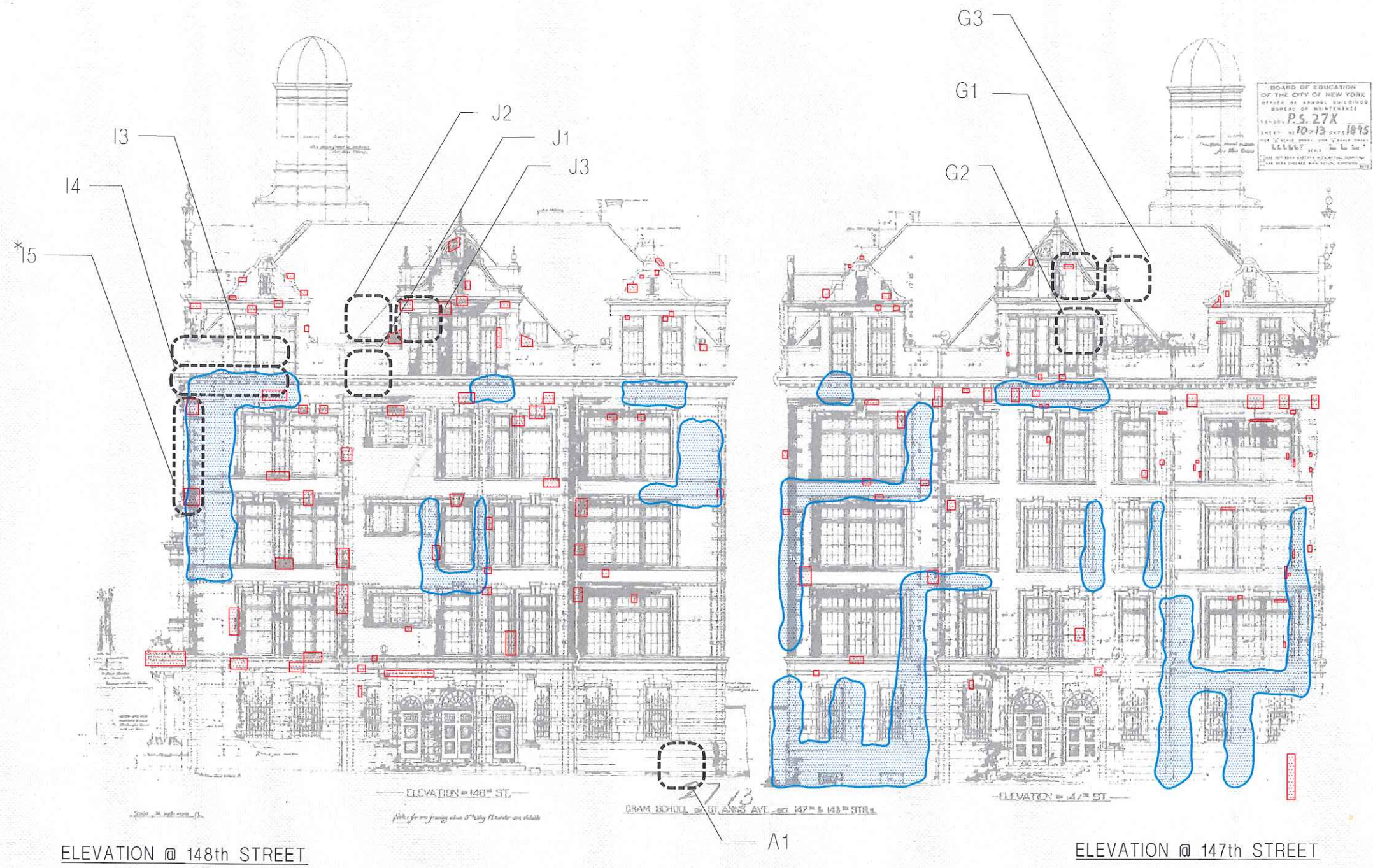
LEGEND			
	INTERIOR DAMAGE AT WALL		SPRAY TEST LOCATION NEGATIVE
	EXTERIOR MASONRY CRACK		SPRAY TEST LOCATION POSITIVE



PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'









ELEVATION @ 148th STREET

ELEVATION @ 147th STREET

**LEGEND**

	INTERIOR DAMAGE AT WALL		SPRAY TEST LOCATION NEGATIVE
	EXTERIOR MASONRY CRACK		SPRAY TEST LOCATION POSITIVE

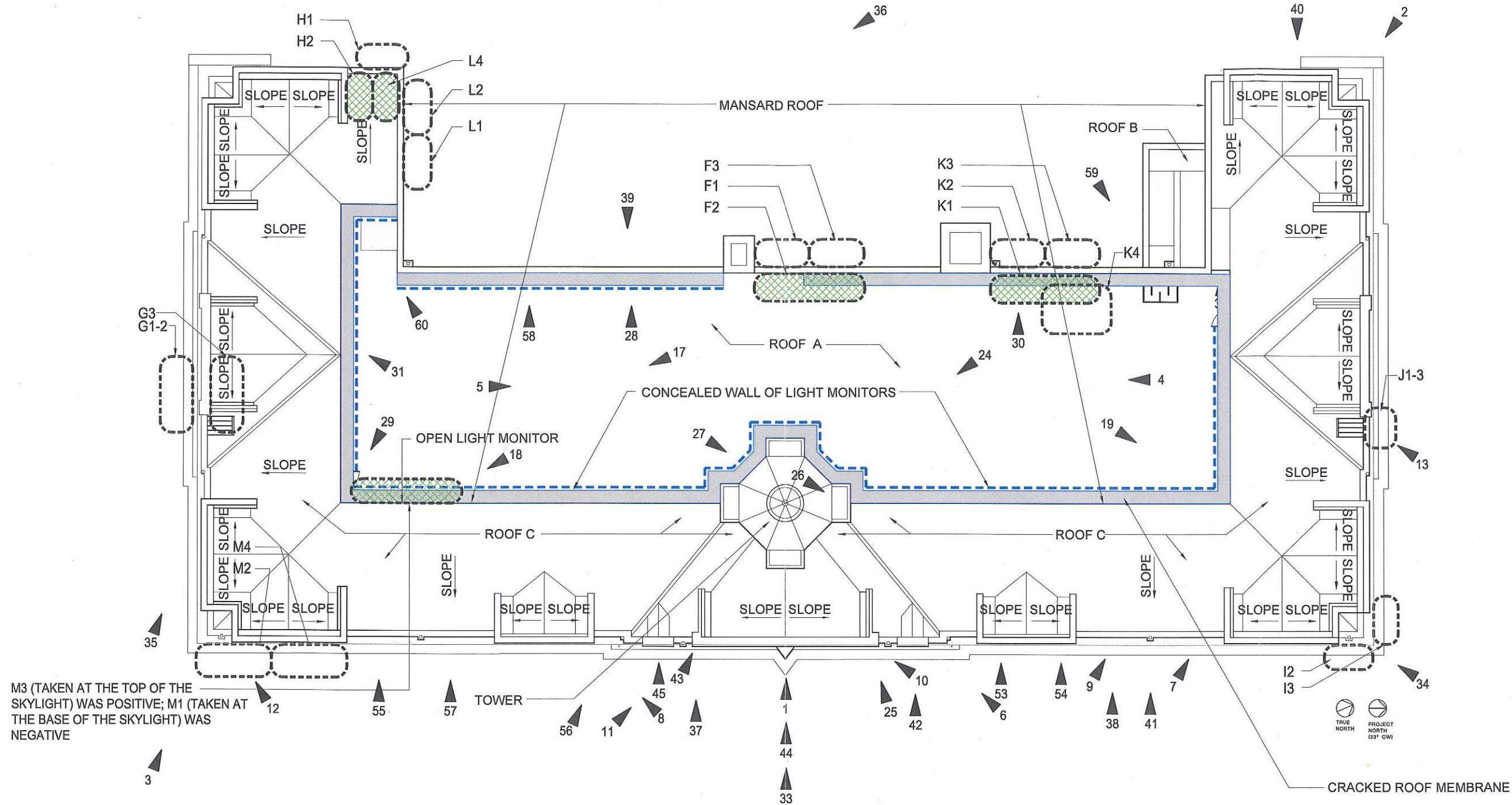
\* NOTE: DETERIORATED CAULK JOINT WAS NOT TESTED AT THIS LOCATION



PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'





ROOF PLAN

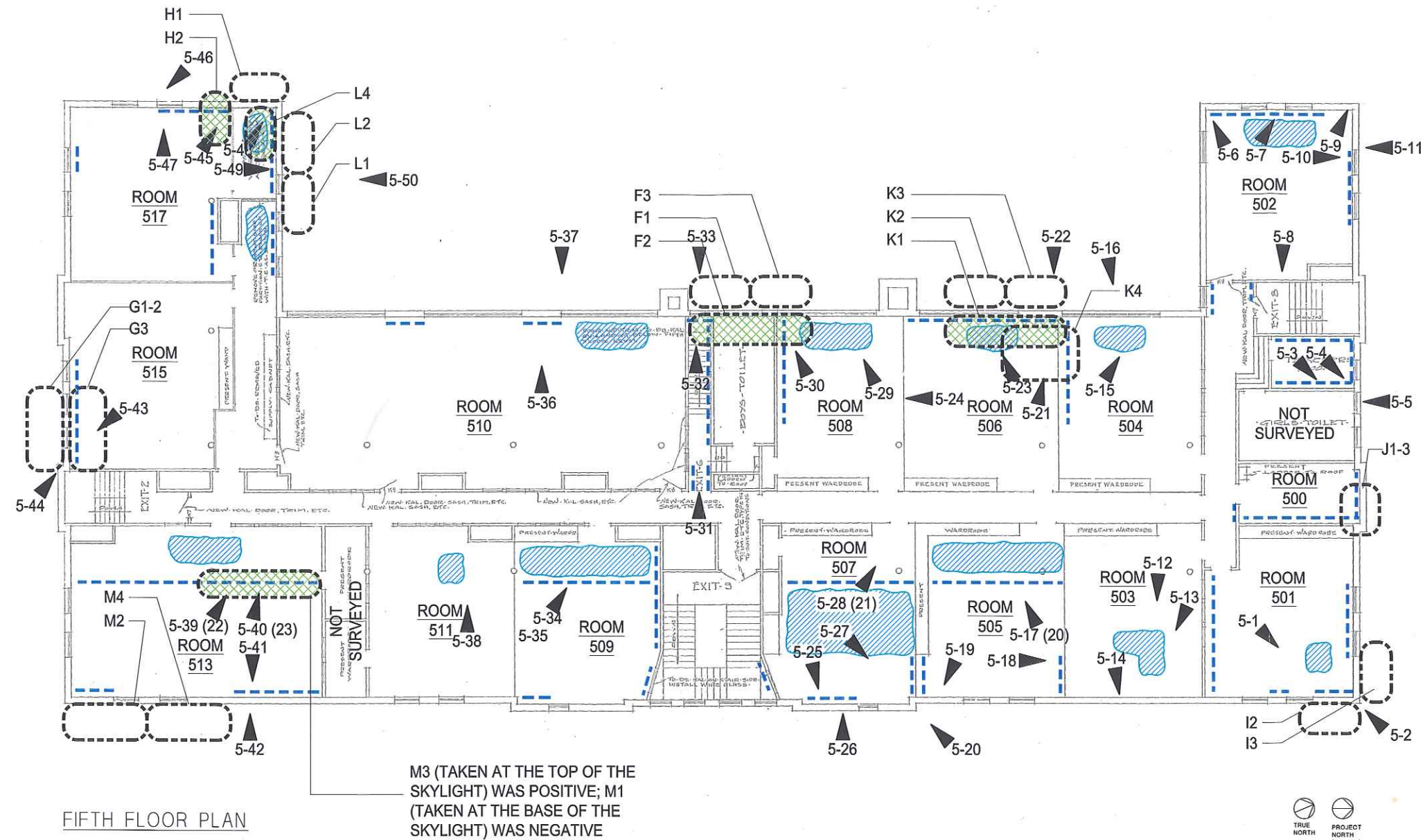
LEGEND	
	INTERIOR DAMAGE AT FLOOR
	INTERIOR DAMAGE AT CEILING
	DAMAGE AT WALL AND FLASHING
	SPRAY TEST LOCATION NEGATIVE
	SPRAY TEST LOCATION POSITIVE



PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'





FIFTH FLOOR PLAN

M3 (TAKEN AT THE TOP OF THE SKYLIGHT) WAS POSITIVE; M1 (TAKEN AT THE BASE OF THE SKYLIGHT) WAS NEGATIVE

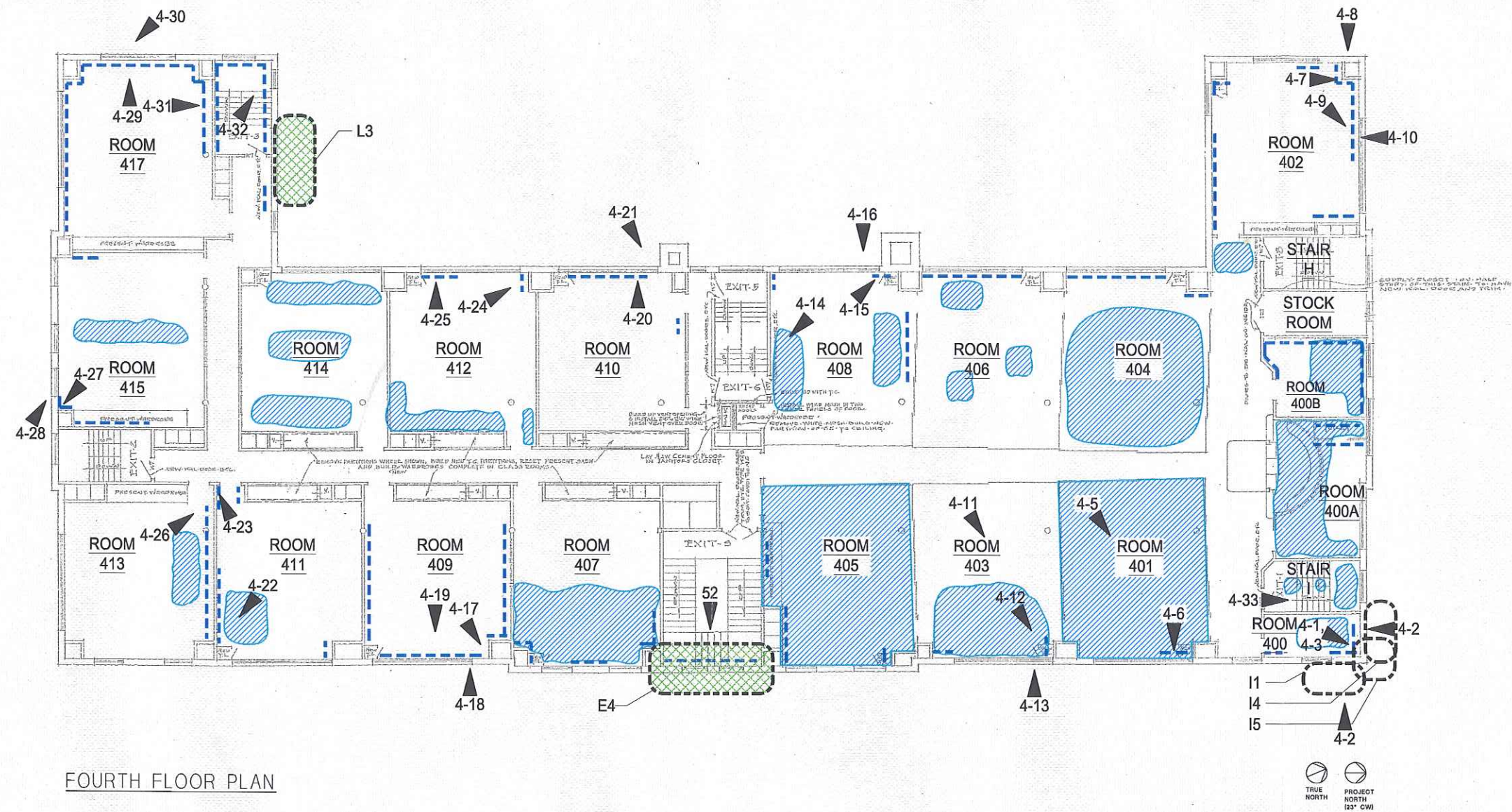
LEGEND	
	INTERIOR DAMAGE AT FLOOR
	INTERIOR DAMAGE AT CEILING
	INTERIOR DAMAGE AT WALL
	SPRAY TEST LOCATION NEGATIVE
	SPRAY TEST LOCATION POSITIVE



PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'





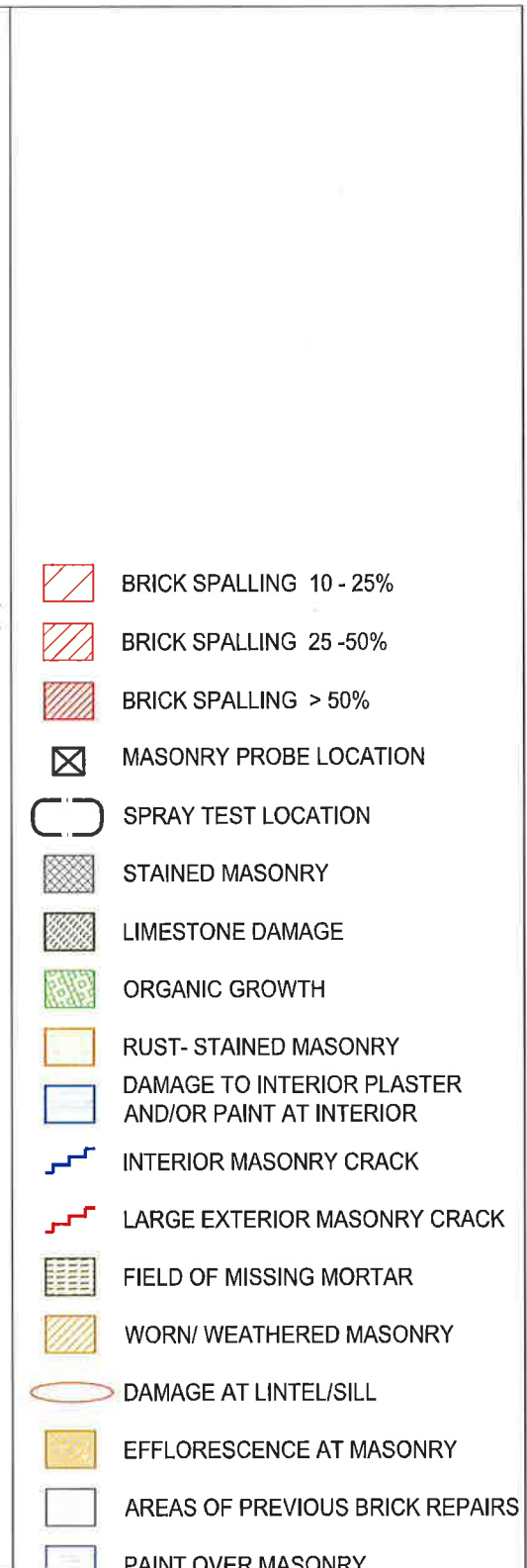
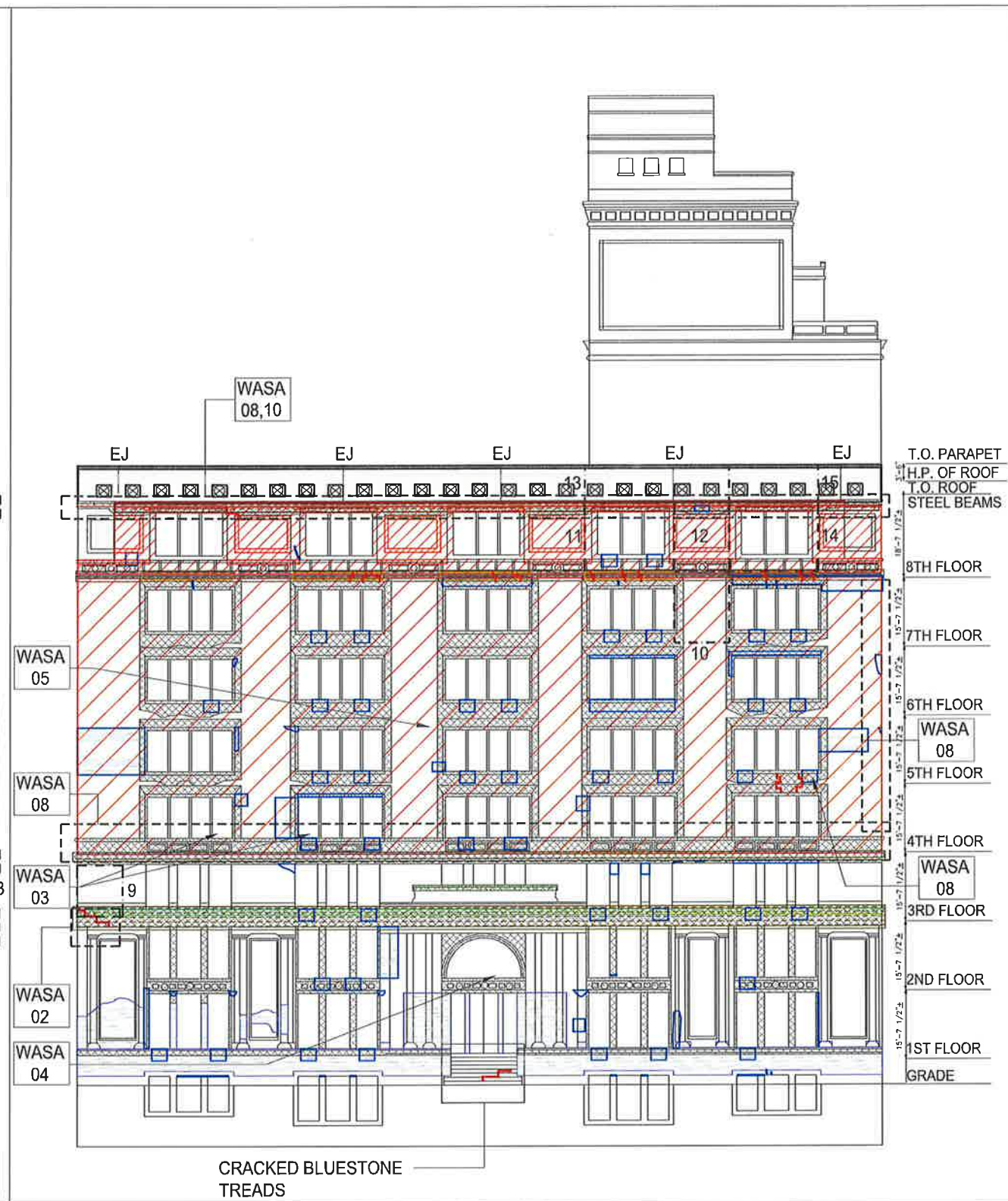
LEGEND	
	INTERIOR DAMAGE AT FLOOR
	INTERIOR DAMAGE AT CEILING
	INTERIOR DAMAGE AT WALL
	SPRAY TEST LOCATION NEGATIVE
	SPRAY TEST LOCATION POSITIVE



PS 277 BRONX  
 DAMAGE SURVEYS: JULY 2008  
 ILVA WILSON

1/20" = 1'





**A1 NORTH ELEVATION (E 17TH ST)**

**A2 WEST ELEVATION (IRVING PLACE)**

1/30"= 1'-0"

1/30"= 1'-0"

LEGEND



WASHINGTON IRVING HS  
 DAMAGE SURVEYS: 03/22/2013, 03/25/2013-3/28/2013, 4/01/2013-4/03/2013, & 4/15/2013  
 DRAWING ISSUE DATE: 04/29/2013

**NELLIGAN WHITE ARCHITECTS**  
**NW.**  
 Nelligan White Architects n.c.  
 20 West 20th Street  
 Suite 1100  
 New York, NY 10011  
 TEL 212 675 0500  
 www.nelliganwhite.com

**SK001**