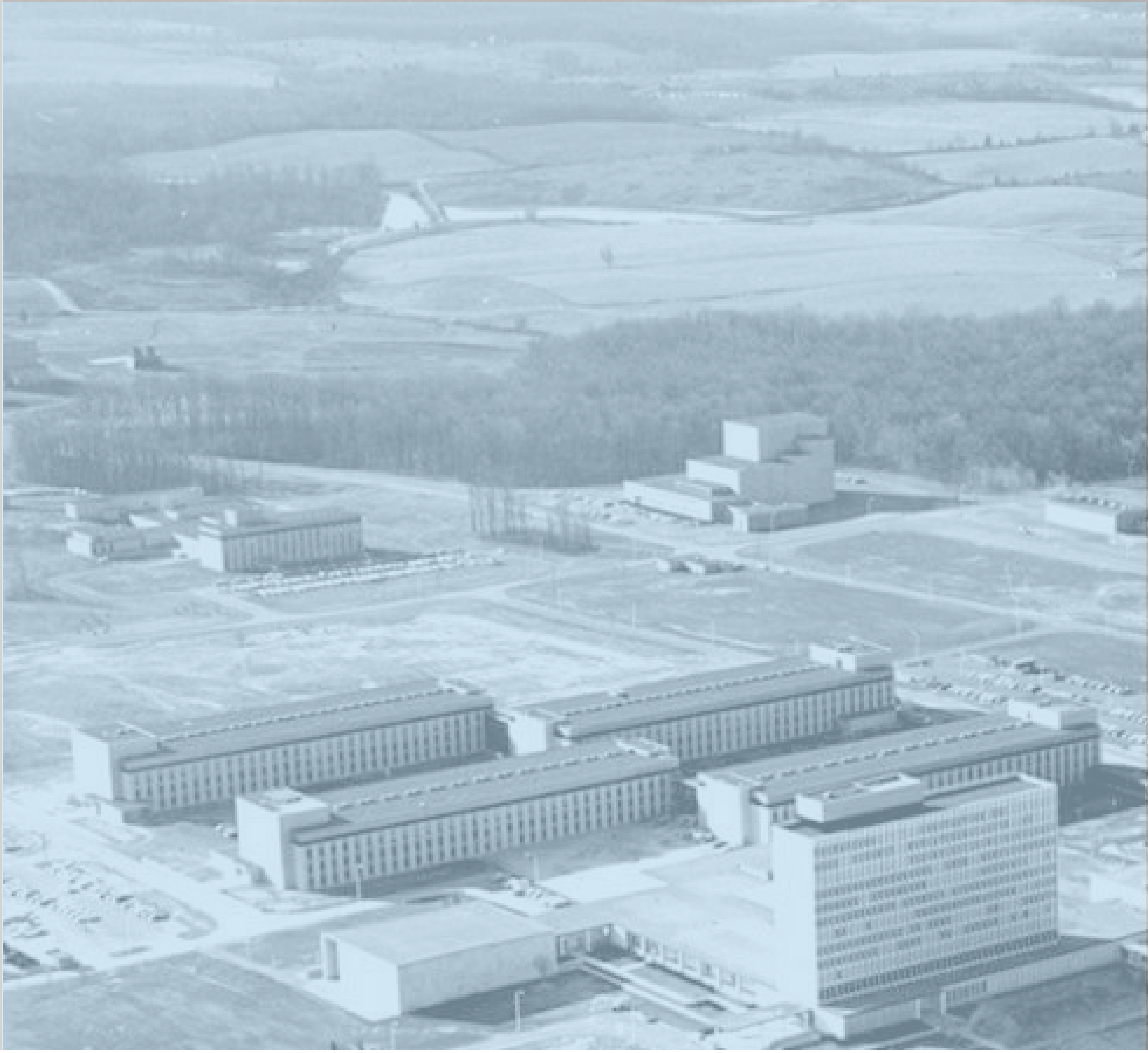

National Institute of Standards and Technology
General Purpose Laboratories

Historic Structures Report | 100% Submission
Condition Assessment

PREPARED FOR:
The Office of Facilities and Property of Management for the
National Institute of Standards and Technology

MTFA
architecture

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FRONT MATTER

MTFA architecture

INTRODUCTION

The purpose of the Historic Structure Report is to examine the architectural history of these significant federal buildings, inventory character defining features, and establish Preservation Zones to inform future maintenance and renovations. This report incorporates the information and research specific to the architecture of General Purpose Laboratories on the National Institute of Standards and Technology (NIST) campus in Gaithersburg, Maryland. This report addresses all exterior and interior spaces and features (excluding structural, mechanical, electrical, and plumbing building systems) of the following General Purpose Laboratories: Buildings 220, 221, 222, 223, 224, 225, and 226.

Section A: Building Summary presents basic facts about the buildings and arguments for their architectural and historical significance. These statements explain why these buildings are important and worthy of preservation.

Section B: Construction History discusses the buildings as originally built and outlines the major alterations and additions that have taken place since they were constructed. This section includes selected examples of the original drawings, historic and modern photographs, as well as a listing and source of all the building materials used on the exterior and interior of the buildings, when available. This section explains how the buildings came to look the way they do today.

Section C: Inventory of Significant Features identifies, documents, and clarifies preservation priorities of the historically and architecturally significant extant interior features and spaces of the building. The significant areas and spaces are prioritized by three preservation zone classifications: 1) Restoration Zone; 2) Rehabilitation Zone 1; and 3) Renovation Zone. This report reviewed the significant architectural features of the interior Restoration and Rehabilitation Zones where they were accessible in each building. Renovation Zones were not investigated. The building inventory itemizes extant original elements within Restoration and Rehabilitation Zones and lists the material, finish, and approximate date for each item. Photographs document significant features within the inventory.

Section D: Preservation Challenges and Recommendations illustrates recurring existing conditions that may adversely affect the building's historic fabric, appearance, or structural integrity. Based upon the findings, a prioritized list of preservation repair items is included as a matrix in this section of the guide.

Section E: Previous Studies includes summaries of selected architectural, structural, material, and engineering studies that have been completed for the buildings. This section includes relevant information such as scope and findings.

Section F: Outline Specifications contains placeholders for outline specification that address preservation concerns, including material and assemblies throughout the buildings.

Section G: Glossary contains definitions of terms used in this guide. These words are italicized in the Front Matter.

Section H: Condition Drawings This section illustrates the scope and location of the conditions found during survey for the exterior of the seven GPL buildings.

Section I: Appendix This section includes an index of the digital research files, original drawings, historic photographs, and current photographs which can be found on flash drives included with this submission. *(To be completed for the 100%)*

The Historic Structure Report is intended to be used as a reference document for the NIST, the Office of Facilities and Property Management (OFPM) and its staff as well as for outside contractors of the existing conditions and their relative significance for consideration when planning, designing and completing work on General Purpose Laboratories. While every effort has been made to document and evaluate significant architectural and construction features, it is not intended to limit future changes required by ever-evolving mission of scientific research that defines the agency.

PUBLICATION DATA

Location
Buildings 220-226 are within the northeast quadrant of the Gaithersburg Campus of the National Institute of Standards & Technology located at 100 Bureau Drive, Gaithersburg, Maryland, 20899.

Ownership
Buildings 220-226 are owned by the U.S. Department of Commerce National Institute of Standards and Technology (NIST) and the site is owned by the U.S. Government.

National Register of Historic Places Status
The National Park Service listed the entire 579-acre NIST campus on the National Register of Historic Places on August 6, 2021 as a historic district under National Register Criteria A and C for its historic and architectural importance for the period of significance from 1962 to 1969. The General Purpose Laboratories are contributing resources to the historic district.

Research
The project team conducted limited archival research to better inform the survey team. A list of repositories where holdings have been consulted follows:

NIST Research Library
Vertical File on Gaithersburg Campus
Material Boards and Renderings for Interior Design
Oral History
Written History Documents

NIST Records Management
Photographs from the time of construction.

NIST Digital Archives
Textural records. Gaithersburg Campus Collection includes photographs, architectural renderings, technical publications, journal articles, and history publications.

NIST Facilities Drawings Database and Library
Relevant files include architectural drawings and specifications for the original construction and major maintenance

Historic Structure Report User Contacts:

Phillip Neuberg, FAIA
Architect and Federal Preservation Officer
Office of Facilities and Property Management
National Institute of Standards & Technology
301-975-6940
Phillip.neuberg@nist.gov

Susan Cantilli, AIA
Team Lead, Facilities Planning

Capital Asset Management & Facilities Planning Group
Office of Facilities and Property Management
National Institute of Standards & Technology
301-975-8833
Susan.Cantilli@nist.gov

Keith Martin
Librarian
Research Library
National Institute of Standards & Technology
301-975-2789
Keith.martin@nist.gov

John R. Bollinger, P.E.
Capital Asset Management & Facilities Planning
Office of Facilities Management and Planning
National Institute of Standards & Technology
301-975-5014
John.r.bollinger@nist.gov

Project Participants:

MTFA Architecture

James P. Clark, FAIA, LEED AP BD+C
Principal-in-Charge

Amanda Edwards, PA-AIC, LEED Green Assoc.
Sr. Architectural Conservator
Associate Principal

Britton Baine, RA
Preservation Architect
Associate

Haley Schriber
Architectural Historian

Sara Baum
Architectural Conservator

Samantha Ihle
Architectural Designer

SECTION A:

BUILDING SUMMARY

MTFA architecture

BUILDING SUMMARY

Building Name: National Institute of Standards and Technology General Purpose Laboratory (Buildings 220, 221, 222, 223, 224, 225, and 226)

Building Address: 100 Bureau Drive Gaithersburg, MD 20878

Bordering Streets:

Buildings 220, 221, 222, and 223:

North: North Drive
South: South Drive
East: East Drive
West: Research Drive

Building 224, 225, and 226:

North: North Drive
South: South Drive
East: East Drive
West: West Drive

Construction Type: Reinforced Concrete Frame with Steel Framed Penthouse Level

Building Function: Buildings 220-226 are the seven original General Purpose Laboratories for the National Institute of Standards and Technology campus in Gaithersburg, Maryland. Each building has three full stories, a penthouse, and an unfinished attic, which houses mechanical and electrical systems. Buildings 220, 221, and 225 have a basement level, while some buildings have a sub-basement level. Modular laboratory spaces occupy the core of each of the three main floors. Modular offices are arranged on the perimeter of each floor around the circulation corridors. The various GPLs today house a variety of scientific research laboratories, some not even envisioned at the time of their original construction. Originally, the GPLs house the following research departments:

Building 220: Metrology
Building 221: Physics
Building 222: Chemistry
Building 223: Materials
Building 224: Polymers
Building 225: Technology
Building 226: Building Research

Building Size

Building 220:

Basement	48,314	SF
First Floor	38,427	SF
Second Floor	37,278	SF
Third Floor	37,210	SF
Attic	38,623	SF
Penthouse	3,270	SF
Total floor area	**161,608**	**SF (Gross)**

Building 221:

Sub-Basement	1,400	SF
Basement	54,150	SF
First Floor	41,480	SF
Second Floor	39,580	SF
Third Floor	39,570	SF
Attic	38,890	SF
Penthouse	3,270	SF
Total floor area	**218,340**	**SF (Gross)**

Building 222:

Sub-Basement	---	SF
Basement	6,430	SF
First Floor	42,000	SF
Second Floor	39,710	SF
Third Floor	39,690	SF
Attic	39,440	SF
Penthouse	3,270	SF
Total floor area	**170,540**	**SF (Gross)**

Building 223:

Sub-Basement	---	SF
Basement	4,230	SF
First Floor	40,460	SF
Second Floor	39,570	SF
Third Floor	39,580	SF
Attic	38,890	SF
Penthouse	3,270	SF
Total floor area	**166,000**	**SF (Gross)**

Building 224:

Sub-Basement	---	SF
Basement	4,230	SF
First Floor	40,460	SF
Second Floor	39,570	SF
Third Floor	39,580	SF
Attic	38,970	SF
Penthouse	3,270	SF
Total floor area	**166,080**	**SF (Gross)**

Building 225:

Sub-Basement	2,440	SF
Basement	43,580	SF
First Floor	42,670	SF
Second Floor	39,570	SF
Third Floor	39,570	SF
Attic	38,870	SF
Penthouse	3,270	SF
Total floor area	**209,970**	**SF (Gross)**

Building 226:

Sub-Basement	---	SF
Basement	2,990	SF
First Floor	41,480	SF
Second Floor	39,570	SF
Third Floor	39,570	SF
Attic	39,340	SF
Penthouse	3,270	SF
Total floor area	**166,220**	**SF (Gross)**

Façade Dimensions:

Building 220

East Drive: Primary	122 feet – 11 inches
South Drive: Secondary	396 feet – 1 inch
Research Drive: Secondary	122 feet – 11 inches
North Drive: Secondary	396 feet – 1 inch

Building 221 and 223

Research Drive: Primary	122 feet – 11 inches
South Drive: Secondary	396 feet – 1 inch
East Drive: Secondary	122 feet – 11 inches
North Drive: Secondary	396 feet – 1 inch

Building 222

East Drive: Primary	123 feet – 3 inches
South Drive: Secondary	396 feet – 2 inches
Research Drive: Secondary	123 feet – 3 inches
North Drive: Secondary	396 feet – 2 inches

Building 224

West Drive: Primary	122 feet – 11 inches
South Drive: Secondary	396 feet – 1 inch
East Drive: Secondary	122 feet – 11 inches
North Drive: Secondary	396 feet – 1 inch

	Building 225	
	East Drive: Primary	123 feet – 7 inches
	South Drive: Secondary	396 feet – 1 inch
	East Drive: Secondary	123 feet – 7 inches
	North Drive: Secondary	396 feet – 1 inch
	Building 226	
	West Drive: Primary	139 feet – 0 inches
	South Drive: Secondary	396 feet – 1 inch
	East Drive: Secondary	139 feet – 0 inches
	North Drive: Secondary	396 feet – 1 inch

Height 61 feet – 10 inches

Stories: 4

Floor to Floor Heights

Sub-Basement	
221 and 225	11 feet – 8 inches
Basement	
220	14 feet – 4 inches
221-226	11 feet – 8 inches
First Floor	11 feet – 8 inches
Second Floor	11 feet – 8 inches
Third Floor	11 feet – 8 inches
Attic	11 feet – 8 inches
Penthouse	13 feet – 1 inch

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STATEMENT OF SIGNIFICANCE

The seven original General Purpose Laboratory buildings (GPLs) form the main core of the NIST research campus in Gaithersburg, MD. The NIST campus fits into a broad trend of large scientific institutions, both public and private, moving their headquarters from crowded urban sites to spacious, auto-centric suburban campuses. The GPLs are significant as a part of this larger campus but also individually as they reflect changing expectations and design innovations for office building architecture during the mid-twentieth century. It is also significant as an excellent example of the modernist *International Style.*[1]

The National Bureau of Standards

In 1901, the United States Congress enacted legislation founding the National Bureau of Standards (NBS). The Bureau would not adopt the name National Institute of Standards and Technology until 1988.[2] The NBS was conceived as a response to the United States' scientific and industrial communities, who recognized a need for more reliable standards of measurement. In 1892, nine years before the creation of NBS, William Mason, a member of the Rensselaer Polytechnic Institute complained in a letter to Science Magazine that there were as many as eight "authoritative" values for the US Gallon.[3] The federal government recognized that standardized units of measurement were a necessary part of the scientific method. It therefore tasked NBS creating and proliferating a system of standard, empirical measurements for the benefit of the nation's growing technological and industrial sectors. The Bureau soon produced measurement standards for length, volume, and weight.

Figure A1: North and South Buildings on the original site of the National Bureau of Standards. (Source: Library of Congress)

[1] Definitions of italicized words can be found in Section G: Glossary.
[2] Kristen Peeler, "National Institute of Standards and Technology (NIST)," Maryland Inventory of Historic Properties Form M:20-47, (Crownsville, MD: Maryland Historical Trust, June 2015).
[3] Rexmond C. Cochrane, *Measures for Progress: A History of the National Bureau of Standards* (Washington, DC: US Government Printing Office, 1974), 33-34.

During both World Wars, the Bureau's influence grew as it developed new products and techniques to assist with the war effort. The Bureau emerged from WWII as the federal government's premier research agency in the fields of physics, mathematics, chemistry, and engineering. In the post-war years, Secretary of Commerce Herbert Hoover redefined the Bureau's core mission: to assist recovery of the domestic economy, the Bureau would establish standards of production and quality for commercial goods and materials. By 1950, the Bureau employed 3100 staff across 15 departments and had an annual budget of $20 million.

Relocation to Gaithersburg

In 1903, the NBS moved into its first headquarters - a newly-completed single structure at the corner of Connecticut Avenue and Van Ness Street in Washington, DC. NBS would occupy this site for the next six decades. By as early as 1934, the Bureau's directors recognized a need for new facilities as it was quickly outgrowing its facilities. That year the NBS submitted plans for a new Administration Building to the Works Progress Administration as part of a request for funds. The funds were never made available and the plans were scrapped.

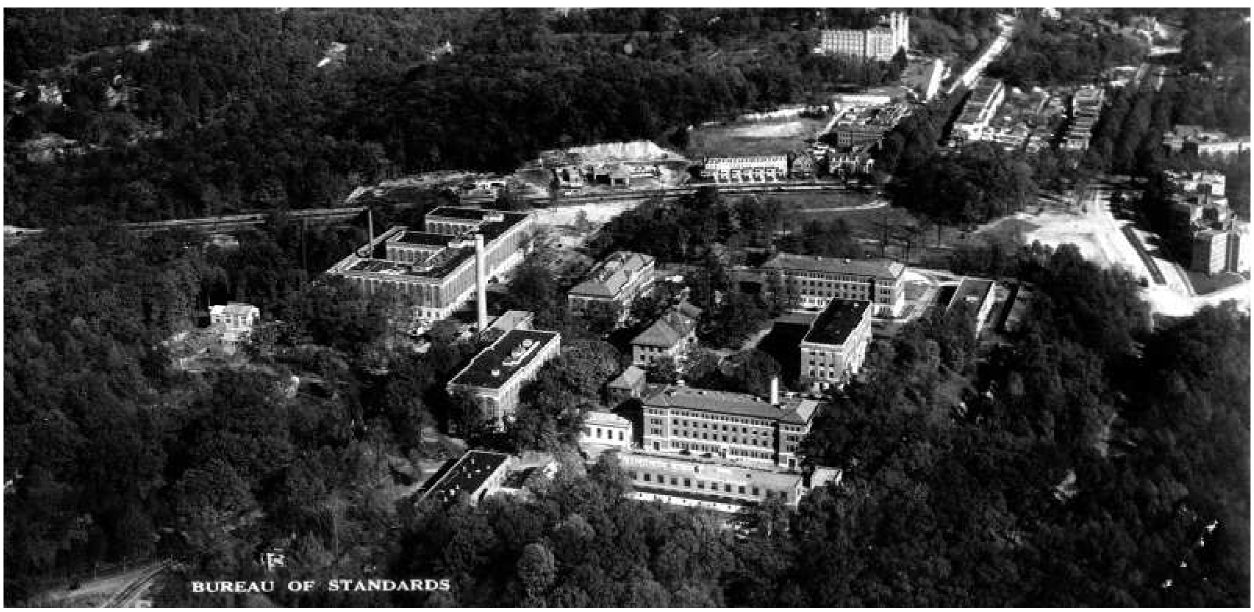

Figure A2: Aerial photograph of The National Bureau of Standards original site, c. 1930. (Source: NIST)

The Bureau's explosive growth during WWII exacerbated problems of overcrowding and building obsolescence. By the end of the war, the various departments were housed in ninety-three separate buildings on a 69-acre tract of land. The employees of one particular department were spread across seventeen separate buildings. The sprawling headquarters made communication and collaboration slow and difficult. To make matters worse, individual buildings frequently lacked adequate equipment for the Bureau's research requirements, and efforts to modernize were largely unsuccessful. Between 1949 and 1950, Congress allocated $2 million for an update of the mechanical, electrical, and heating systems. However, the plans for the update did not take into account ever-increasing demands on the air conditioning equipment to control temperature and humidity in laboratories with instruments sensitive to overheating. The electrical upgrade was inadequate from the very start.

Finally, in 1955, NIST made the decision to relocate the headquarters to the suburbs of Washington, DC rather than attempt to redevelop the existing site. Multiple factors encouraged relocation over rehabilitation. Perhaps most pressing was the threat of nuclear attack during the Cold War years. The federal government determined that it would be necessary to locate the new headquarters at least twenty miles from the White House to protect the Institute from nuclear attack. The existing headquarters were less than five miles away. Regardless of defense concerns, it is likely that the Institute's own preferences and needs would have dictated moving to a less urban site. Electrical interference and mechanical vibrations from neighboring buildings had the potential to impair the Institute's delicate instruments.[4] Relocation to a large tract of land in the suburbs would provide a necessary buffer against neighboring structures and allow NIST to expand more easily in the future.

Designing the New Campus

Once the NBS made the decision to relocate in 1955, Director Allen Astin delegated the planning process for the new campus to his Associate Director, Robert Walleigh. Walleigh, an engineer by training, had been an NBS employee since 1943.[5] Between 1955 and 1956, Walleigh oversaw the selection of a new site in Gaithersburg, Maryland chosen for its flat topography and convenient distance from Washington, DC. According to Walleigh, it was paramount that existing employees had easy access to the new site. If not, they could easily find work elsewhere. On July 6, 1956, the Federal government filed a Declaration of Taking to acquire 579 acres along what is now Interstate 270.[6] The NBS recommended that the GSA hire Voorhees, Walker, Smith, Smith & Haines Architects of New York (VWSSH), who had extensive experience designing large campuses for leaders in science and technology.[7] The US General Services Administration (GSA) considered several applicants, ultimately hiring VWSSH shortly after acquiring the new site in Gaithersburg.[8]

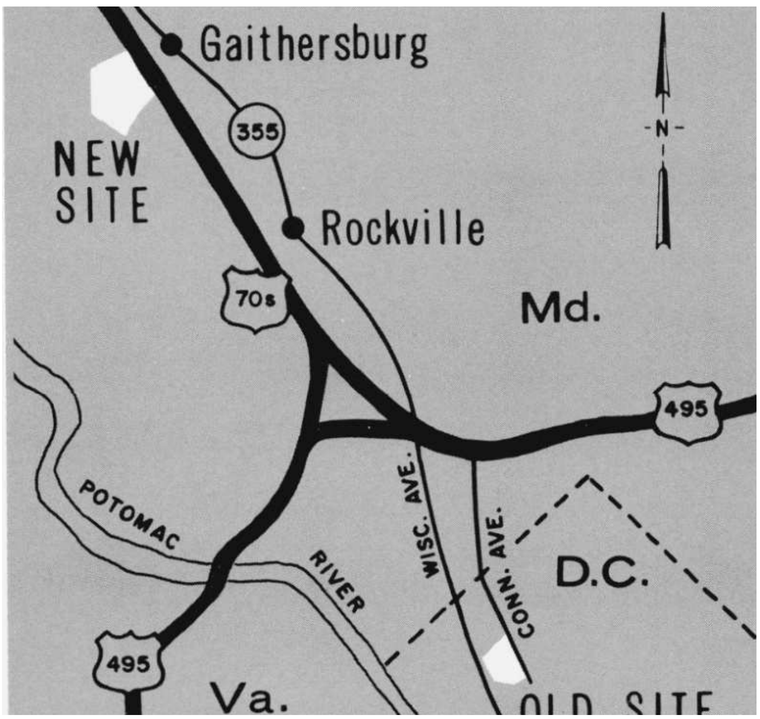

Figure A3: Graphic illustrating the location of the new site in relation to the original site in the city line. (Source: NIST)

In 1955, the GSA had estimated a budget of $40 million for construction of a single 1-million square-foot, six-story structure for the

[4] Robert S. Walleigh, "The Gaithersburg Site," NIST Special Publication 825: NBS/NIST – A Historical Perspective, ed. Karma A. Beal (Gaithersburg: NIST, 1991), 49-50.
[5] James F. Schooley, *Responding to National Needs: The NBS Becomes the NIST 1969-1993* (Gaithersburg: US – Department of Commerce, 2000), 40.
[6] Walleigh, 50.
[7] The firm VWSSH was known as Voorhees, Walker, Smith, & Smith when hired in 1956. By 1958, the firm had become Voorhees, Walker, Smith, Smith, & Haines. The firm has gone through several name changes since then, becoming Haines, Lundberg, and Walker in 1968. Today the firm is known as HLW Architects. HLW Architects, "Highlights of 100 Years."
[8] Ibid., 50-51.

new NBS headquarters.[9] The GSA continued to champion this single-block type arrangement as the most economical, even as the NBS clearly preferred a multi-building campus. On August 14, 1958, the GSA facilitated a Relocation Planning Meeting with the NBS, the Public Buildings Service (PBS), and VWSSH. From the meeting minutes, it is apparent that the NBS favored a campus with multiple buildings, while the Bureau of the Budget (now the Office of Management and Budget) preferred a single large structure as a more economical solution. The NBS reported that while it was "not wedded to any type of building or grouping," it had discussed designs similar to the quadrangle of buildings constructed to house the Atomic Energy Commission in 1955 and "a hexagon or snowflake style with separate spines each similar to NBS Boulder Laboratories," which had been completed in 1954.[10]

While unsure of the exact layout of the buildings, the NBS was certain about the atmosphere they

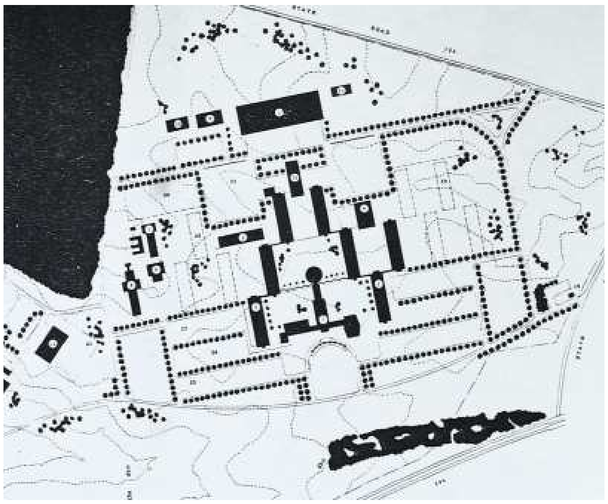

Figure A4: Diagram representing the NBS preferred multi-building campus arrangement, c. 1958. (Source: NIST)

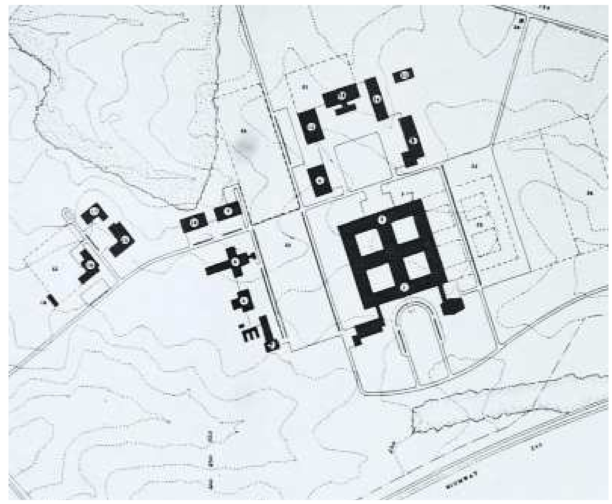

Figure A5: Diagram representing the preferred single large structure that the now Office of Management and Budget prefers as the most economical solution, c. 1958. (Source: NIST)

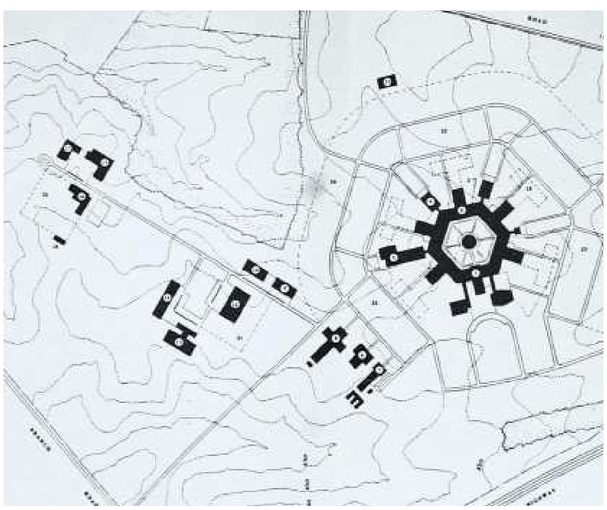

Figure A6: Diagram representing the hexagon or snowflake style, similar to the NBS Boulder campus preferred by NBS, c. 1958. (Source: NIST)

Figure A7: Aerial photograph of Boulder Campus illustrating the separate spine arrangement. (Source: NIST)

[9] Elio Passaglia, *A Unique Institution: The National Bureau of Standards 1950-1969*, Washington D.C. : U.S. Government Printing Office, 1999), 477-478.
[10] "Architectural Style," Folger Summary of Files on Gaithersburg, Vertical Files of National Bureau of Stands Management Planning Dvision, Nist Archive, 5.

wished to create. In a 1956 letter to the Mayor of Gaithersburg, R. S. Walleigh, Associate Director for Administration, wrote:

> The Bureau (NIST) wishes to develop on its new site a university campus-type atmosphere similar to the one which has been achieved on the present site (in Washington, DC). It has been found that such surroundings are an asset in attracting and retaining scientists and in producing the environment which stimulates scientific productivity.[11]

It is significant that Walleigh referred specifically to the importance of "attracting and retaining scientists." World War II had led to an explosion in scientific research and innovation to support the war effort. This boom in the technology and manufacturing industries continued into the 1950s and 1960s. With so many opportunities for employment, scientists and engineers could afford to be picky, and both private and public research institutions devoted significant resources to state-of-the-art corporate campuses that would both attract new employees and retain the old.[12] The NBS was no exception.

On December 11, 1956, VWSSH toured the recently completed NBS campus in Boulder, Colorado. The following day they met with NBS representatives to discuss their expectations for the new facility. In anticipation of the meeting, NBS employee C. A. Dieman prepared a memo recommending that VWSSH be given "considerable latitude in establishing a style of architecture… consistent with (the Bureau's) position as one of the outstanding Government research laboratories." Dieman also stressed that while the economy of the design was important, it should not be taken so far as to discourage top-notch scientists and engineers from accepting employment with the NBS. Astin and Golovin relayed Dieman's concerns in the December 12 meeting, adding that multiple buildings would be preferable to the monolithic structure that the GSA proposed.[13]

The Corporate Campus

The Bureau's move to the suburbs followed a pattern already established among large private corporations. Beginning in the 1940s, giants of American technology and industry constructed large corporate research campuses in the suburbs of large urban centers. The movement began as a way to address practical concerns of overcrowding in city centers and the need to attract qualified employees in the post-war economic boom. By the 1950s, the movement had morphed from a largely practical management decision to a clever marketing tool and tangible representation of a new corporate identity. The new NBS campus led by VWSSH, and especially the centrally-located Building 101, adopted lessons learned from the movement's progression to address practical needs while presenting a new modern image for the NBS.

<u>VWSSH: Bell Telephone Laboratories (1942) and General Foods (1954)</u>

The predecessors of VWSSH were pioneers of the suburban corporate campus. Beginning in the 1930s, Voorhees, Gmelin, and Walker, worked with Olmsted Brothers of Brookline, MA, to design Bell Telephone Laboratories, the first suburban corporate campus in the United States. The completed campus was a collection of low-lying buildings that housed laboratories, administrative spaces, and various amenities. The interiors employed a revolutionary *modular* design to ensure Bell could easily adapt to changing technology and programmatic needs. The architects organized each building around a standard six-foot-wide laboratory module with moveable metal partitions. According to a 1944 article in *Life* magazine,

[11] "Planning the NBS Facilities at Gaithersburg, Maryland," (October, 1972), Folder 1959-1972 Planning the Move to Gaithersburg, Vertical Files of National Bureau of Standards Management Planning Division, NIST Archive, 1.
[12] Mozingo, Louise A., *Pastoral Capitalism: A History of Suburban Corporate Landscapes*, (MIT Press, 2011), 59.
[13] "Architectural Style," (May 1958), Folder Summary of Files on Gaithersburg, Vertical Files of National Bureau of Standards Management Planning Division, NIST Archive, 4-5.

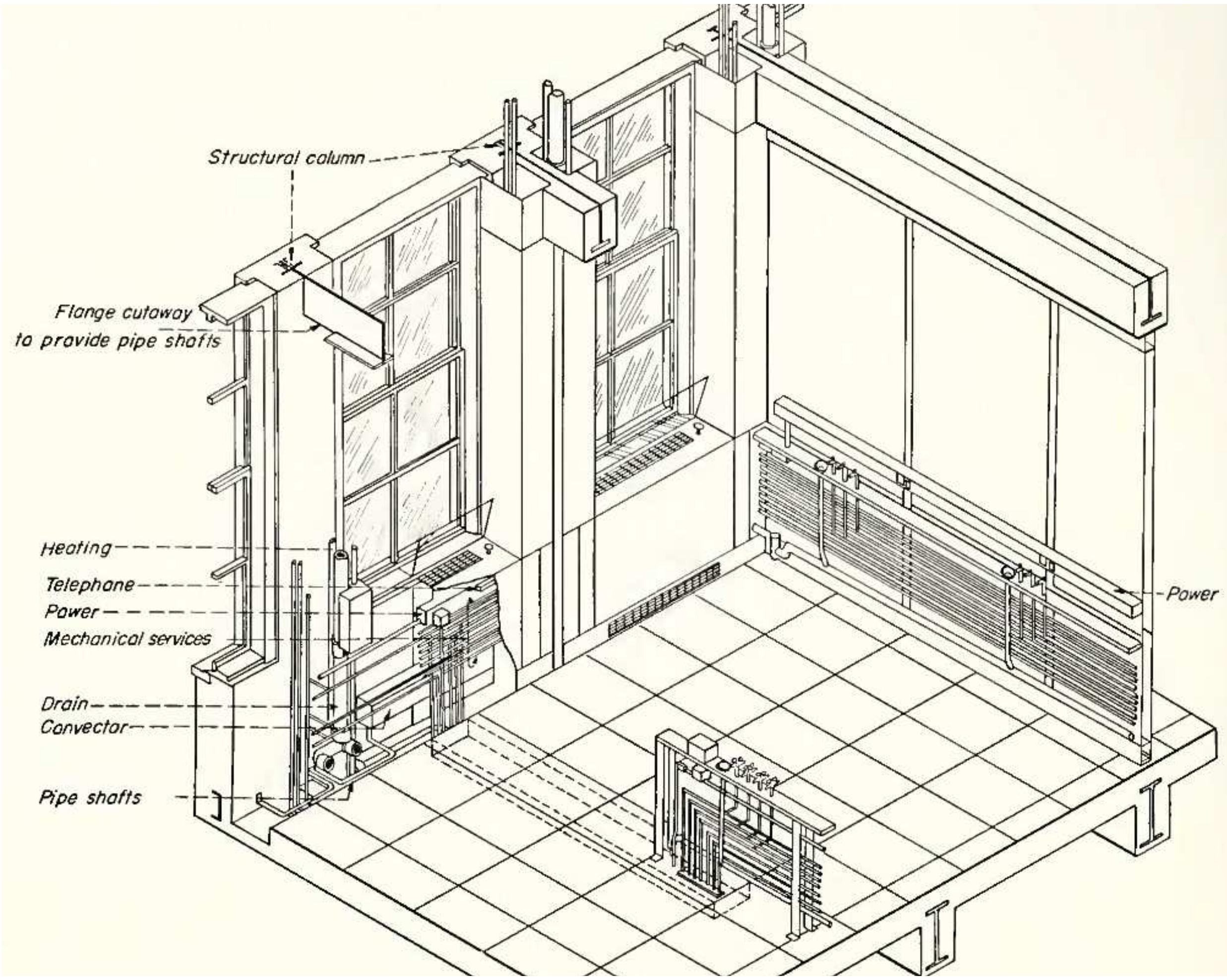

Figure A8: Diagram of laboratory modules. Piers at intervals are incorporated into the outside walls as a source of all services. Modules allow access to mechanical and electrical services while providing both natural and artificial light. (Source: National Research Council, Report on Design, Construction and Equipment of Laboratories, 1951)

laboratory space could be reconfigured in as little as forty-eight hours.

While the interior design addressed programmatic needs, the exterior facades and landscaping were designed to court public opinion. As the first of its kind, the Bell campus met with distrust from its suburban neighbors. Care was taken to blend the buildings into their suburban surroundings. The campus was set back from the road within a landscaped park, and no building exceeded three stories in height. The exterior facades were rendered in the traditional *Colonial Revival style*, which contemporary critics frequently faulted as incongruous with the technologically advanced interior. Despite this criticism, VWSSH - then Voorhees, Walker, Foley, and Smith - repeated its use of the Colonial Revival style about a decade later in their design of the General Foods campus in White Plains New York. In this instance, VWSSH chose the Colonial Revival style because it was in keeping with the overall architectural character of surrounding neighborhoods. As with the Bell Telephone Laboratories, local reception for the new General Foods campus location was lukewarm at best. The architect therefore made a conscious decision to employ the traditional architectural style to placate local resentment.

Corporations also had to contend with the possibility that employees might resign rather than relocate, since the post-war technological boom meant scientists and engineers could have their pick of jobs. At the Bell campus, VWSSH included amenities such as a restaurant, lounge, softball fields, and ample parking.

At General Foods, workspaces featured one window for every two employees. At both projects, VWSSH strove to recreate the feeling of a college campus in order to entice scientists and engineers away from universities. To this end, both campuses featured a collection of buildings around a landscaped quadrangle, in imitation of the academic quadrangle common on American university campuses.

By the completion of the General Foods campus in 1954, VWSSH had firmly established the fundamentals of the suburban corporate campus. These included three-story height limits, large setbacks, ample parking, and landscaped green spaces. Future developments would introduce a new dimension to the suburban campus: corporate branding.

Figure A9: Aerial view of the Bell Telephone Laboratories at Murray Hill, New Jersey. (Source: National Research Council, Report on Design, Construction and Equipment of Laboratories. 1951)

Corporate Campus as Symbol: General Motors (1956)

Eero Saarinen's design for the General Motors Technical Center in Warren, Michigan, ushered in a new phase of the suburban corporate campus. While the Bell Telephone Laboratories and General Foods campus sought to blend into the neighborhood, the modernist General Motors Technical Center was conceived as a highly visible piece of corporate branding. General Motors gave architect Eero Saarinen considerable latitude in "developing forward looking architectural design." The final product was unapologetically modern and clad in steel-and-glass *curtain wall* and vibrant glazed brick. The complex retained the campus-like atmosphere of the earlier developments, but Saarinen was not designing solely for the GM employee. His campus was outward-looking, intended to present a carefully curated corporate image to the public at large. *Life* magazine called it "Architecture of the Future," while *Architectural Forum* dubbed it the "Industrial Versailles." Saarinen intended the overall message to be one of modernity and progress, and he was successful. At the Center's 1956 dedication, President Dwight D. Eisenhower called it "a place for leadership furthering new attacks on the technological frontier." This corporate campus was not fading into the background. It was brash and cutting edge, using architecture to communicate corporate ideals.

Corporate Campus at the National Bureau of Science

In their design of Bell Labs, Vorhees et al had helped establish the "fundamentals of the corporate campus," which were nearly universal elements of the architect-designed corporate campuses beginning in the 1940s.

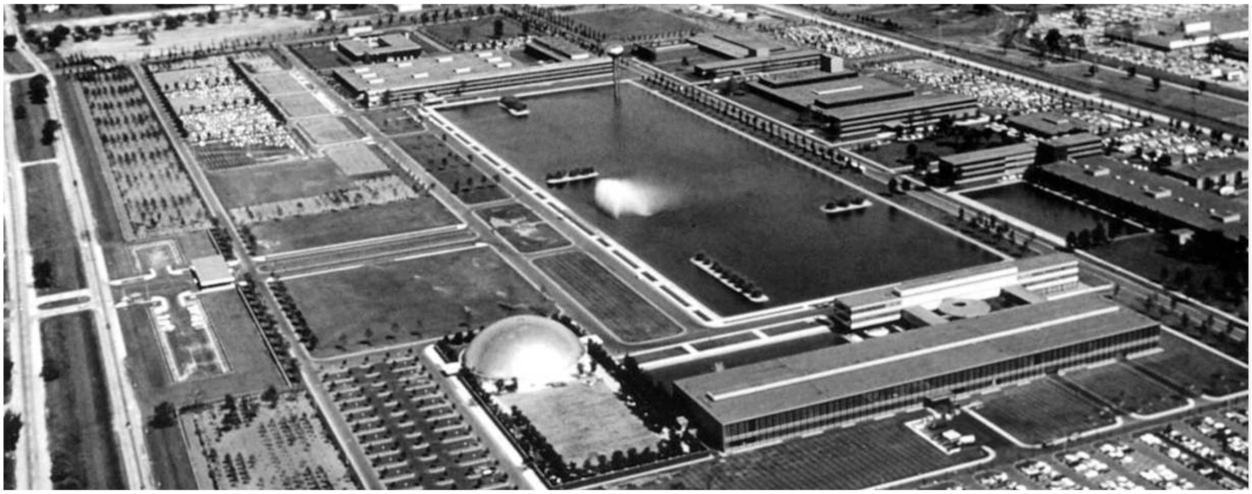

Figure A10: Aerial photograph of the General Motors Technical Center. (Source: Michigan State Historic Preservation Office)

The following characteristics were widely considered necessary to the design of a thoroughly modern research campus that would attract talented research scientists: centrally located green space, flexible laboratory organization, easy automobile access and ample parking, underground utilities, controlled access, three-story buildings, and generous landscape setbacks.[14] With its focus on green space and automobile access, this model lent itself much better to multi-building campuses on large tracts of land than a single large, monolithic structure. When VWSSH presented their design to NBS and GSA on June 1, 1960, the model depicted a multi-building campus with wing-like laboratory buildings connected via enclosed *concourses* to a central administrative building.[15] The central high-rise structure was designed as the social, cultural, and administrative hub of the campus. The entire composition was expertly rendered in the modernist International Style, rather than the traditional Colonial Revival designs of VWSSH' past campuses. The International Style developed as a celebration of the industrial age and its architectural expression of materials, asymmetry, and sleek style communicated the modern era. The result of this careful design process was a streamlined, modern building that branded the Bureau's dedication to furthering American progress in industry and technology.

Figure A11: Campus site plan rendering highlighting the focus on green space and automobile access. (Source: NIST)

General Purpose Laboratory - Core of the New Campus

Seven General Purpose Laboratory (GPL) buildings would be the backbone of this new, state-of-the-art research campus. The design, construction, and equipment costs for the GPL alone totaled approximately $38 million, which would be more than $300 million in today's currency.[16] Upon their completion in

[14] Mozingo, 59
[15] Walleigh, 51-52.
[16] United States Department of Commerce, "Bulk of NBS Technical Program is Housed in Seven General Purpose Laboratories" NBS Technical News Bulletin, (November 1966): 206.

1962, the GPLs provided nearly 600,000 square feet of laboratory, office, and support space for the seven main research departments, making up approximately 70% of all technical programming space on the Gaithersburg campus.[17] All seven buildings were situated along a north-south axis with the main Administration Building (Building 101) as its midpoint. The new GPL housed each department within a single dedicated building with general and specialized laboratories tailored to its specific needs. Covered "all weather" glass-and-aluminum concourses connected the GPL with one another and Building 101. The proximity and interconnectedness of the various departments (Meteorology, Physics, chemistry, etc.) was perhaps the most significant improvements over the decentralized Washington, DC campus. These physical connections, combined with state-of-the-art intercommunication technology and a synchronous campus-wide time keeping system, facilitated increased communication and collaboration between departments.[18] In total, the seven GPL provided permanent workspace for 1500 faculty and staff that had been spread across 48 buildings on the old NBS campus.[19]

State-of-the-Art Building Technology

The new GPL also addressed the technical obsolescence and poor environmental control endemic to the outdated laboratory facilities on the Washington campus. The old urban campus had little or no buffer against the vibrations and magnetism that neighboring buildings and public roadways produced. This

Figure A12: Aerial photograph of the newly constructed NIST campus at Gaithersburg, c. 1964 (Source: NIST)

[17] "Planning the NBS Facilities at Gaithersburg, Maryland," (October, 1972), Folder 1959-1972 Planning the Move to Gaithersburg, Vertical Files of National Bureau of Standards Management Planning Division, NIST Archive, Exhibit 16.
[18] "Laboratory Services and Facilities Manual," (1972) Folder 1959-1972 Planning the Move to Gaithersburg. Vertical Files of National Bureau of Standards Management Planning Division, NIST Archive, 3.
[19] NBS Technical News Bulletin, 206.

urban pollution interfered with the more delicate instruments of measurement and encumbered research and experimentation. Interior climate control was also insufficient in the old campus buildings. Changes in temperature and relative humidity also decreased the reliability of measuring instrumentation. Finally, it was difficult to retrofit the existing buildings on a crowded, decentralized campus to accommodate the newest state-of-the-art laboratory equipment. Since NIST's organization in 1901, two major wars and an explosion of world-wide industrialization and urbanization had instigated a technological revolution. The older campus simply had not been designed with the sort of flexibility needed to meet the physical and technological demands of NIST's new role in global industry and scientific research.

<u>Improved Environmental Controls</u>

Particular attention was paid to designing a state-of-the-art air conditioning and ventilation system that would allow greater control of interior temperature and humidity levels. VWSSH introduced two distinct ventilation systems for this purpose – one for offices and corridors, and a second specifically for laboratories.[20] Both systems were designed to maintain an ambient temperature of 75 degrees F with a deviation of ± 2 degrees. The maximum allowable interior humidity would be 50%. Air filtration would remove between 25% and 30% of air-born dust. This degree of control was considered acceptable to meet most general laboratory needs as well as overall occupant comfort.

Figure A13: Installation of ventilation and heating/air conditioning. (Source: NIST)

The two distinct ventilation systems isolated laboratory air handling and filtration system not only allowed for a greater degree of control within the laboratory modules when necessary. It also decreased the transfer of potentially polluted air within laboratory modules into offices and support spaces. The interior laboratory modules were to be kept at a negative air pressure relative to the corridors, which in turn were to be at a negative pressure relative to the exterior office modules. This would encourage passive air transfer from the office and corridors into the laboratory modules and prevent passive transfer from the laboratories outward to the other occupied spaces.

[20] NBS Technical News Bulletin, 209.

Wall registers below each window supplied office space with outside air, which was then migrated via passive transfer through louvered transom vents into the corridor. Interior ductwork supplied laboratory modules with outside air. In laboratories fitted with a fume hood or "elephant-trunk" exhaust system, all exhaust air was to be expelled through the exhaust system to the atmosphere without being allowed to recirculate in the building. The pressure differential between the labs, corridors, and offices would assist in this process.[21] In laboratories without specialized exhaust systems, air could recirculate. Auxiliary equipment within the ducts supplying specific laboratory modules could be installed to achieve tighter temperature control with a deviation of ±1 degree F.

A14: Construction of the second type of ventilation system installed in the lab spaces connected to the corridors. (Source: NIST)

All air conditioning equipment, except for any auxiliary equipment in the laboratory ducts, was to be located in the fourth-floor attic space. Rotating machinery was mounted on vibration isolators, which were in turn mounted on specially designed concrete bases insulated from attic floor slab. This prevented noise and mechanical vibrations from transmitting through the rest of the building and interfering with measuring instruments and experimentation. Other precautions were also taken prevent mechanical interference, including flexible branch connections and acoustic linings in both the fan casings and ductwork.[22]

<u>Laboratory Services</u>

In addition to improved environmental controls and vibration isolation, the new GPLs could be fitted with a wide array of laboratory services and utilities. VWSSH distributed questionnaires to all departments to determine which utilities would be provided to each laboratory space. Typical services included cold and hot (145 degrees F) water at 18 gallons per minute (GPM) and 100 amps of 120-volt alternating current (AC) electricity. Additional services were available on request, depending on the specific needs of each laboratory space. Departments could request that specific laboratory modules be fitted with steam, vacuum, compressed air, burner gas, and 208-volt AC electricity.[23] Distilled and/or chilled (40 degrees F) water could be piped to every floor or even to individual laboratory modules. Nitrogen, oxygen, and other commonly-used gasses could be supplied directly to each building floor or even to individual laboratory

[21] "Laboratory Services and Facilities Manual," 4.
[22] NBS Technical News Bulletin, 208.
[23] "Instructions for Part V. Equipment Needing Special Facilities," (Form NBS 708), from "Exhibit 7. Policies and Instructions for Occupancy Worksheets," in *Planning the NBS Facilities at Gaithersburg Maryland*, (Washington, DC: National Bureau of Standards - Management and Organization Division, 1972), 1.

modules, should demand prove sufficient.[24] Glass piping carried lab waste first to a cast-iron house sewer and then to special treatment facility before finally diverting it into the sanitary sewer system.[25]

Modular Design and Flexibility

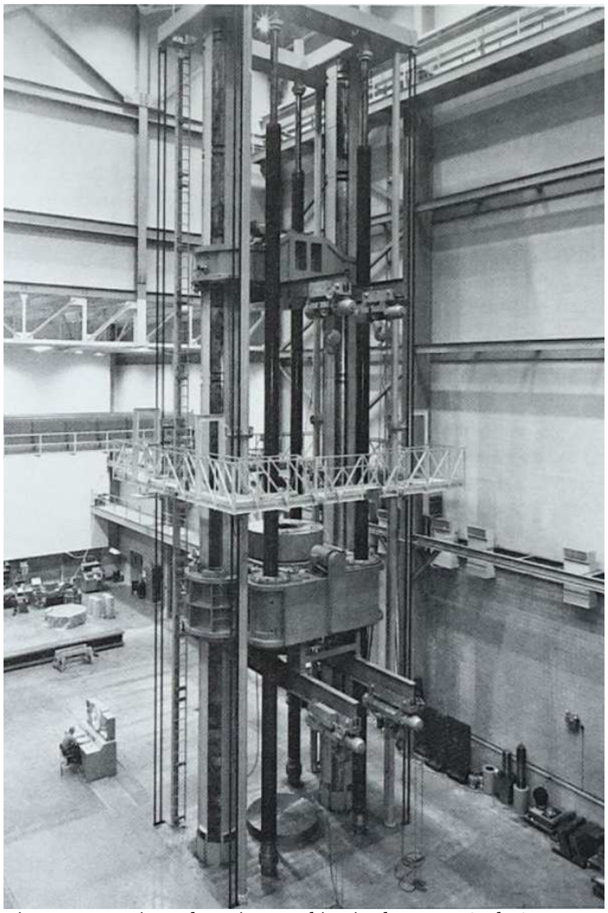

Figure A15: Universal Testing Machine in the Large-Scale Structures Testing Facility. (Source: Facilities of the National Bureau of Standards

Figure A16: Laboratory in Building 220, c. 1965. (Source: NIST)

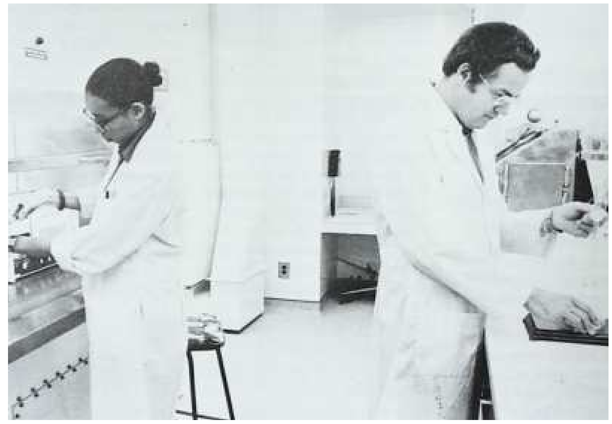

Figure A17: Scientists in the Toxic Chemicals Handling Laboratory. (Source: Facilities of the National Bureau of Standards Brochure)

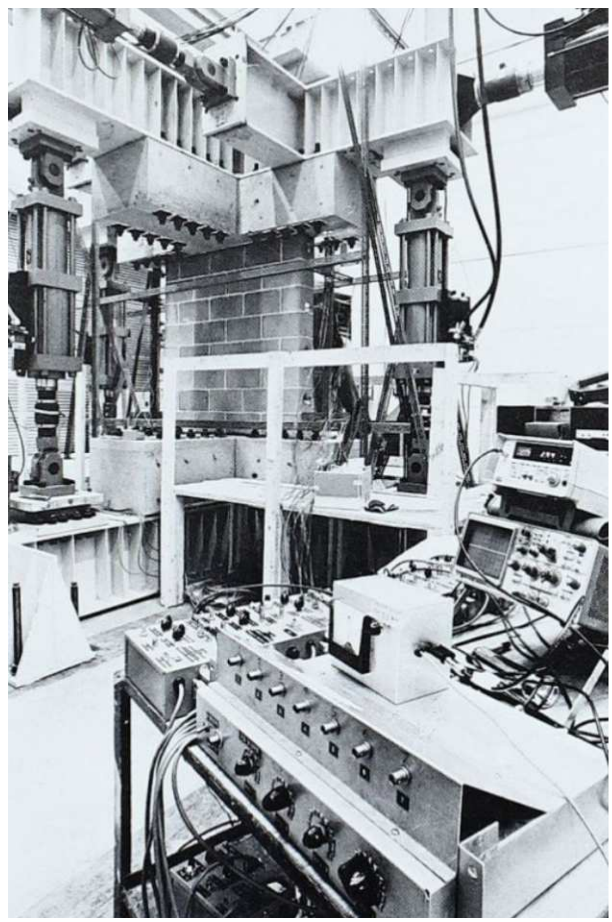

Figure A18: Tri-Directional Test Facility. (Source: Facilities of the National Bureau of Standards Brochure)

[24] "Laboratory Services and Facilities Manual," 6.
[25] NBS Technical News Bulletin, 208.

While the simple, repetitive layouts of each GPL streamlined the construction process and helped stretch a limited budget, an overly strict "one-size-fits-all" design approach would have hampered the new research campus before it even opened its doors. The various departments would each require some degree of specialization in their designated laboratory spaces from day one. Over time, external drivers, such as technological advances or shifts in industry standards, were certain to introduce new equipment and building requirements. Internal changes to department organization and operating procedures would also require flexibility in the offices as well as the laboratories. To satisfy these needs, VWSSH employed *demountable partition* walls and standardized *modular* work spaces, a system that had already proven successful at the Bell Telephone Labs and other suburban corporate campuses.

VWSSH employed two standard module types in all seven of the GPLs. The smaller modules, which measured 11 feet wide by 16 feet deep, were lined up along the north and south perimeter walls. These housed offices and only the most limited laboratory facilities. The larger modules were 24 feet deep but maintained the standard 11-foot width. These formed the core of each occupied floor and were fitted with the laboratory equipment and services specific to the needs of the particular department and division. At both the smaller office modules and larger laboratory units, the demountable partition walls could be removed to create a space double or triple the standard 11-foot width. The walls dividing two back-to-back lab spaces were also movable, allowing for lab spaces that were either 24 or 48 feet in length. Office modules were fixed at their standard 16-foot length.[26] By providing a reasonable number of alternative layouts, this modular system allowed the various departments a degree of flexibility and customization without adding unnecessary complications to the design and build-out.

Within each individual module, utilities and laboratory services were provided at standardized "positions" along demountable steel partition walls. For ease of planning, VWSSH directed that typical laboratory services were to be within the modular structure, concealed trenches in the floors provided necessary

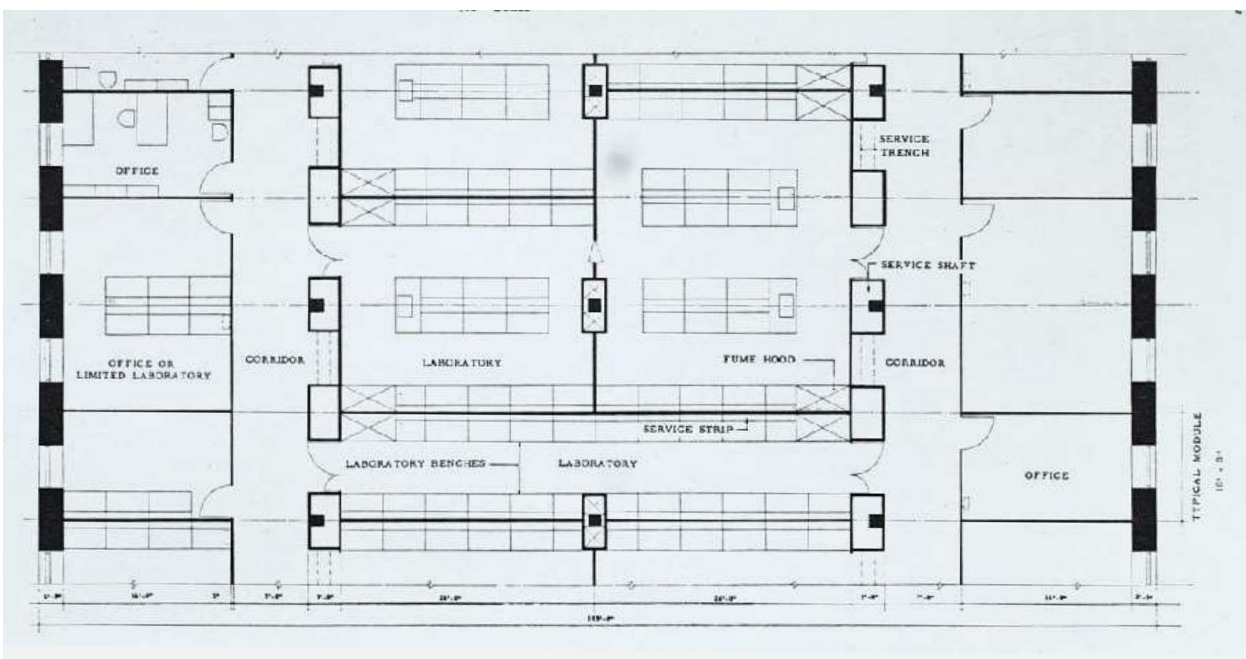

Figure A19: Schematic of laboratory arrangement. (Source: NIST)

[26] "Instructions for Part I. Rooms and Occupancy," (Form NBS 703, January 14, 1959), from "Exhibit 7. Policies and Instructions for Occupancy Worksheets," in Planning the NBS Facilities at Gaithersburg Maryland, (Washington, DC: National Bureau of Standards - Management and Organization Division, 1972), 1-3.

utilities and laboratory services at regular intervals. According to the planning documents supplied to each department chief, VWSSH strove to provide a "good deal of flexibility in adding to the services or changing them after the building is occupied."[27] Upon the dedication of the campus in 1966, the Technical News Bulletin touted that the GPLs were designed to be "adaptable to most scientific purposes and may be converted from one use to another, say from chemistry to electronics, with relative ease."[28]

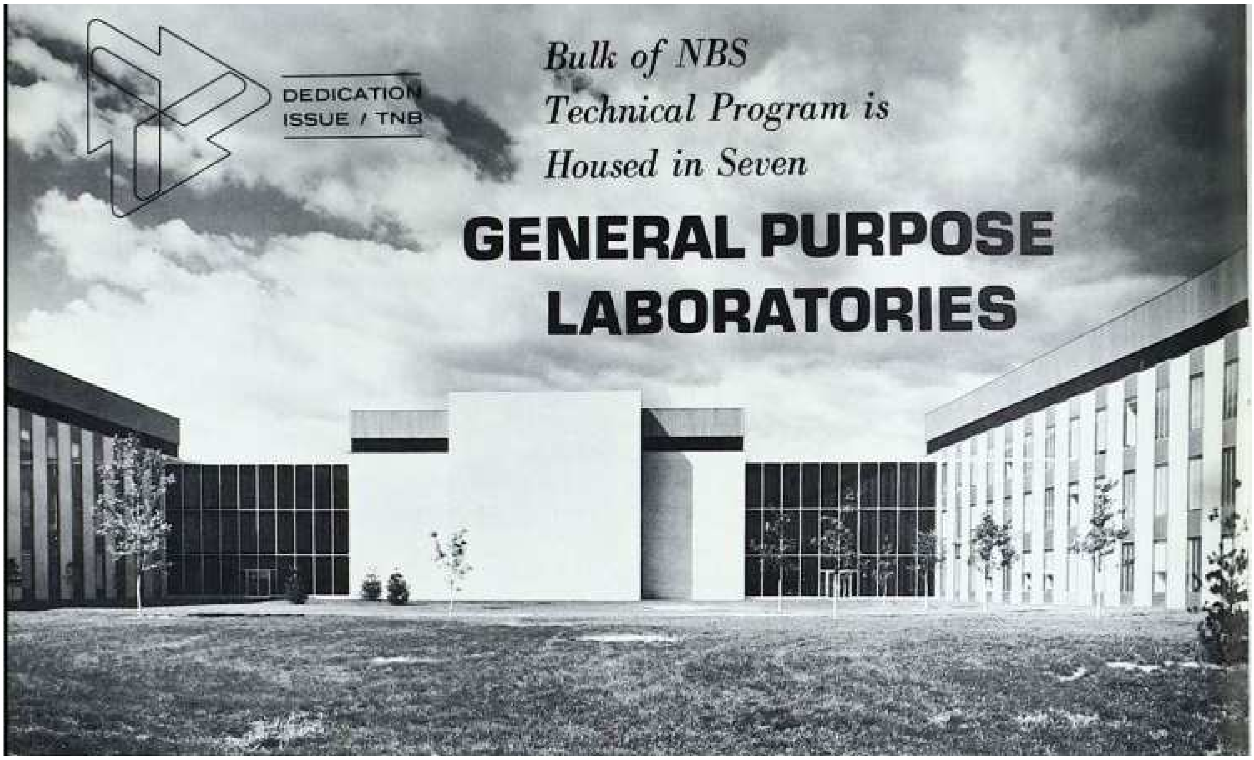

Figure A20: Cover image of the General Purpose Laboratories Dedication Issue, 1966. (Source: NIST)

The demountable partition walls in each modular unit concealed hollow chases at regular intervals where necessary utilities and laboratory services could be run with ease. The moveable partitions also allowed each department to add new services or alter existing to meet any new technological needs that might arise. Concealed service lines were accessed at numbered "positions" located roughly every four feet along the movable interior walls. The smaller offices contained eight service positions, while the larger laboratory modules had 12. The numbered positions were mirrored across the partition dividing two adjacent modules, so that position six in one module would line up with position six in its neighboring module. This mirroring limited redundant service lines by allowing neighboring modules to share, which would prove more efficient during construction and later maintenance than maintaining identical position layouts in each module. However, this system did require more upfront planning work and careful coordination between the scientists, administrators, and design team during design development.

To streamline this design process as much as possible, VWSSH recommended specific positions for some of the more common lab services, such as plumbed sinks and exhaust ducts. Chiefs of the various departments and divisions were instructed to fill out detailed "Occupancy Worksheets" and manually layout their desired positions for lab services on paper plans.

[27] Planning the NBS Facilities at Gaithersburg Maryland, 1-3
[28] NBS Technical News Bulletin, 206.

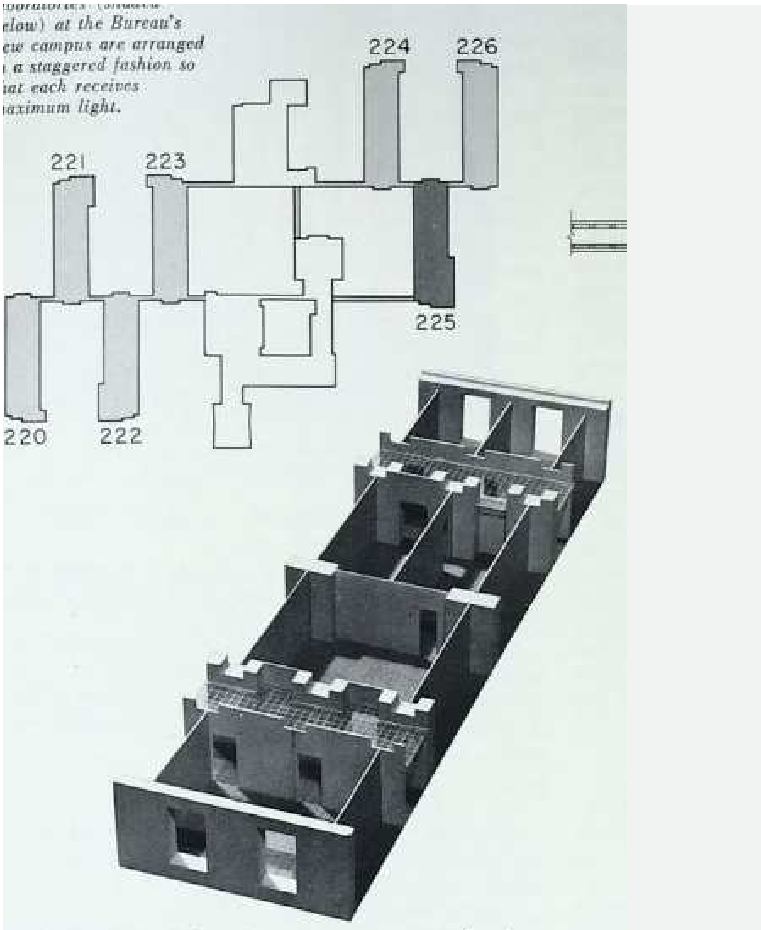

Figure A21: Rendering of a section of one of the GPL buildings illustrating the purposefully staggered doorways and windows which control natural light exposure. (Source: NIST)

In work spaces that were greater than one module wide, floor trenches allowed services to be run from the positions at the partition walls to peninsular or island work benches. This introduced another degree of flexibility into the modular framework. If services were only run through the moveable partition walls, larger laboratory spaces spanning multiple modules would have to make do with the same amount of service lines as a single-module laboratory. Trenches could be run out from partition walls a total length of 15’10-1/2”, allowing electrical, plumbing, and other laboratory services to reach work benches toward the center of the larger spaces.[29]

Specialty Rooms

VWSSH’s collaborative design process and the considerable, if limited, flexibility of the modular laboratory was able to meet the needs of most GPL activities. However, some divisions required stricter environmental controls, larger workspaces, or more specialized laboratory equipment than could be accommodated within the standard modular framework. Working closely with the scientists and administrative staff, VWSSH strove to identify these special laboratory requirements early in the design process and made necessary alterations in the modular layout to provide the necessary facilities and infrastructure. While the original design was both architecturally and engineering-wise advanced, it was soon eclipsed by ever growing needs to the emerging late 20th century scientific research lab as well as the ever-expanding areas of human knowledge requiring measurement and traceability from a physical to a largely electronic platform. For these reasons as well as the fact that so many of the original features have been improved over the years, renovation will require significant change to the individual laboratory, office and support facilities.

The Metrology (220), Physics (221), and Building Research (226) buildings required the greatest specialization in their layout and design. Both the Metrology and Physics Buildings were designed with subterranean basements to house especially sensitive measuring instruments that required a higher degree of shielding from external vibrations, electromagnetism, ferromagnetism, and temperature swings. Specifically, the Tape Calibration Facility – a 320-foot long, 11-foot wide, and 8-foot-high laboratory space in the Metrology Building – had to be constructed underground to maintain a more constant and uniform distribution of temperature. In the above-ground laboratory modules, narrow temperature controls needed to achieve precise and accurate instrument calibration simply were not feasible. Similarly, the spectroscopy

[29] “Laboratory Services and Facilities Manual,” 5.

labs in the Physics Buildings needed to be structurally isolated from the above-ground laboratory modules to prevent the transmission of vibrations that could interfere with the spectrometers' high-resolution readings.[30] The most precise instruments were also mounted on 18-inch isolated concrete floor sections, to further limit interference from external vibrations.[31]

The Building Research department required "high-bay" laboratory space in order to construct actual-size structural test models. Steel frame construction was necessary to execute the two- and three-story high-bay spaces that occupy the south half of Building 226.[32] The environmental engineering lab had the most unique design criteria. Located in the high-bay portion of Building 226, this laboratory space featured an undisturbed earth floor where researchers could construct a "a full-size house" and subject it to artificial

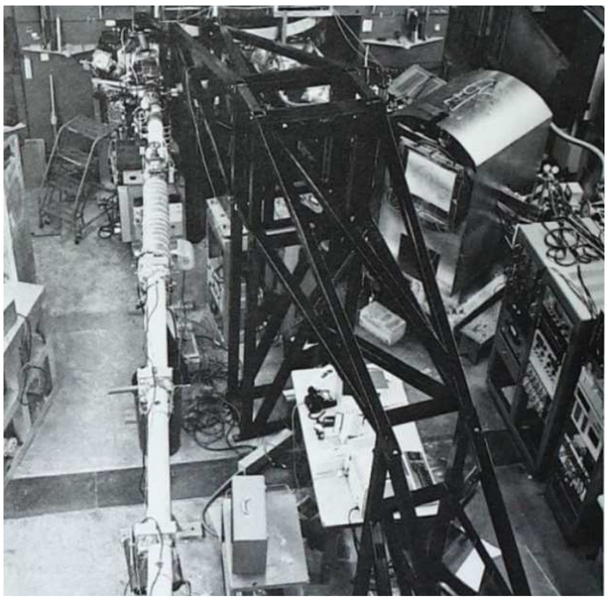

Figure A22: Synchrotron Ultraviolet Radiation Facility-II. (Source: Facilities of the National Bureau of Standards Brochure)

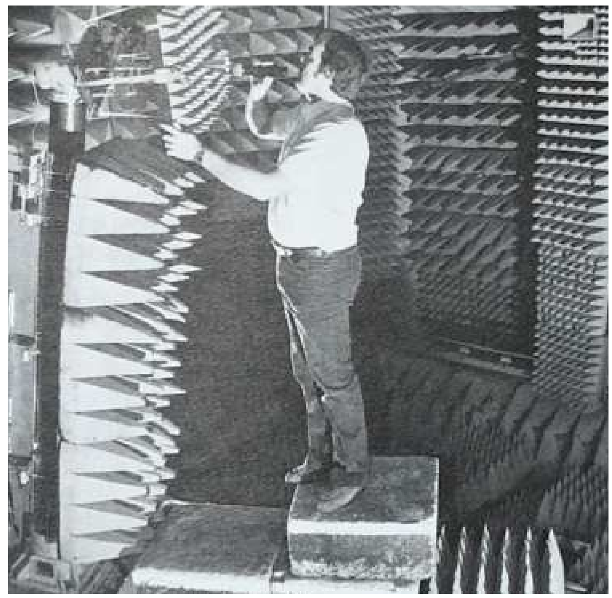

Figure A23: Near-Field Scanning Facility. (Source: Facilities of the National Bureau of Standards Brochure)

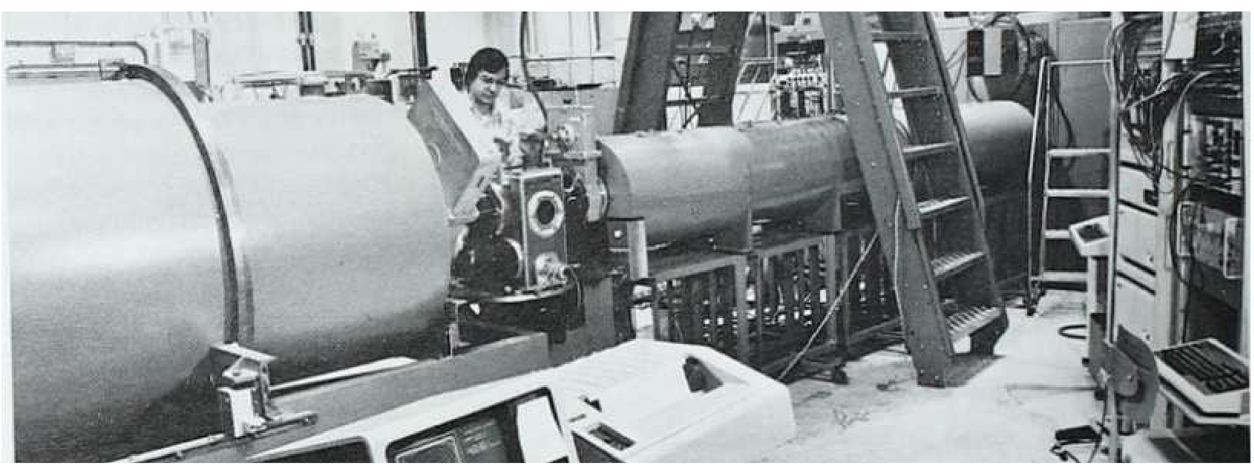

Figure A24: Small-Angle Neutron Scattering Facility. (Source: Facilities of the National Bureau of Standards Brochure)

[30] NBS Technical News Bulletin, 209.
[31] Catherine C. Atwood, "The Big Move: NBS Transfers to New Facility," *Journal of the Washington Academy of Science*s 56 (1966):. 29-30.
[32] NBS Technical News Bulletin, 207-208.

climate conditions, allowing them to test “anywhere on earth” without leaving the lab.[33]

General Purpose Labs Preservation

More than 50 years after their construction, the General Purpose Laboratory design principles put forth by Vorhees, Walker, Walker, Smith, and Haines proved effective. Creating buildings to house each department, easily facilitated campus connections from the concourses, and adaptable lab and office modules allowed the scientists to perform their work to the best of their abilities. As the GPLs adapt to meet the 21st- century laboratory needs, new criteria for technology, isolation barriers, and mechanical systems impart new design drivers for the rehabilitation of these historic buildings. The constraints of the original design coupled with modern innovation will allow NIST to preserve these iconic laboratories while continuing to draw talented scientists to perform the important work of the government’s mission.

[33] NBS Technical News Bulletin, 209.

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SECTION B:

CONSTRUCTION HISTORY

MTFA architecture

CONSTRUCTION HISTORY

Architect

After securing the 579-acre site in Gaithersburg, MD, the National Bureau of Standards recommended Vorhees, Walker, Walker, Smith, and Haines (VWWSH) of New York as the architect for the new campus. The U.S. General Services Administration considered proposals from several architectural engineering firms before finally selecting VWSSH.[1] The New York firm had a long-established reputation for designing large laboratory complexes and headquarters for both public and private leaders in science and technology. In 1885, the firm's founder, Cyrus L. W. Eidlitz, accepted a commission to design the Metropolitan Telephone Building in Manhattan. This project first established the firm's commitment to designing aesthetically pleasing and technically innovative buildings for the advancement of science and industry. By 1915, Eidlitz and his partner Andrew C. McKenzie had designed 61 buildings for the nascent telephone industry. In 1922, the firm designed its first of more than 500 laboratory buildings: a chemistry laboratory for Western Electric Company in New York City. Over the next three decades, the firm developed a reputation for designing scientific and technological facilities that were practical, adaptable, and aesthetically beautiful. These included the Barclay-Vesey Building (1926) in New York, the Argonne National Laboratory (1952) in Illinois, and the Goddard Space Flight Center (1961) in Maryland. Most significantly, VWSSH designed the Bell Telephone Laboratories, a groundbreaking scientific research campus in the New Jersey suburbs.[2] In their design of Bell Labs, VWSSH developed a revolutionary *modular*[3] laboratory system with moveable partitions that they would implement to great success at the NIST Campus, especially in the design of the General Purpose Laboratories (GPL).

Architectural Description as Originally Built

After deciding to relocate in 1955, NIST determined that the new headquarters should be in a suburban location a convenient distance from Washington, DC. With the country in the midst of the Cold War, the Federal government required that the new site be at least twenty miles from the White House, given the possibility of nuclear attack. NIST also required a more rural setting to provide a buffer against electrical interference and mechanical vibrations from neighboring buildings. The site would also be automobile-centric, with multiple entrances from major roadways and ample parking lots. The NBS administration envisioned a self-sufficient university-like campus with several smaller buildings instead of one large structure.[4] This would allow the various research departments greater flexibility in designing their individual facilities.

In their design for the GPL, VWHSS balanced the convenience and cost-efficiency of repetitive, modular design with specific departments' requirements for specialized, purpose-built facilities. At first glance, the seven GPL buildings appear to be identical. All seven are reinforced-concrete construction with three full stories, a basement, a penthouse, and an unfinished attic. Some buildings also have a sub-basement level. The first three stories are clad in buff brick with aluminum windows and *spandrel pane*ls set within regular punched openings. The attic story is clad in vertical aluminum panels with louvers. The typical core of each GPL is approximately 120-by-395 feet, with the long axis running east-to-west and perpendicular to the north-south *concourses*.

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[1] Robert S. Walleigh, "The Gaithersburg Site," *NIST Special Publication 825: NBS/NIST – A Historical Perspective*, ed. Karma A. Beal (Gaithersburg: NIST, 1991), 50-51.
[2] HLW is one of the oldest design firms still in practice. It was founded in 1885. "Highlights of 100 Years," (New York: HLW Architecture).
[3] Definitions of italicized words are found in Section G.
[4] Walleigh, 49-50.

The arrangement of the GPL buildings relative to the main Administration Building 101 and the rest of the campus emphasizes two seemingly contradictory design drivers for the new campus: (1) the need for ample space and relative seclusion and (2) a focus on inter-departmental communication and collaboration. The seven GPL buildings are situated around the central Administration Building 101 in a balanced, asymmetrical grouping that echoes the arrangement of the various wings of Building 101 around its inner court yard. Buildings 220 through 223 lie to the south of Building 101. Buildings 224 through 226 are north and slightly to the west of Building 101. A north-south corridor of glass-and-aluminum concourses connect the GPL to one another and back to Building 101. Along with Buildings 101 and 304, the GPL and their network of concourses form a large quadrangle, which playfully mimics the inner court at the center of Building 101, only on a much larger scale. This centralized quadrangle is itself bounded on four sides by the principal vehicular thoroughfares on campus – North Drive, South Drive, East Drive, and West Drive. The result is a feeling of a campus within a campus – each building distinct from and dependent on the others.

Figure 1: Current Map of NIST Gaithersburg Campus. Notice the comparison of the courtyard at Building 101 (Cyan) with the perceived courtyard of the GPL (Magenta). (Map Source: NIST)

The GPL buildings are clad in beige face brick to distinguish them from the red-brick support buildings. The beige brick is the same as the cladding on the office tower of Building 101. Other similarities in exterior detailing – such as the vertical bands of plate-glass windows and aluminum *spandrel panels*, further relate the GPLs aesthetically back to Building 101. However, exterior detailing and cladding are far less decorative for the utilitarian GPL buildings. Vertical aluminum louvers at the attic level are the most striking element of the GPL façade. Other subtle decorative details include the limestone *coping* at the penthouses and stair towers and the white marble date stone set in brickwork at the main entrance lobbies.


Figure 2: Beige brick, aluminum spandrels, and louvers typical of the GPL International Style design. (Image: MTFA 2021)

Though more utilitarian and less high style than Building 101, the GPL buildings remain excellent examples of the modernist *International Style*. This architectural movement was well-established by the time architects VWSSH began designing the campus in the late 1950s. The International Style first appeared in Europe during the 1920s as a response to the more ornate styles of earlier periods. As such, the style rejected nonessential ornamentation. To create visual interest, practitioners relied on the layering of rectilinear forms and the juxtaposition of asymmetrical window groupings with smooth, unbroken wall planes. A “horizontal feeling” was another defining characteristic of the style. Banded windows and cantilevers emphasized the horizontal dimension over the vertical. The style also developed as a celebration of the industrial age combining man-made materials, such as concrete, glass, and steel, with natural materials. Structural concrete and steel members were frequently displayed as part of the final design, rather than clad in a more decorative material as they would have been in the past.[5]

Buildings 220-226 are the seven original General Purpose Laboratories for the National Institute of Standards and Technology campus in Gaithersburg, Maryland. Each building has three full stories and an attic mechanical level with select buildings including a basement and sub-basement. The typical GPL floor plan consists of figure eight-shaped circulation corridors with offices and bathrooms found along the outer loop and laboratory, mail room, and kitchen spaces located at the inner loop.

The International Style – with its clean lines, use of modern materials, and rejection of unnecessary ornamentation – expressed the Institute's dedication to innovation and advances in technology while respecting the need for a pared down, economical design. Throughout the buildings, there is minimal applied ornament. Instead, VWSSH used a grouping of rectilinear forms and the interplay of various materials, including aluminum, plate glass, brick, granite, and limestone, to create visual interest. Within the modernist aesthetic, VWSSH utilized spatial organization, circulation, outdoor space, and glass to create the inviting and invigorating academic atmosphere NIST desired.

Exterior

In keeping with the tenets of the International Style, the GPLs feature hardly any exterior ornamentation. Instead, a simple palette of contrasting cladding materials produces visual interest and accomplishes the main tenets of the style. These include the expression of function through materials and form and an overall feeling of horizontality.

Exterior cladding materials include glazed beige brick, gray *anodized aluminum*, and plate glass. Though a relatively limited palette, the pronounced variety of textures creates visual interest. Brick is the main cladding material across the exterior, especially at the mostly windowless east and west elevations. On the north and south elevations, columns of brick cladding alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. The use of brick *cladding* on the first three floors of each GPL identifies these as occupied floors. By contrast, the aluminum cladding and louvered panels at the attic level indicates this is unfinished space that houses electrical and mechanical equipment. The aluminum cladding at the attic level also creates a heavy horizontal banding, which emphasizes the long, low-rise profile of the buildings themselves. The use of cantilevered awnings at the main entrance lobbies further develops this feeling of horizontality.

The main entrance to each GPL is located at either the east or west end, depending on which elevation is attached to the connecting concourses. The formal entrances are located at the opposite end of the building from the concourse. Secondary entrances are found at the internal stair halls located toward the building's midpoint on its north and south facades. Another secondary entrance is found at the stair tower on the concourse end of the building. Aluminum-and-glass storefront construction distinguishes the first-floor formal entrance from all other portions of the exterior façade.

Typical Interior Spaces and Design

The typical interior layout of each of the seven GPLs follows a simple and repetitive pattern. Modular office spaces are arranged around the perimeter walls and laboratory spaces at the center of each floor. Two long corridors divide the interior laboratory spaces from the offices on either side. Three short passages connect the two main corridors – one at west end, one at the east, and one at the center of the building. Stair halls and elevators are located at the east and west end of each building. Bathrooms and two additional

[5] Poppeliers, 127-130.

egress stairs are grouped around the central cross passage on each floor. The fourth-floor attic space was specifically designed to house state-of-the-art air conditioning, ventilation, and filtration equipment.[6]

The GPLs utilize two standard module types in all seven buildings. The smaller modules, measuring 11 feet wide by 16 feet deep, are lined up along the north and south perimeter walls. These spaces house offices and only the most limited laboratory facilities. Larger modules measure 24 feet deep but maintain the standard 11-foot width. These form the core of each occupied floor and are fitted with laboratory equipment and services specific to the needs of the particular department and division. At both the smaller office modules and larger laboratory units, the *demountable partition* walls can be removed to create a space double or triple the standard 11-foot width. The walls dividing two back-to-back lab spaces are also moveable, allowing for lab spaced that are either 24 or 48 feet in length. Office modules are fixed at their standard 16-foot length.

Original finish materials were utilitarian and hard-wearing. This includes acoustical ceiling tiles, vinyl asbestos tile floors, enameled steel partition walls, steel doors, and glazed structural facing tile. There was a discernible preference for unitary finish systems – such as acoustical ceilings and vinyl floor tiles – that could be replaced one-by-one in the event of damage, rather than monolithic systems such as plaster, which required more labor-intensive patch repairs.

Perhaps the most ingenious use of interior finishes was in the original wayfinding methods. While it streamlined the design and construction processes, the repetitive modular design and long corridors could be disorienting, especially to visitors or newer staff members. VWSSH used colorful finish materials to improve wayfinding without reverting to cumbersome signage. Contrasting colors of structural facing tile at either end of the long main corridors distinguished the concourse end of the building from the external end. Similarly, different colors of enamel on the steel wall partitions were used to differentiate between the different floors of a building.

Special Laboratory Spaces

Some of the disciplines on the NIST campus require special facilities to perform their research. The Metrology GPL (220) provides for Physical Measurement and Engineering Laboratories and includes an extended basement on the south for tape metrology and retro-reflectance research which requires a linear configuration.[7] The Physics GPL (221) is dedicated to Physical Measurement and Material Measurement Laboratories. The basement of this facility has been modified and expanded from its original rectangular footprint to accommodate spectroscopy suites and LBIR facility support. As of 2013, 7,400 square feet of office space had been utilized for lab functions at the basement level, illustrating a potential opportunity for improvement in space utilization in relation to special laboratories.[8] The Technology GPL (225) has been modified to house the Central Computing Facility.[9] The Building Research GPL (226) is exclusively used by the Engineering Laboratory. While it is deemed a General-Purpose Laboratory, it does include laboratories with high-bay areas which are necessary for structural test equipment. These high-bay laboratories still include typical finishes of other GPL Buildings, yet ceilings reach higher than 14 ft.[10] Due to change in research requirements over time, many of these special laboratories are no longer of use in the current configuration and offer potential to gain space on upper levels.[11]

[6] "Laboratory Services and Facilities Manual," in *Planning the NBS Facilities at Gaithersburg Maryland,* (Washington, DC: National Bureau of Standards - Management and Organization Division, 1972), 1.

[7] "Overview of Major Buildings" in *Space Utilization Study – Gaithersburg Campus Summary Report,* (Metropolitan Architects and Planners, Inc. with SST Planners, Inc, June 2013), 20.

[8] Ibid, 21

[9] Ibid, 21

[10] "General Profile of Laboratory Facilities," in *Research Facilities Strategic Plan - Executive Report,* (Metropolitan Architects and Planners, Inc., December 2014), 23.

[11] "Overview", *Space*, Metropolitan, 21

GPL CONSTRUCTION CHRONOLOGY - TIMELINE OF IMPORTANT MILESTONES

Drawings, Specifications, archival photographs and records documenting and augmenting the following milestones may be available for viewing upon request from the Federal Preservation Officer in the NIST Office of Facilities and Property Management and or the Reference Librarian in the Information Services Office.

1955	The National Bureau of Standards (NBS) decides to relocate to a newly constructed campus outside of Washington, DC.
1956	The federal government acquires a 560-acre site in Gaithersburg, MD. The General Services Administration selects VWSSH architects of New York to design the new campus.
1959	NBS begins collecting information from all departments concerning their space requirements and specific equipment needs in the new facilities.
1960	VWSSH present their plans and models for the new facility to NBS. Groundbreaking for Phase I of construction takes place.
1962	Construction begins on Phase III, which includes the seven original General Purpose Laboratories. Construction also begins on Phase II, which includes the Administration Building, Radiation Physics Laboratory, and multiple service buildings.
1965	The Director's Office moves to the newly completed Administration Building,
1966	Acquisition of Building 220 Metrology Building 221 Physics, Building 222 Chemistry, Building 223 Materials, Building 224 Polymers, Building 225 Technology, Building 226 Building Research
11/15/1966	The campus dedication ceremony is held in the Library Courtyard, between the Library and Building 225.
1988	The Omnibus Trade and Competiveness Act (Public Law 100-418) mandates agency name change from the National Bureau of Standards to the National Institute of Standards and Technology (NIST)1989. In response to an incident resulting in injury on the NIST campus in Boulder, Colorado, the Gaithersburg Campus undergoes a comprehensive risk assessment. Mechanical hazards, overcrowding, and procedural deficiencies are noted and a plan put in place for future mitigation.
1991	Smith, Hinchman, & Grylls (now SmithGroup) completes a comprehensive Capital Improvement Facilities Plan for both the Gaithersburg and Boulder campuses.
1999	Building 227 ACSL.
2000 -01	GPL 221, 223, 224: Installation of Data Communications Wiring
2002	GPL 221: Renovation of Elevator 1
2003	GPL 224: Corridor waterproofing membrane.
	GPL 225: Replacement of roof between 225 and 226, replacement of concourse east curtain wall, and electrical upgrade including the replacement of transformers/switchgears.

2004-05	GPL 220: Building renovations including the repair and replacement of conveying systems, elevator 1 replacement, and renovations to the PL Teaching Lab.
	GPL 221: Building renovations and electrical upgrades including a replacement of the transformer switchgear, upgrade to elevator 2, renovation to ACU 6, replacement of canopy roof, and general GPL space renovations.
	GPL 222: Building interior completely renovated including mechanical and electrical systems. Single glazing units were replaced with double glazing units.
	GPL 223: Renovation of ACU 1 and 5, repair and replacement of conveying systems, renovation of ACU 3 and 8.
	GPL 224: Repair to conveying systems and replacement of elevator.
	GPL 225: Renovation of ACU8, repair phase II of conveying systems, and roof replacement.
	GPL 226: Renovation of ACU 4, installation of test cabling system, repair and replacement of conveying systems. Renovation of ACU 3 and 5, phase I of electrical upgrade.
2006	GPL 221: Renovations to rooms A206-A210, B261-B263, and the relocation of B14-B20 Machine Shop.
	GPL 222: Roof Replacement, installation of lab waste system, electrical upgrades, and renovate ACU 3 and retrofit E-3.
2007	GPL 221 and 224: Replacement of the penthouse and elevator room roofs.
	GPL 222: Complete telecommunications, installation of handicap bathroom, demo and repair work to shop 30, electrical fit-up, window and roof design, installation of flowmeters and temperature sensors, telecommunication service fit-up, server and network upgrade, and general purpose renovations.
	GPL 223: Replacement of penthouse roof.
	GPL 225: General Office Renovations.
	GPL 226: Design/replace transformer and switchgear and remove existing no frost tank.
2008	GPL 220, 223, 224, 225, 226: Lab Vacuum Pumps replaced.
	GPL 221: Renovation of ACU 8 and 9.
	GPL 222: Modifications for technology services.
	GPL 223: Renovation of ACU10.
	GPL 225: Renovation of ITL Offices A109-A229 (old clean room) and the installation of fence around the CCF generator and chiller.
	GPL 226: Upgrade of elevator 2 and HVAC system.
2009	GPL 220: Tape ACU-16 Replaced.
	GPL 222: Installation of Liebert AC Unit in room B251 and renovation for AML move-in.
	GPL 224: Renovation of ACUs 3, 7, 8, and 9.

	GPL 225: Power to central computing facility.
	Windows located on the north side of Building 226 were replaced and renovation of ACUs 1 and 2.
2010	GPL 221: Renovations to B253 and B255 as well as lab modifications to rooms B361-B365.
	GPL 222, 225: 10 ton AC Unit installation in room B045.
	GPL 227: Replacement of 4 perchloric hoods.
2011	GPL 220: Reserve Space (Rm A220) refurbished.
	GPL 221: Renovations to Rooms B351, B353, and A353.
	GPL 225: Upgrades to AC units, power, and the installation of new UPS.
	GPL 226: High bay renovation, design/replace office HVAC system, and replace ACU15.
2012	GPL 221: Cooling Closet Network Closet.
	GPL 222: New air handler unit purchased.
	GPL 227: Installation of parking lot solar panels as well as cooling closet network closet.
2013	HVAC upgrades to GPL 220, 221, 223, 224, 225, 226
	GPL 220: ACU 18A Replacement.
	GPL 224: ACU-2A rebuild.
	GPL 227: Upgrade of the Seimens automation processor.
2014	GPL 227: Argon Infrastructure.
2015	GPL 220, 221, 223, 224 roof replacement.
	GPL 224: Design and replacement of after burner.
	GPL 225: Installation of Intelligenty Building Agency Research Laboratory in R.
2016	GPL 226: Replacement of VFDs in AHUs.
2017	GPL 220 installation of CPS test bed server room and smart grid test bed.
	GPL 221 Elevator motor replacement.
	GPL 225: Roof replacement.
	GPL 226: Renovation of Lab B339-341 with electrical upgrade, replacement of ACU 18, and the conversion of high bay to office space (WO2723)
2018	The Gaithersburg campus undergoes a comprehensive environmental assessment. NIST publishes the "Gaithersburg Campus Master Plan," which details four alternatives for future expansion and development, including additions and renovations to the GPLs.
	NCPC and MHT approve NIST Comprehensive Gaithersburg Campus Master Plan and accompanying Environmental Assessment – Plan details preferred option for expansion to meet mission which includes preservation of all structures while renovating and expanding the GPLs (among other research facilities.)

	GPL 223, 225: Spine elevator modernization.
	GPL 227: Replacement of UPS systems and the installation of Biolab in room B155.
2019	GPL 220 Penthouse install network protector load monitoring.
	GPL 222, 224: Spine Elevator modernization.
	GPL 227: Elevator upgrades and steam generator replacement.
2020	GPL 220, 221, 222, 223, 224, 225, and 226 - NIST Integrated Master Plans Implementation Report issued to prioritize capital projects between both Boulder and Gaithersburg campuses in support of congressional funding appropriation requests
2021	GPL 221 Relocation Fit-Up of ITS-90 Lab.
	August 6, 2021 – NIST Gaithersburg Campus entered into the NRHP with each of the GPLs noted as Contributory Resources to the 579 plus acre NRHD.
2022	GPL 222: Detailed Program of Requirements and Performance Specifications developed for a comprehensive Rehabilitation of the original structure as well as an addition for administrative and support (non-lab) functions, as prescribed in the 2018 Gaithersburg Campus Master Plan

Original Exterior and Structural Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Limestone	• Coping ○ Buildings 220-226: North and South Elevations column lines 1-3 and 32-36; ○ Building 220, 222, 225: East Elevation column lines C-K; West Elevation column lines E-H ○ Building 221, 223, 224, 226: East Elevation column lines E-H; West Elevation column lines C-K	Indiana Limestone Company	Bloomington, Indiana
Brick, Face – Grey PBS No. 36-797 (original; no longer available) Elgin Butler #500 Cordova Cream Mod F/B Belden Cordova Cream Matte Mod F/B	• Wall Cladding at all levels on East and West stairs towers and rooftop penthouse on Bldgs. 220-226	Pacific Building Systems Potomac Valley Brick	Woodburn, Oregon Rockville, Maryland
Aluminum Type 1 – Anodized Natural Fine Satin	• Cornice, Fascia, Coping, Gravel Stop, Entrance & Concourse Mullions at Bldgs. 220-226		
Aluminum Type 2 – Alcoa #2020 Gray	• Spandrel, Coping, and Window Frames at Bldgs. 220-226 • Roll-up, Swing, and Sliding Doors and Frames at Bldgs. 220-226	Alcoa Corporation	Pittsburgh, Pennsylvania
Aluminum Type 3 – Alcoa Duranodic Medium (Black)	• Wall Panels at all elevations of Bldgs. 220-226	Alcoa Corporation	Pittsburgh, Pennsylvania
Porcelain Insulated Steel Panels – PBS #25352 Light Blue	• North and South Elevations at Bldgs. 220-226	Pacific Building Systems	Woodburn, Oregon

Original Exterior and Structural Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Steel – Painted, Black	• Exterior Ladder at Mechanical Room (Bldgs. 220-226)		
Glass Type 1 – Polished Plate, clear, 1/4”	• Aluminum Entrance Doors, Windows, and Entrance Side Lights at Bldgs. 220-226	Pittsburgh Plate Glass Co.	Pittsburgh, Pennsylvania
Glass Type 4 – Tinted Plate, Solar Gray No. 4, 3/8”	• Curtain Wall at Concourses	Pittsburgh Plate Glass Co.	Pittsburgh, Pennsylvania
Composition Roofing Type 1 – Built Up, Gravel Slag	• Roof over Penthouse (Bldgs. 220-226)		
Composition Roofing Type 2 – Built Up, Bluestone Chips	• Roof over all locations except Penthouse (Bldgs. 220-226)		
Flashing Type 1 – Copper, Natural	• Exterior Wall and Parapet at Penthouse (Bldgs. 220-226)		
Flashing Type 2 – Lead-Coated Copper, Natural	• Parapet at Roof (Bldgs. 220-226)		
Granite Type 2 – Chelmsford Gray, Light Gray, or Light Gray, shot ground	• Entrance Platform Date Stone	Fletcher, Swenson, or Mt. Airy	Westford, Massachusetts; Concord, New Hampshire; Mt. Airy, North Carolina

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Brick, Glazed – Grey PBS No. 36-797	• Walls at Entrance Lobby (Bldgs. 220-226) • Walls at Concourses	Hanley Brick Company	Bradford, Pennsylvania
Concrete Masonry Unit – smooth texture, (concave 3/8-inch joint), painted, 36586 Beige at Attic, 27778 Warm White at all other locations	• Walls and Base at Telephone & Electrical Closets, Elevator Machine Room, Elevator #1 Penthouse, Corridor in Penthouse, Signal Control Room, Elevator Shaft Storage Room, Distillation Room, Mechanical Equipment Rooms, Electrical Equipment Room, and Attic (Bldgs. 220-226) • Base at Goniometer Room & Vestibule, and Photometry Range & Vestibule (Bldg. 220) • Walls at Tape Calibration Lab, Tape Laboratory Workroom, Optical Range Office and Office B27 Module 003C, 005C (Bldg. 220) • Walls at Thermal Conductivity Test Room, Testing Machine Lab, Structural Test Room, Heat Research Lab, Specimen Prep Lab, Structural Heat Transfer Room, Heat and Vapor Transfer Room, Compressor Room, Air Conditioning & Heating Pump Lab, Air Handler Rooms Space 235 & 239, Observation Room, Limited Lab, Hardened Concrete Lab, Refrigerated Component Standards Lab, and Test Rooms No. 1 & 2 (Bldg. 226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Walls and Base at Cylinder & Grind Capping Room (Bldg. 226) • Walls at Area Processing Room (Bldgs. 221, 225) • Walls at Rowland Circle, Spectrograph, and Dark Room Vestibule (Bldg. 221) • Walls at Modules 02B and 104B (Bldg. 224)		
Concrete Walls and Ceilings, Integral - Monolithic with surface rubbed smooth, integral, painted 27778 Warm White at Walls	• Walls at Electric Vaults, Mechanical Equipment Rooms, Elevator, Elevator Shafts, and Signal Vaults (Bldgs. 220-226) • Walls at Tape Calibration Lab and Tape Laboratory Workroom (Bldg. 220) • Base at Testing Machine Lab, Structural Fabrication lab, Structural Test Room, Heat Research Lab, Specimen Prep Lab, Structural Heat Transfer Room, Heat and Vapor Transfer Room, Apparatus Room, Cylinder & Grind Capping Room, and Compressor Room (Bldg. 226)		
Concrete Floor, Monolithic – smooth	• Floor at Telephone and Electrical Closets, Elevator Machine Room, Elevator #1 Penthouse, Corridor in Penthouse, Signal Control Room, Elevator Shaft, Storage Room, Distillation Room, Mechanical Equipment Room, Electrical Equipment Room, Attic, Stairs to Mechanical equipment Rooms in Sub-Basement & Basement, Electrical Vault, Signal Vault,		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	and Receiving Area (Bldgs. 220-226) • Floor at Acid Storeroom, Chemicals Storeroom, and Isotope Storeroom (Bldg. 222) • Floor at Simulation Lab (Bldg. 225) • Floor at Self Service Storeroom (Bldgs. 221, 222, 225) • Floor at Goniometer Room & Vestibule, and Photometry Range & Vestibule (Bldg. 220) • Floor at 2nd & 3rd Floor Labs (Bldg. 226)		
Concrete Floor, Heavy Duty Integral Topping – Smooth	• Floor at Testing Machine Lab, Structural Fabrication Lab, Structural Test Room, Heat Research Lab, Specimen Prep Lab, Structural Heat Transfer Room, Heat & Vapor Transfer Room, Apparatus Room, Cylinder & Grind Capping Room, Compressor Room, Environment Engineer Lab, Refrigerator Lab, Outdoor Condition Lab, Outdoor Condition Lab, Refrigerated Component Standards Lab, Test Room No. 1 & 2, Air Handled Room Space, Air Conditioning & Heating Pump Lab, Air Handler Rooms Space 235&239, and Curing Chamber (Bldg. 226)		
Glass Type 5 – Polished straight welded, wired, clear, 1/4”	• Door Lites at Utility Closets and Stairs (Bldgs. 220-226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Glass Type 7 – Wired, obscure, 1/4”	• Baffles at Toilet Rooms (Bldgs. 220-226)		
Glass Type 8 – clear	• See door schedule	DSA Doors	Raleigh, NC
Aluminum Type 6 - Anodized natural fine satin	• Window Trim at Offices, Laboratory & Reserve Spaces, Toilets, Toilet Vestibules, Stair No. 1-4, and Conference Rooms (Bldgs. 220-226) • Door Trim, Window Trim, and Radiator Enclosure at Entrance Lobby (Bldgs. 220-226) • Door and Trim at Vestibule 101A (Bldg. 225) • Exterior Doors, Window Trim, Window Stools, Base at Floors 1-3, and Radiator Enclosure at Concourses • Window Trim at Shower and Dressing Room (Bldg. 224) • Base at Basement Floor (Bldg. 225) • Full-Lite Glazed Doors (Bldgs. 220-226) • Wall Handrail at Concourses		
Steel (type – see specs) – baked on enamel, 24516 Light Blue	• Shop Furniture (Bldgs. 220-226)		
Steel (type – see specs) – baked on enamel, 24300 Dusty Green	• Door at Women’s Toilet Vestibule (Bldgs. 220-226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Steel (type – see specs) – baked on enamel, 24201 Olive doors at Stairs, Basement & Sub-Basement)	• Doors at Stair No. 1-4, Basement, and Sub-Basement (Bldgs. 220-226)		
Steel (type – see specs) – baked on enamel, 23727 Pale Yellow (door at Men's Toilet Vestibule)	• Door at Men's Toilet Vestibule (Bldgs. 220-226)		
Steel (type – see specs) – baked on enamel, 25189 Cadet Blue	• Doors at Vending Machine Room and Storage Room (Bldgs. 220-226)		
Steel (type – see specs) – baked on enamel, 22246 Light Vermilion	• Doors at Offices, Laboratory & Reserve Spaces, Conference Rooms, Telephone and Electrical Closets, Elevator Machine Room, Elevator #1 Penthouse, Corridor in Penthouse, Signal Control Room, Elevator Shaft Storage Room, Distillation Room, Mechanical Equipment Rooms, Electrical Equipment Room, Service Closets, Women's Restroom, Attic, Elevator Shafts & Stairs to Mechanical Equipment Rooms in Sub-Basement & Basement, Safety Closets, Electric Vaults, Signal Vaults, and Receiving Area (Bldgs. 220-226) • Interior Doors at Concourses • Door and Water Closet at Toilets (Bldgs. 220-226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Doors at Acid Storeroom, Chemicals Storeroom, and Isotope Storeroom (Bldg. 222) • Doors at Simulation Lab (Bldg. 225) • Doors at Self Service Storeroom (Bldgs. 221, 222, 225) • Doors at Shower and Dressing Rooms (Bldg. 224) • Doors at Office B27 Modules 003C & 005C, Goniometer Room & Vestibule, Photometry Range Room & Vestibule, Optical Range Office, Tape Calibration Lab, and Tape Laboratory Workroom (Bldg. 220) • Doors at Limited Lab, Hardened Concrete Lab, Observation Room, Testing Machine Lab, Structural Fabrication Lab, Structural Test Room, heat Research Lab, Specimen Prep Lab, Structural Vapor Transfer Room, Heat & Vapor Transfer Room, Apparatus Room, Cylinder & Grind Capping Room, Compressor Room, Thermal Conductivity Test Room, Variable Humidity Lab A (Module 237B), and Variable Humidity Lab B (Modules 113B & 115B) (Bldg. 226) • Door and Trim at Curing Chamber (Bldg. 226) • Door at Area Processing Room (Bldgs. 221, 225)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Doors at Rowland Circle, Spectrograph, and Dark Room Vestibule (Bldg. 221)		
Steel (see specs) – painted, 24201 Olive (Risers, Stringers, Handrails, Interior Ladders)	• Door Trim at Corridors, Cross Corridors, Vending Machine Room, Toilets, Toilet Vestibules, Telephone and Electrical Closets, Elevator Machine Room, Elevator #1 Penthouse, Corridor in Penthouse, Signal Control Room, Elevator Shaft Storage Room, Distillation Room, Mechanical Equipment Rooms, Electrical Equipment Room, Service Closets, Women's Restroom, Attic, Elevator Shafts, Safety Closets, Electric Vaults, Signal Vaults, Stairs to Mechanical Equipment rooms in Sub-Basement and Basement, and Receiving Area (Bldgs. 220-226) • Door Trim at Concourses • Door Trim at Shower & Dressing Room (Bldg. 224) • Door Trim at Acid Storeroom, Chemicals Storeroom, and Isotope Storeroom (Bldg. 222) • Door Trim at Simulation Lab (Bldg. 225) • Door Trim at Self Service Storeroom (Bldgs. 221, 222, 225) • Door Trim at Area Processing Room (Bldgs. 221, 225) • Door Trim at Rowland Circle, Spectrograph, and Dark Room Vestibule (Bldg. 221)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Door Trim at Limited Lab, Hardened Concrete Lab, Observation Room, Testing Machine Lab, Structural Fabrication Lab, Structural Test Room, heat Research Lab, Specimen Prep Lab, Structural Vapor Transfer Room, Heat & Vapor Transfer Room, Apparatus Room, Cylinder & Grind Capping Room, Compressor Room, Thermal Conductivity Test Room, Variable Humidity Lab A (Module 237B), and Variable Humidity Lab B (Modules 113B & 115B) (Bldg. 226) • Door Trim at Office B27 Modules 003C & 005C, Goniometer Room & Vestibule, Photometry Range Room & Vestibule, Optical Range Office, Tape Calibration Lab, and Tape Laboratory Workroom (Bldg. 220) • Window Stools and Radiator Enclosures at Stair No. 1-4, Toilets, and Toilet Vestibules (Bldgs. 220-226) and Shower & Dressing Rooms, (Bldg. 224) • Soffits at Stairs to Mechanical Equipment rooms in Sub-Basement and Basement (Bldgs. 220-226) • Radiator Enclosures at Stairs to Mechanical Equipment rooms in Sub-Basement and Basement (Bldgs. 220-226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Platform Field & Base at Stairs to Electrical Power Vaults and Mechanical Equipment Room (Bldgs. 222, 226) • Well & Wall Handrails at Stairs to Electrical Power Vaults and Mechanical Equipment Room (Bldgs. 222, 226) and Stairs to Mechanical Equipment rooms in Sub-Basement (Bldgs. 220-226) • Risers, Well & Wall Stringers, Facias, and Railings at Stairs to Electrical Power Vaults and Mechanical Equipment Room (Bldgs. 222, 226), Stairs to Mechanical Equipment rooms in Sub-Basement & Basement and Stair No. 1-4 (Bldgs. 220-226) • Structural Frame Members at Attic (24241 Teal Blue) (Bldgs. 220-226)		
Steel Partition – baked on enamel, 27778 Warm White (Walls), 26306 Silver Gray (Base), 24227 Medium Green (Cross Corr. No. 1 & 4), 23727 Pale Lemon (Toilet Partition and Doors)	• Walls and Base at Office, Laboratory & Reserve Spaces, Corridors, Cross Corridors, Safety Closets, and Conference Rooms (Bldgs. 220-226) • Window Stools and Radiator Enclosures at Office, Laboratory & Reserve Spaces, and Conference Rooms (Bldgs. 220-226) • Metal Partition and Partition Door at Toilets (Bldgs. 220-226) • Walls at Observation Room (Bldg. 226)		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Steel Partition – baked on enamel, 22276 Coral	• Metal Partition at End Corridor (Bldgs. 222, 225)		
Steel Partition – baked on enamel, 20400 Gold	• Metal Partition at End Corridor (Bldgs. 221, 224)		
Steel Partition – baked on enamel, 25352 Light Blue Spruce	• Metal Partition at End Corridor (Bldgs. 220, 225, 226)		
Stainless Steel (see specs)	•		
Wood Type 1 – natural finish, White Oak Parquet plain sawed	• Well & Wall Handrail at Stair No. 1-4 (Bldgs. 220-226)		
Acoustical Ceiling Tile – type IIA perforated aluminum, 12” x 24”, white	• Ceilings at Corridors, Cross Corridors, and Vending Machine Room (Bldgs. 220-226) • Ceiling at Office B27 Module 003C & 005C (Bldg. 220) • Ceiling at 101A (Bldg. 225) • Ceiling at Concourses • Ceiling at Refrigerated Components Standards Lab and Test Rooms No. 1 & 2 (Bldg. 226) • Ceiling at Space B32 and Spectroscopy Area (Bldg. 221)		
Acoustical Prefab Unit – type VA mineral plaster, 12” x 12”, gray on white	• Ceiling at Entrance Lobby, Office, Laboratory & Reserve spaces, and Conference Rooms (Bldgs. 220-226)	Owens-Corning Fiberflas Corporation	Toledo, Ohio

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Ceiling at Thermal Conductivity Test Room (Bldg. 226) • Ceiling at Area Processing Room (Bldg. 221, 225) • Ceiling at Floor 1 Module 158B & 160B (Bldg. 222)		
Cement Coat Waterproofing, Metallic, Smooth, painted 27778 Warm White at Walls	• Floor and Walls of Elevator Pit, Stair Treads, and Landings at Elevator Pit (Bldgs. 220-226) • Floor and Stair at Sub-Basement and Basement (Bldgs. 220-226) • Stairs to Electrical Power Vaults & Mechanical Equipment Rooms (Bldgs. 226, 222)		
Fireproof Plaster – smooth, painted, 27778 Warm White	• Ceiling at Electrical Equipment Room, Corridor, and Distillation Room in Penthouse (Bldgs. 220-226)		
Gypsum Plaster – smooth painted	• Ceiling at Air Conditioning & Heat Pump Laboratory and Air Handler Rooms Space 235 & 239 (Bldg. 226)		
Keene's Cement Plaster – smooth hard white painted	• Ceiling at Receiving Area (Bldgs. 220-226) • Ceiling at Acid Storeroom, Chemicals Storeroom, Isotope Storeroom (Bldg. 222) • Ceiling at Simulation Lab (225) • Ceiling at Self Service Storeroom (Bldgs. 221, 222, 225) • Ceiling at Curing Chamber, Variable Humidity Lab A (Module 237B) and Variable		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	Lab B (Module 113B & 115B) (Bldg. 226)		
Ceramic Floor Tile, Unglazed, 1” x 1” – 6013 Cream, 5014 Sombrero, 6011 Yellow, satin finish	• Floor at Toilets and Toilet Vestibules (Bldgs. 220-226) • Floor at Shower and Dressing Room (Bldg. 224)	U.S. Ceramic Tile	
Ceramic Wall and Base Tile, Glazed Interior 4-1/4” x 4-1/4” –73 White, satin finish	• Walls and Base at Toilets and Toilet Vestibules (Bldgs. 220-226) • Walls and Base at Shower and Dressing Room (Bldg. 224)	U.S. Ceramic Tile	
Structural Facing Tile Wall and Base, Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3” x 12”, G127 Burnt Orange Gloss	• Accent Wall at Stair Landing (Bldgs. 220-226) • Wall and Base at Core No. 1 (Bldgs. 220-226)	Arketex	Brazil, Indiana
Structural Facing Tile Wall and Base, Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3” x 12”, DS70 Straw Yellow Satin	• Walls and Base at Curing Chamber, Variable Humidity Lab A (Module 237B) and Variable Humidity Lab B (Modules 113B & 115B) (Bldg. 226)	Arketex	Brazil, Indiana
Structural Facing Tile Wall and Base, Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3” x 12”, DS90 Ice Blue Satin	• Walls and Base at Vending Machine Room (Bldgs. 220-226)	Arketex	Brazil, Indiana
Structural Facing Tile Wall and Base,	• Wall and Base at End Corridor (Bldgs. 221, 224)	Arketex	Brazil, Indiana

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3" x 12", DS109 Azure Blue Satin			
Structural Facing Tile Wall and Base, Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3" x 12", S103 Goldenrod Yellow Satin	• Wall and Base at End Corridor (Bldgs. 222, 225)	Arketex	Brazil, Indiana
Structural Facing Tile Wall and Base, Opaque Ceramic Glazed –satin matt, smooth texture, 5-1/3" x 12", G106 Honeygold Gloss	• Wall and Base at End Corridor (Bldgs. 220, 225, 226)	Arketex	Brazil, Indiana
Structural Facing Tile Wall and Base, Unglazed – smooth texture, 5-1/3" x 12", Manganese Grey Shade	• Walls and Base at Receiving Area (Bldgs. 220-226) • Walls at Service Closets (Bldgs. 220-226) • Walls and Base at Acid Storeroom, Chemicals Storeroom, and Isotope Storeroom (Bldg. 222) • Walls and Base at Simulation Lab (Bldg. 226) • Walls and Base at Self Service Storeroom (Bldgs. 221, 222, 225)	Arketex	Brazil, Indiana
Structural Facing Tile, Opaque Ceramic Glaze – smooth texture, 5-	• Walls and Base at Stairs to Mechanical Equipment Rooms in Sub-Basement & Basement (Bldgs. 220-226)	Arketex	Brazil, Indiana

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
1/3" x 12", DS25 Twilight Grey Satin	• Walls and Base at Stairs to Electrical Power Vaults & Mechanical Equipment Rooms (Bldgs. 226, 222) • Walls at Vestibule 101A (Bldg. 225) • Wall and Base at Concourses • Walls at Stair No. 1-4 (Bldg. 220-226)		
Wall Covering, Vinyl on Plaster, Vicrtex V-280 Studio, 7056 Avocado	• Walls at Entrance Lobby (Bldgs. 220-226)	L.E. Carpenter and Company	New York, New York
Wall Covering, Vinyl on Plaster, KL 5610 Aqua	• Accent Wall at Women's Restroom	Gilford, Inc.	New York, New York
Wall Covering, Vinyl on Plaster, KL 5605 Wheat	• Walls at Women's Restroom	Gilford, Inc.	New York, New York
Vinyl Base, Preformed, 4" cove, M1103 Grey	• Base at Women's Restroom (Bldgs. 220-226) • Base at Observation Room, Limited Lab, Hardened Concrete Lab, and Thermal Conductivity Test Room (Bldg. 226) • Base at Area Processing Room (Bldgs. 221, 225) • Base at Optical Range Office, Tape Calibration Lab, Tape Laboratory Workroom, and Office N27 Modules 0030 & 0056 (Bldg. 220)	Mastic Tile Corporation of America	Houston, Texas

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	• Base at Rowland Circle, Spectrograph, and Dark Room Vestibule (Bldg. 221) • Base at Modules 02B & 104B (Bldg. 224) • Base at Basement Floor (Bldg. 225) • Base at Floors 1-3 of Concourses		
Thermal Ceiling and Wall, 5/8" Gypsum Board	• Ceiling at Rowland Circle, Spectrograph, and Dark Room Vestibule (Bldg. 221)		
Quarry Tile (Floor), Abrasive, flush with finish top, 6" x 6" – Canyon Red, Unglazed	• Floor at Service Closets (Bldgs. 220-226) • Floor at Variable Humidity Lab (Module 237B) and Variable Humidity Lab B (Modules 113B & 115B) (Bldg. 226)	Murray Tile Company, Inc.	Lewisport, Kentucky
Quarry Tile (Base), Vitreous, 5" x 6" – Canyon Red	• Base at Service Closets (Bldgs. 220-226)	Murray Tile Company, Inc.	Lewisport, Kentucky
Terrazzo Floor and Base (NTMA Plate 104) – Black and White Chips in Grey Cement	• Floor and Base at Entrance Lobby (Bldgs. 220-226)	National Terrazzo and Mosaic Association, Inc.	Fredricksburg, Texas
Terrazzo Precast Stair Treads – (V. Foscato 2049) Light Terra Cotta Chips on White Cement	• Treads, Platform Base & Field at Stair no. 1-4 (Bldgs. 220-226)	V. Foscato, Inc.	Long Island, New York
Terrazzo Floor – (V. Foscato 2049) Light Terra Cotta Chips on White Cement	• Floor and Base at Stair No. 1-4 (Bldgs. 220-226) • Floor and Base at Vestibule 1014 (Bldg. 225)	V. Foscato, Inc.	Long Island, New York

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
Vinyl Asbestos Tile (9" x 9") - #912 Granville Taupe	• Floor at Office, Laboratory, Conference Rooms, Vending Machine Room, and Reserve Laboratory spaces (Bldgs. 220-226) • Floor at Thermal Conductivity Test Room, Limited Lab, Hardened Concrete Lab, and Observation Room (Bldg. 226) • Floor at Area Processing Room (Bldg. 221, 225) • Floor at Optical Range Office, Tape Calibration Lab, Tape Laboratory Workroom (Bldg. 220) • Floor at Rowland Circle, Spectrograph, Dark Room Vestibule (Bldg. 221)	Kentile	Brooklyn, New York
Vinyl Asbestos Tile (9" x 9") - #901 Groton White	• Floor at Corridors, Cross Corridors and Women's Restroom (Bldgs. 220-226) • Floor at Concourses	Kentile	Brooklyn, New York
Linoleum – Battleship, 1003 Grey	• Floor at Modules 02B and 104B (Bldg. 224)	Congoleum Nairn	Salem, New Jersey
Cement - Abrasive	• Treads, Platform Base & Field at Stairs to Mechanical Equipment Room in Sub-Basement and Basement (Bldgs. 220-226) • Treads at Stairs to Electrical Power Vaults and Mechanical Equipment Rooms (Bldgs. 226, 222)		
Insulated Wall and Ceiling	• Ceiling, Walls, and Doors at Environment Engineer Lab, Refrigerated Lab, Outdoor Condition Lab, Apparatus Room, Refrigerated Component Standards Lab,		

Original Interior Materials			
Element/Item	Location in Building	Supplier	Source/ Headquarters
	Test Rooms No. 1 & 2, Air Handled Room Space (Bldg. 226) • Walls and Ceilings at Air Conditioning and Heat Pump Laboratory and Air Handler Rooms Space 239 & 235 (Bldg. 226)		

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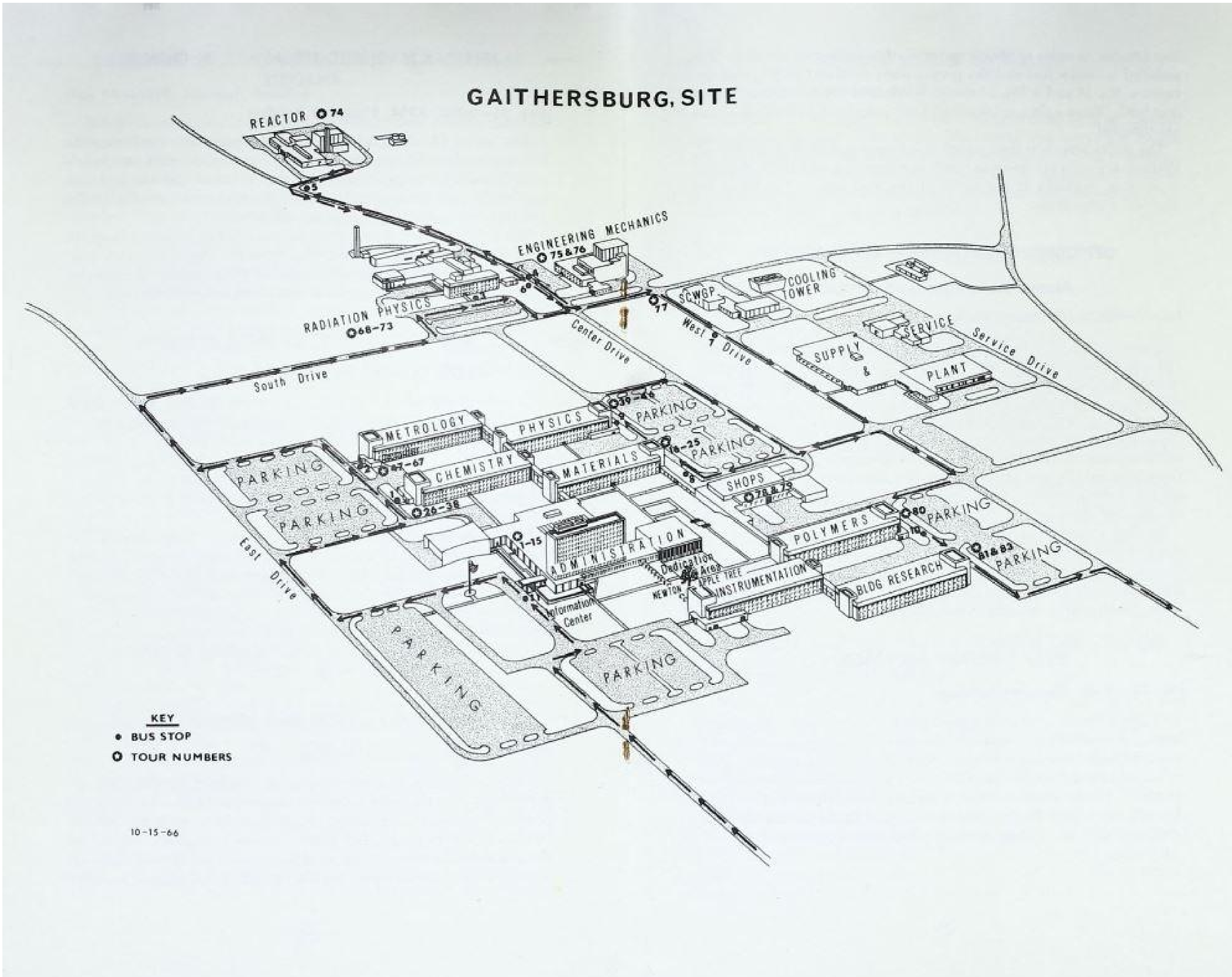
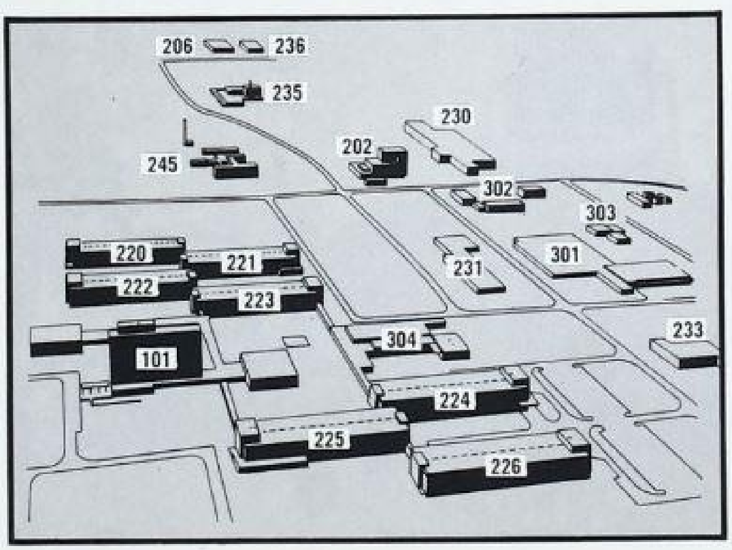


NBS Campus (Gaithersburg) Site Map
NIST Library Vertical Files - Gaithersburg Campus. 1966



View of the 565-acre NBS site at Gaithersburg, Maryland, showing the 15 major buildings already completed and 4 others in early stages of construction.

101 Administration
202 Engineering Mechanics
220 Metrology
221 Physics
222 Chemistry
223 Materials
224 Polymer
225 Instrumentation
226 Building Research
235 Nuclear Reactor
245 Radiation Physics
301 Supply and Plant
302 Power Plant
303 Service Building
304 Instrument Shops
206 Concreting Materials*
230 Fluid Mechanics*
231 Industrial*
233 Sound*
236 Hazards*

*Under construction or planned.

NBS Campus (Gaithersburg) Site Photo Map and Building Number Key
NIST Library Vertical Files - Gaithersburg Campus. 1966

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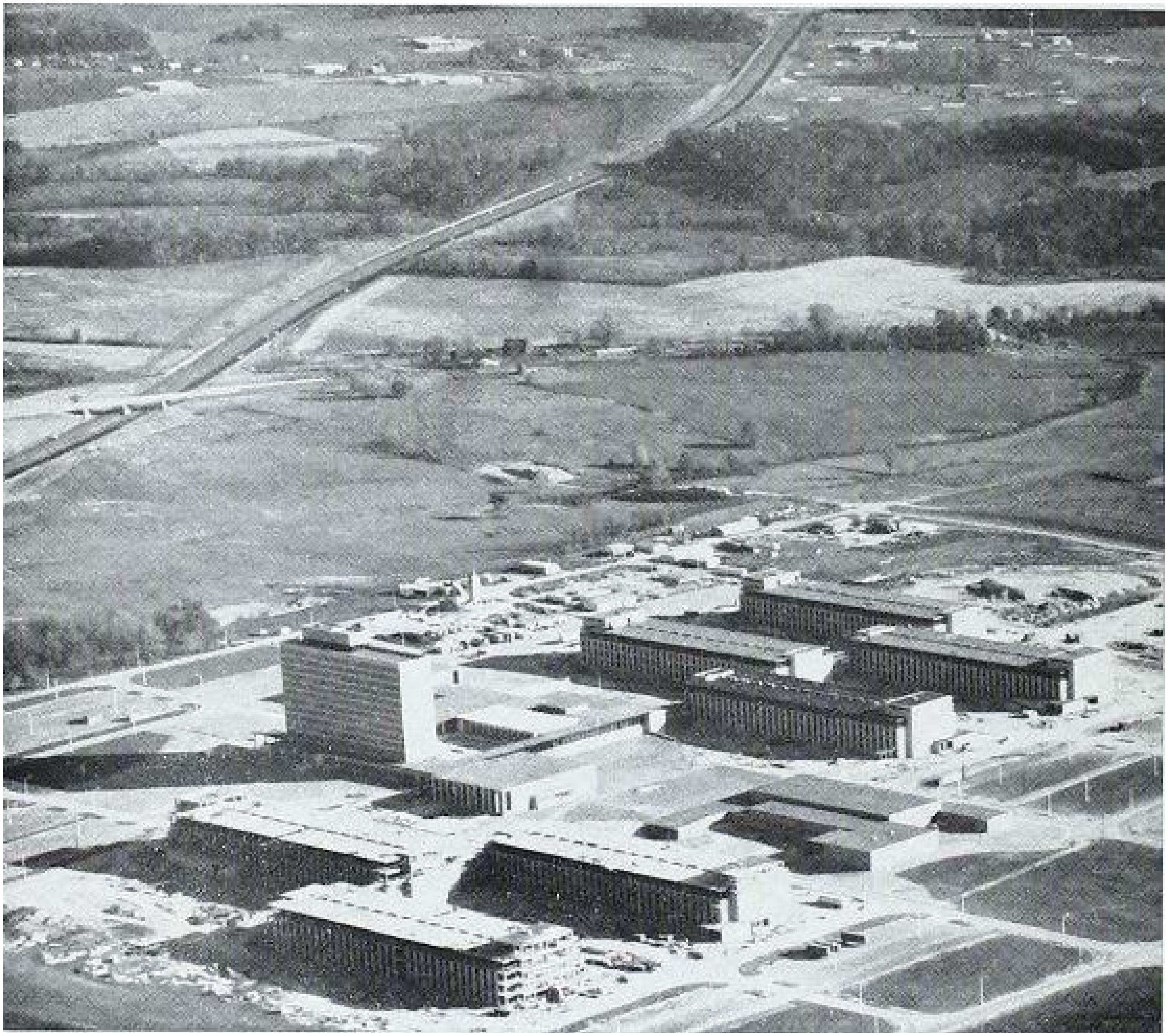

NBS Campus (Gaithersburg) Site Photo Looking SE while GPLs 224 - 226 are under construction
NIST Library Vertical Files - Gaithersburg Campus. 1964

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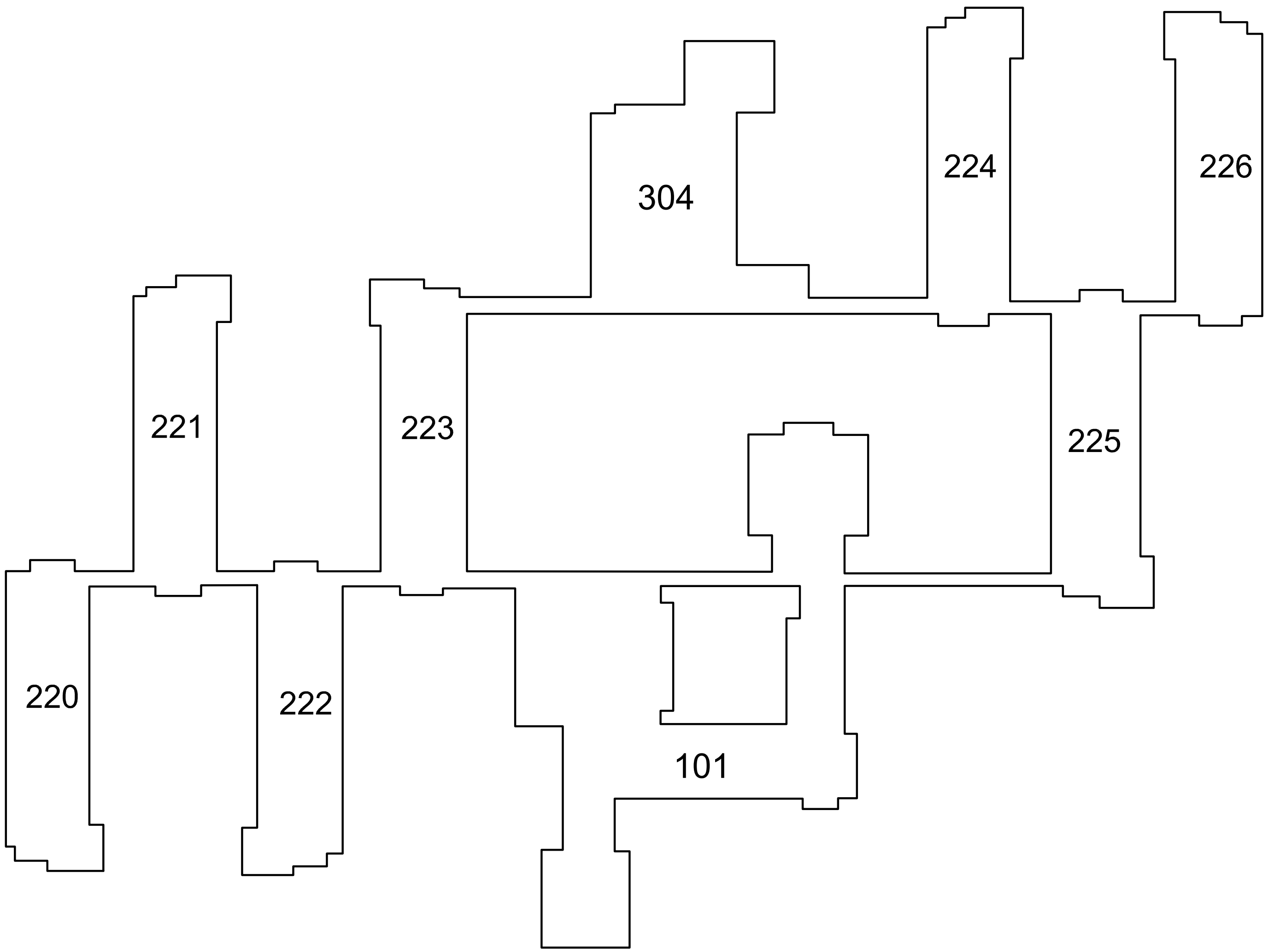

NBS Campus (Gaithersburg) GPL Site Plan
Rendered by MTFA. 2021

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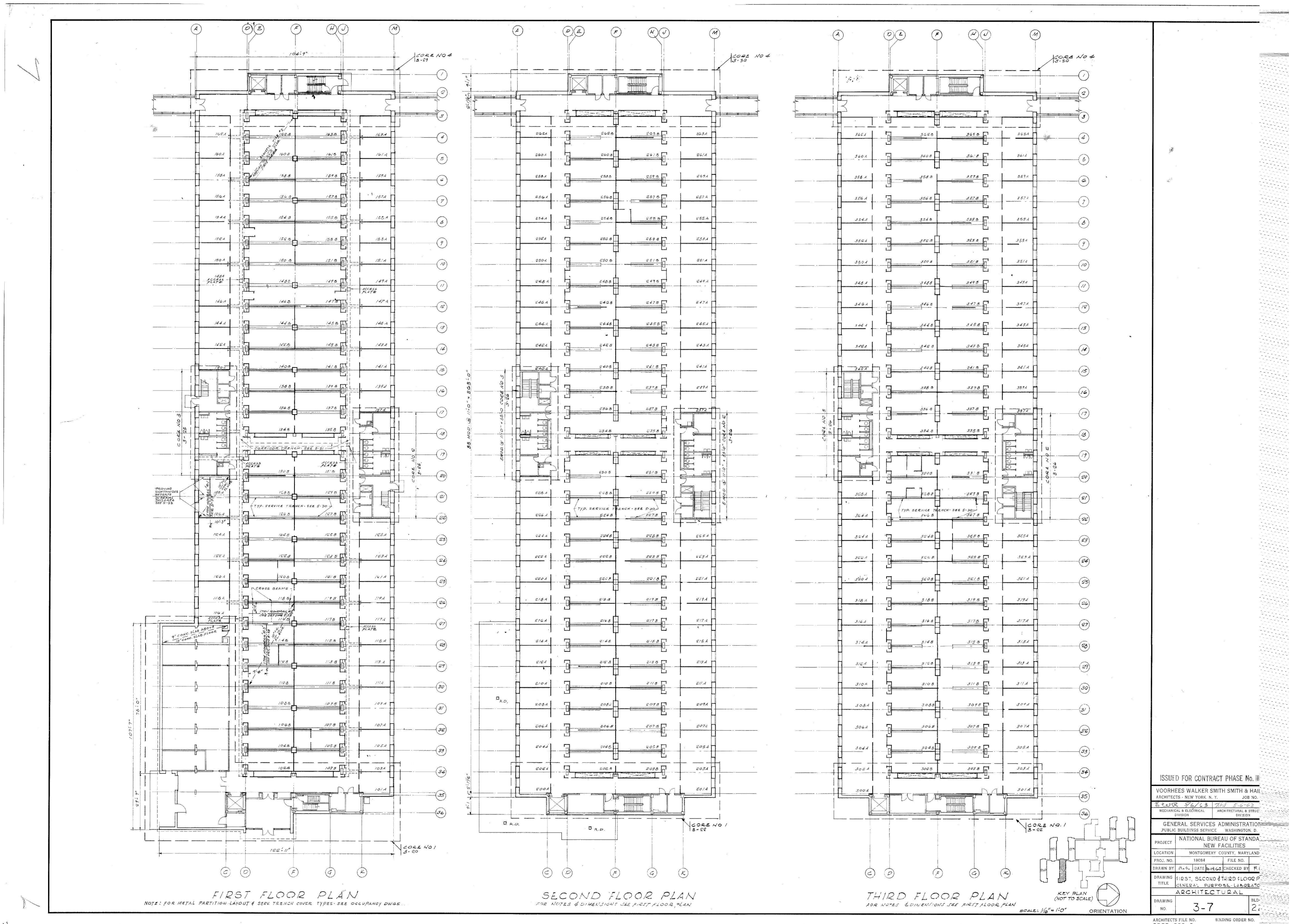

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Building 222 First, Second, and Third Floor Plans

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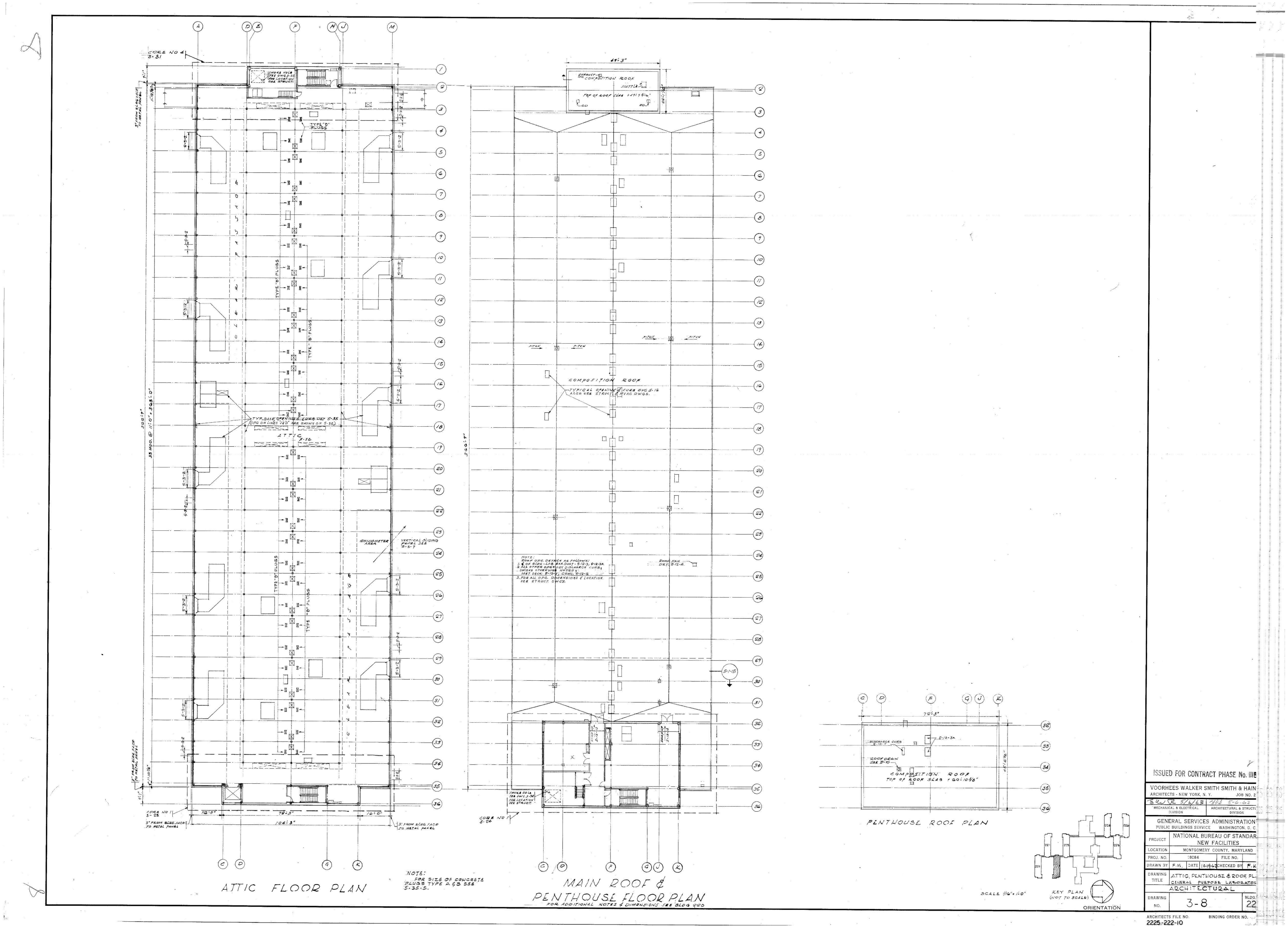

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Building 222 Attic, Penthouse, and Roof Plans

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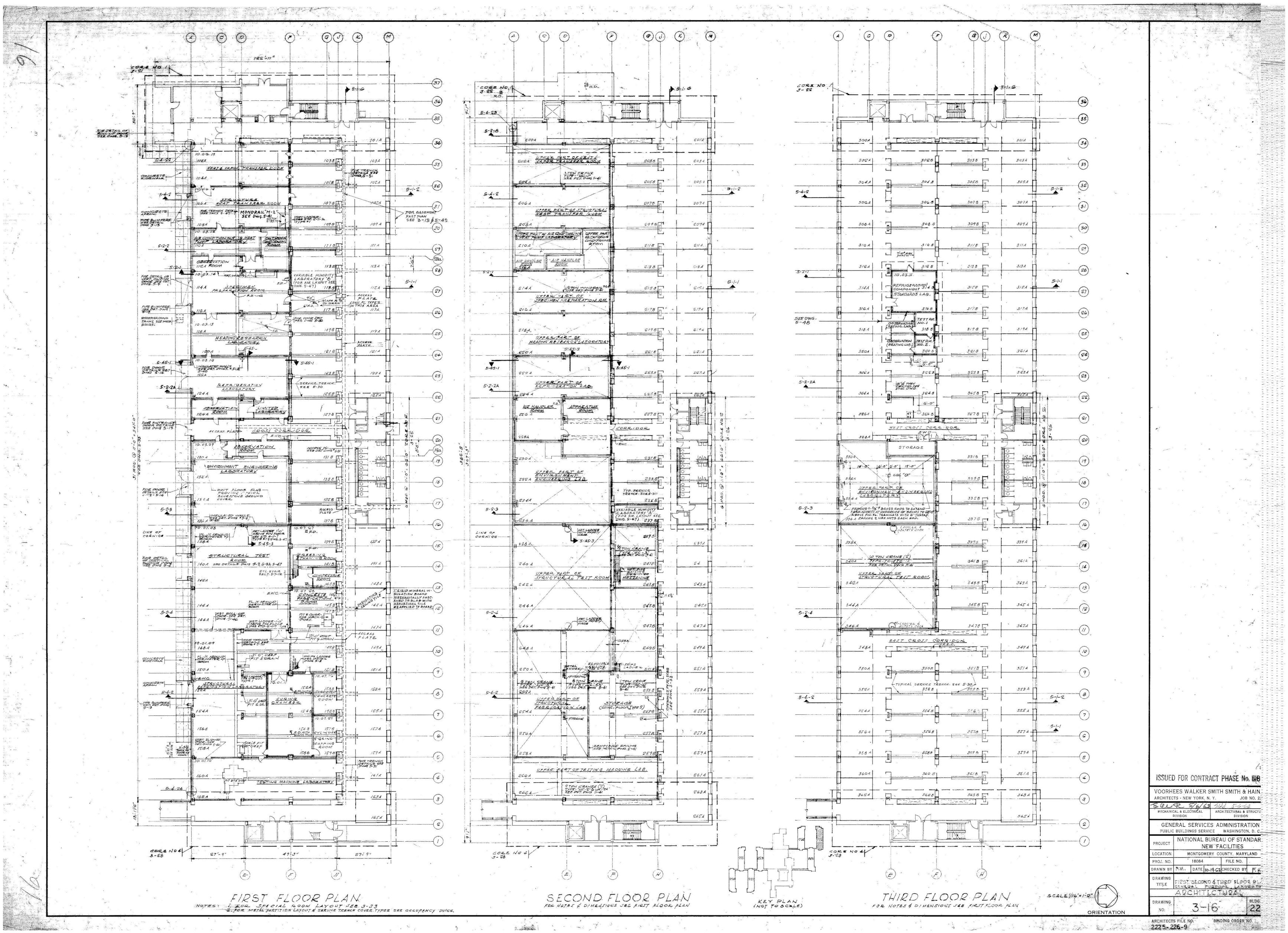

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Building 226 First, Second, and Third Floor Plans

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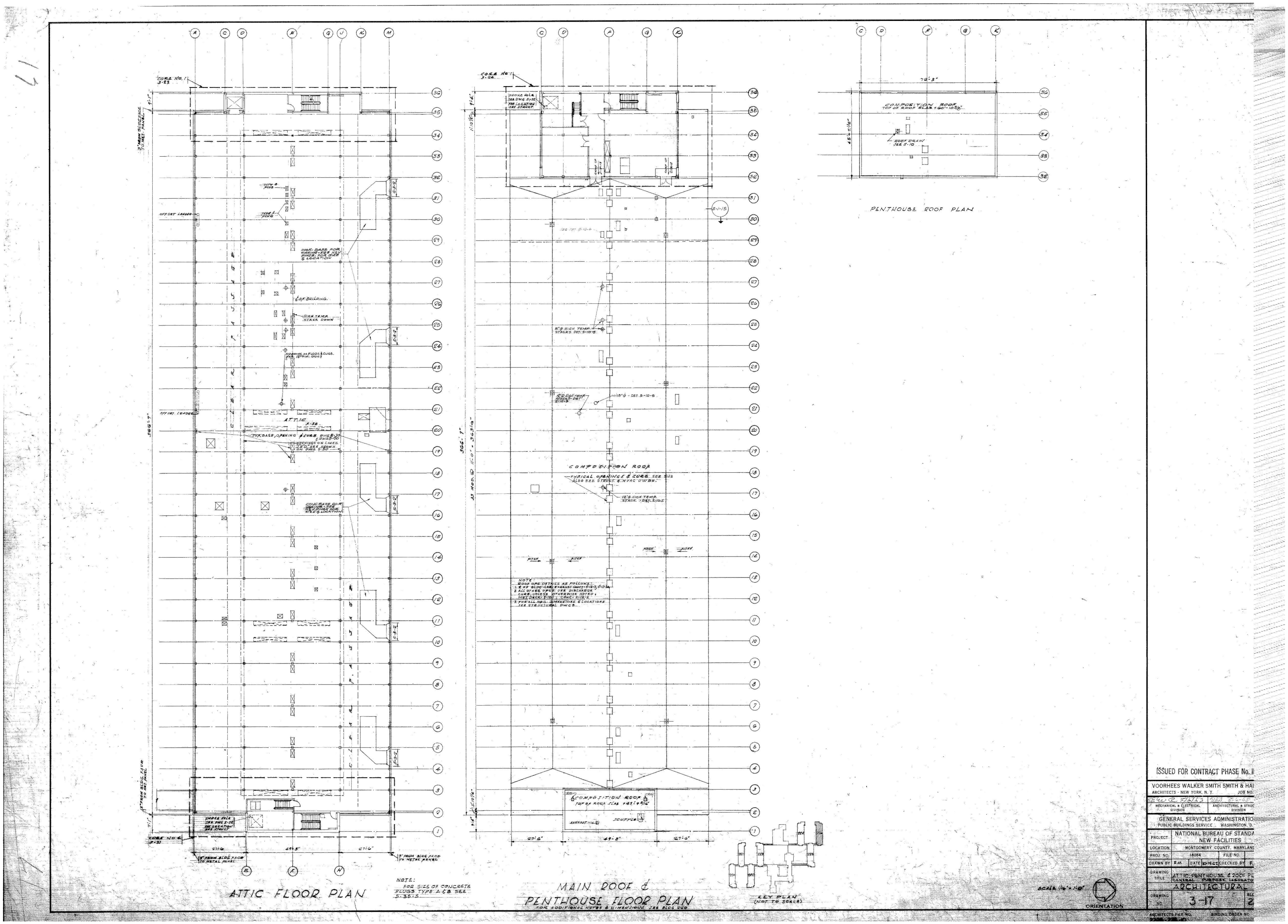

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Building 226 Attic, Penthouse, and Roof Plans

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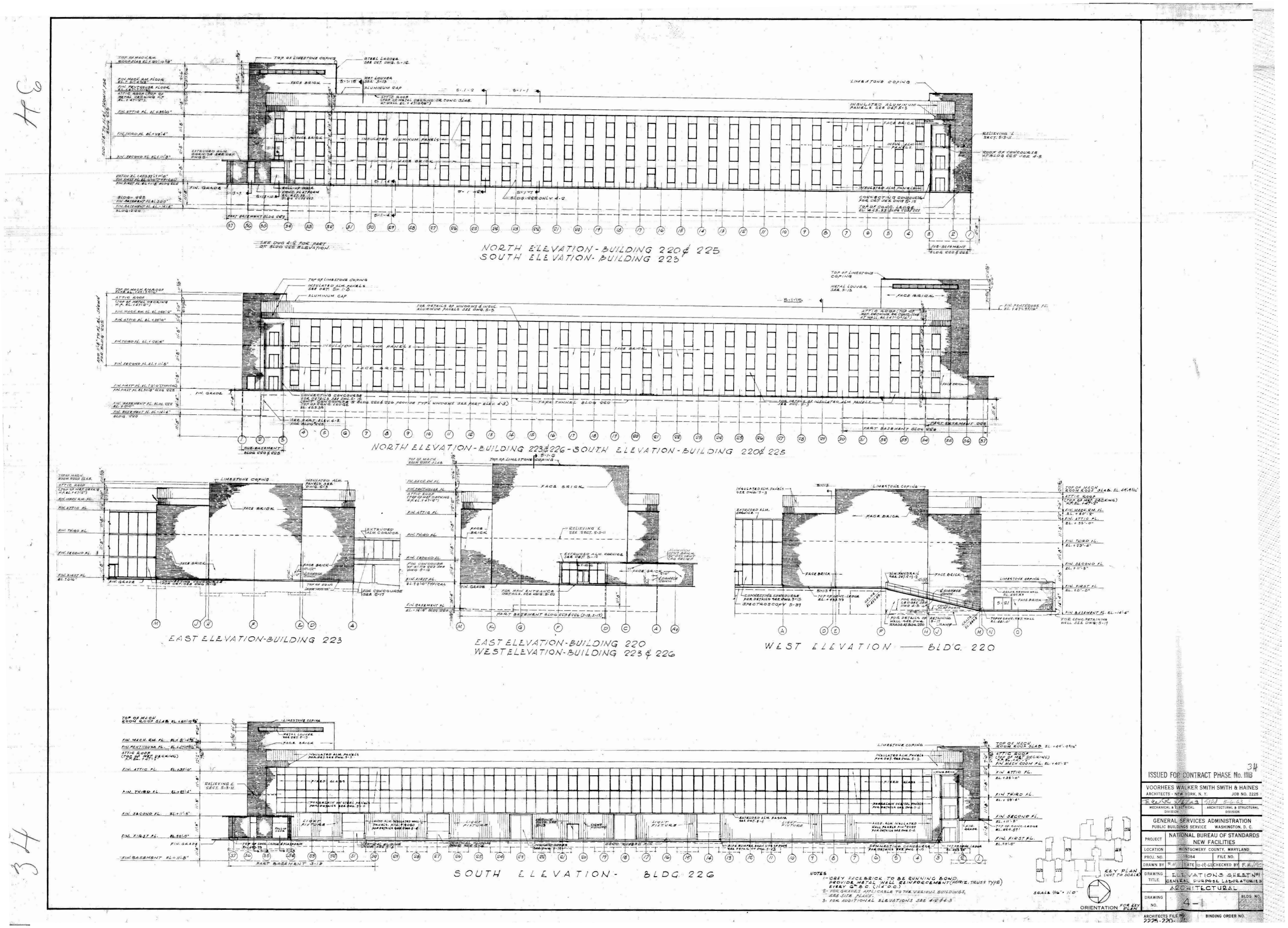
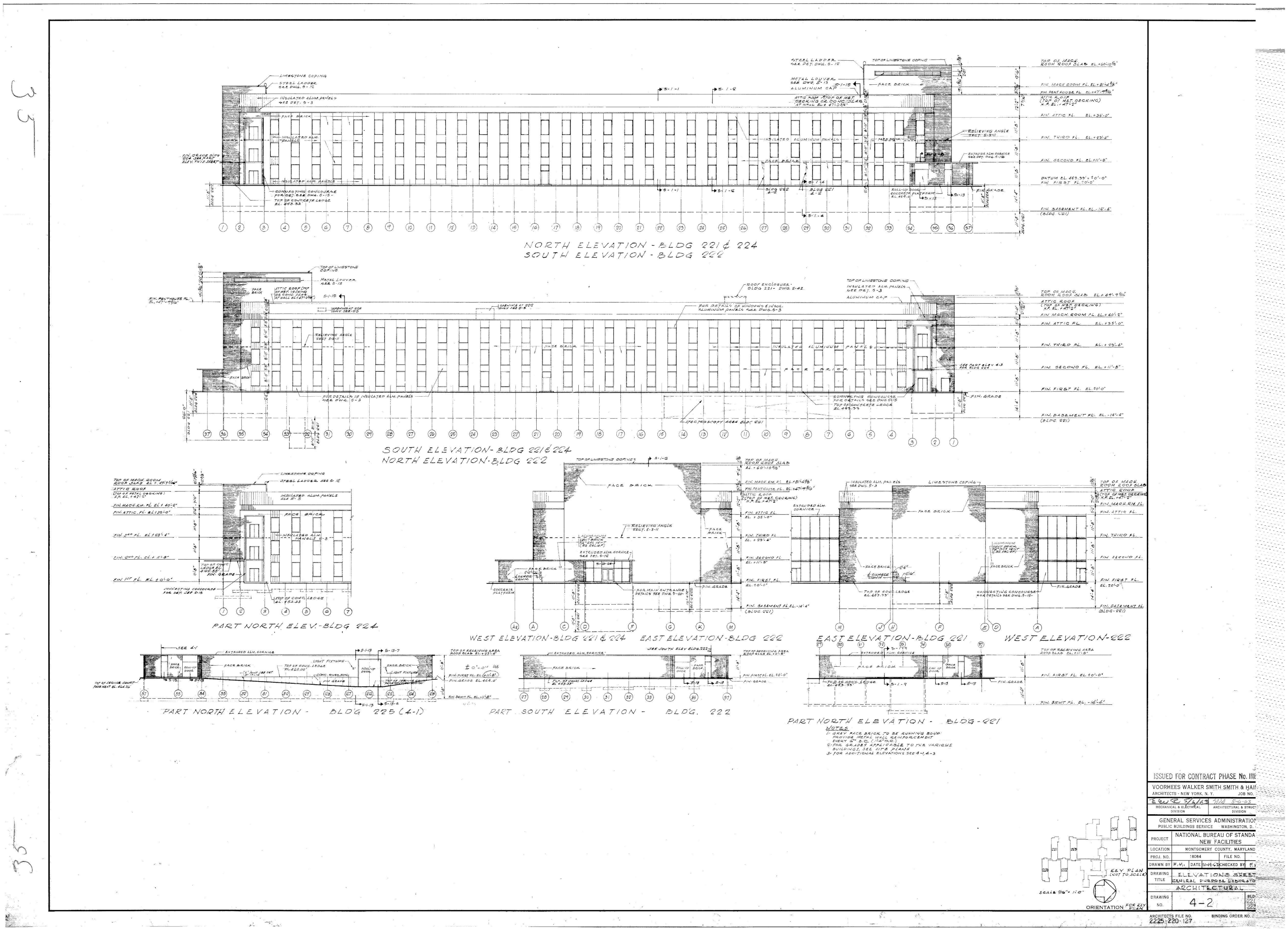


NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Elevations Sheet No. 1



NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Elevations Sheet No. 2

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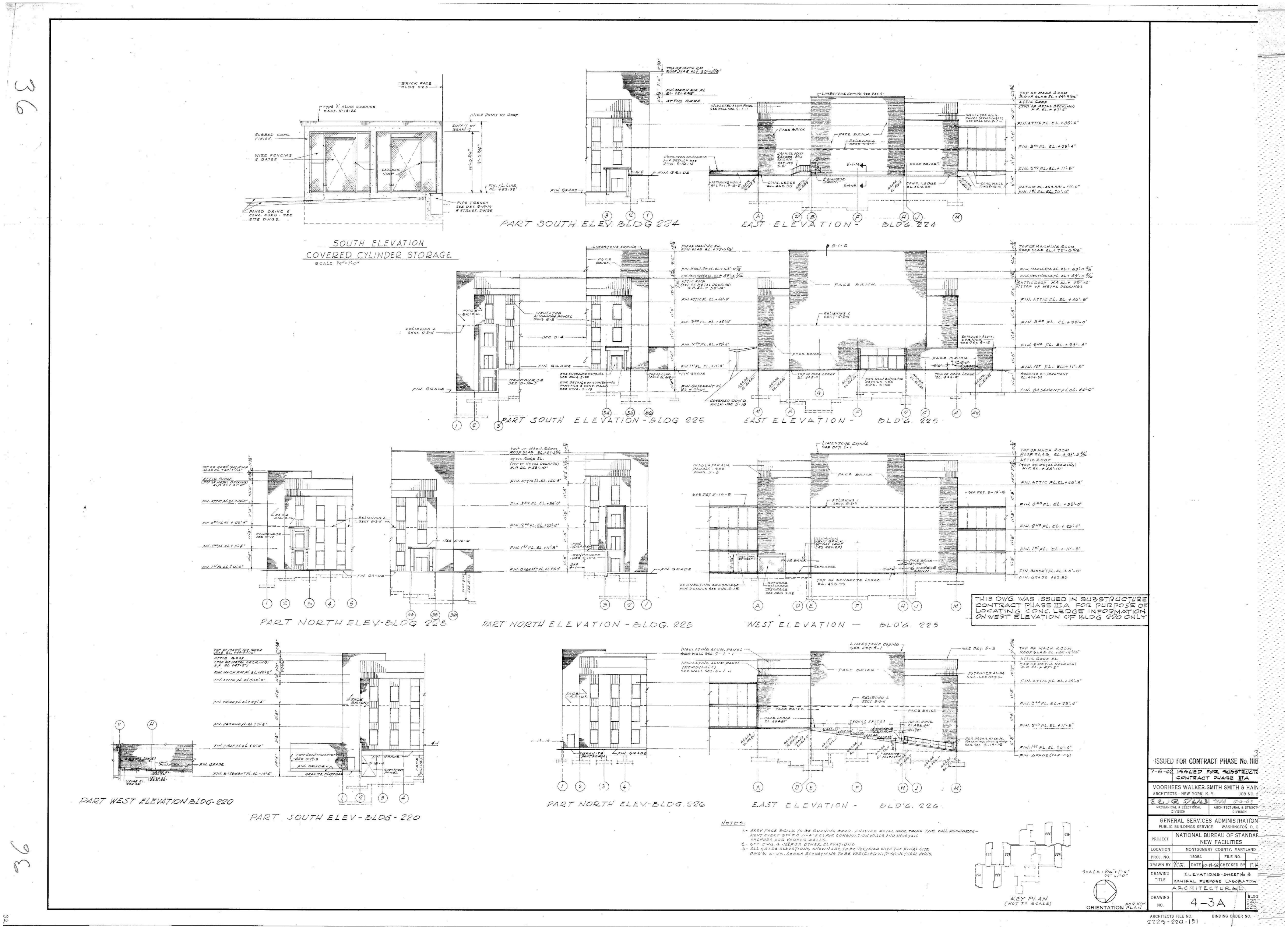

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Elevations Sheet No. 3

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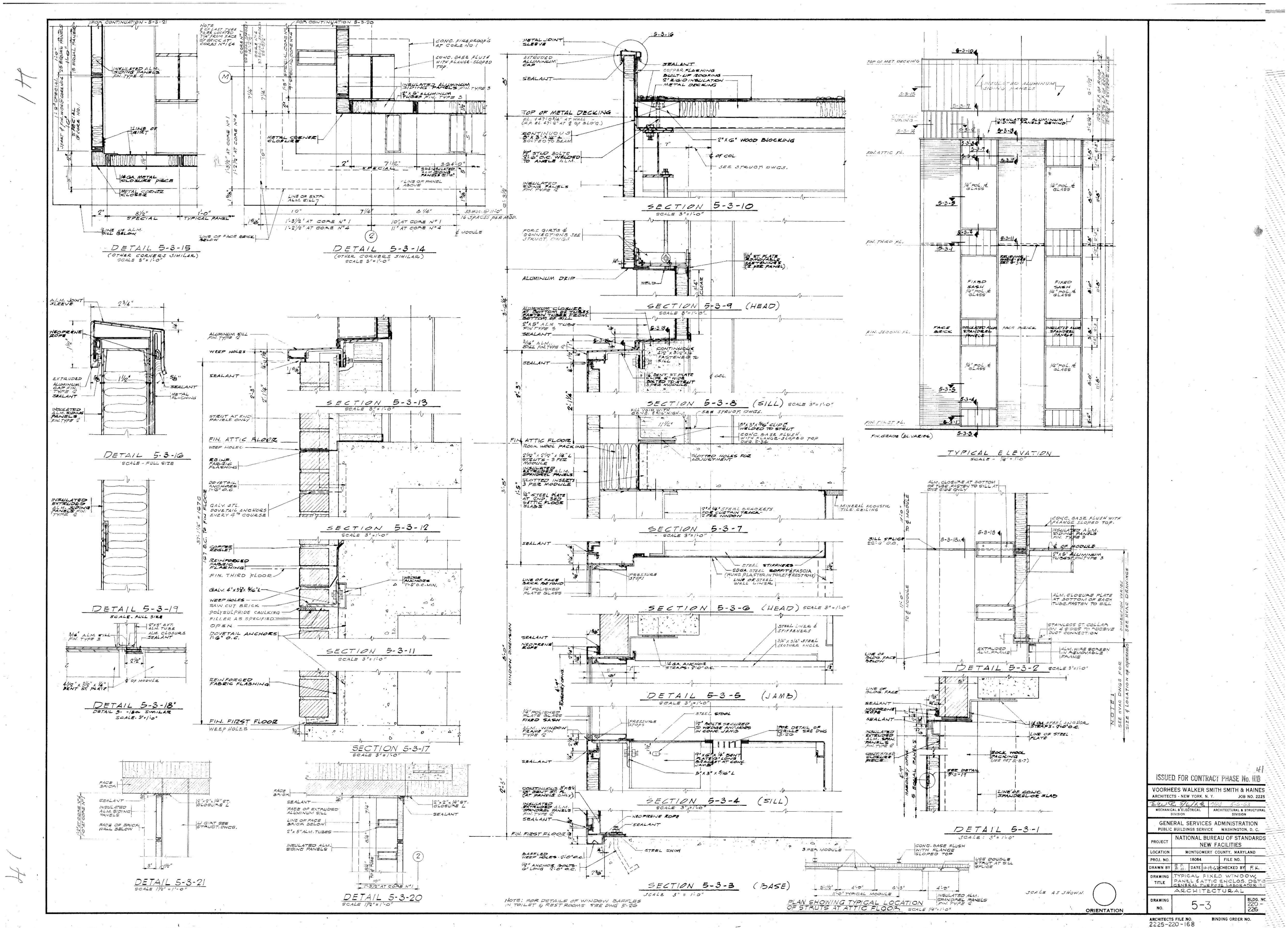
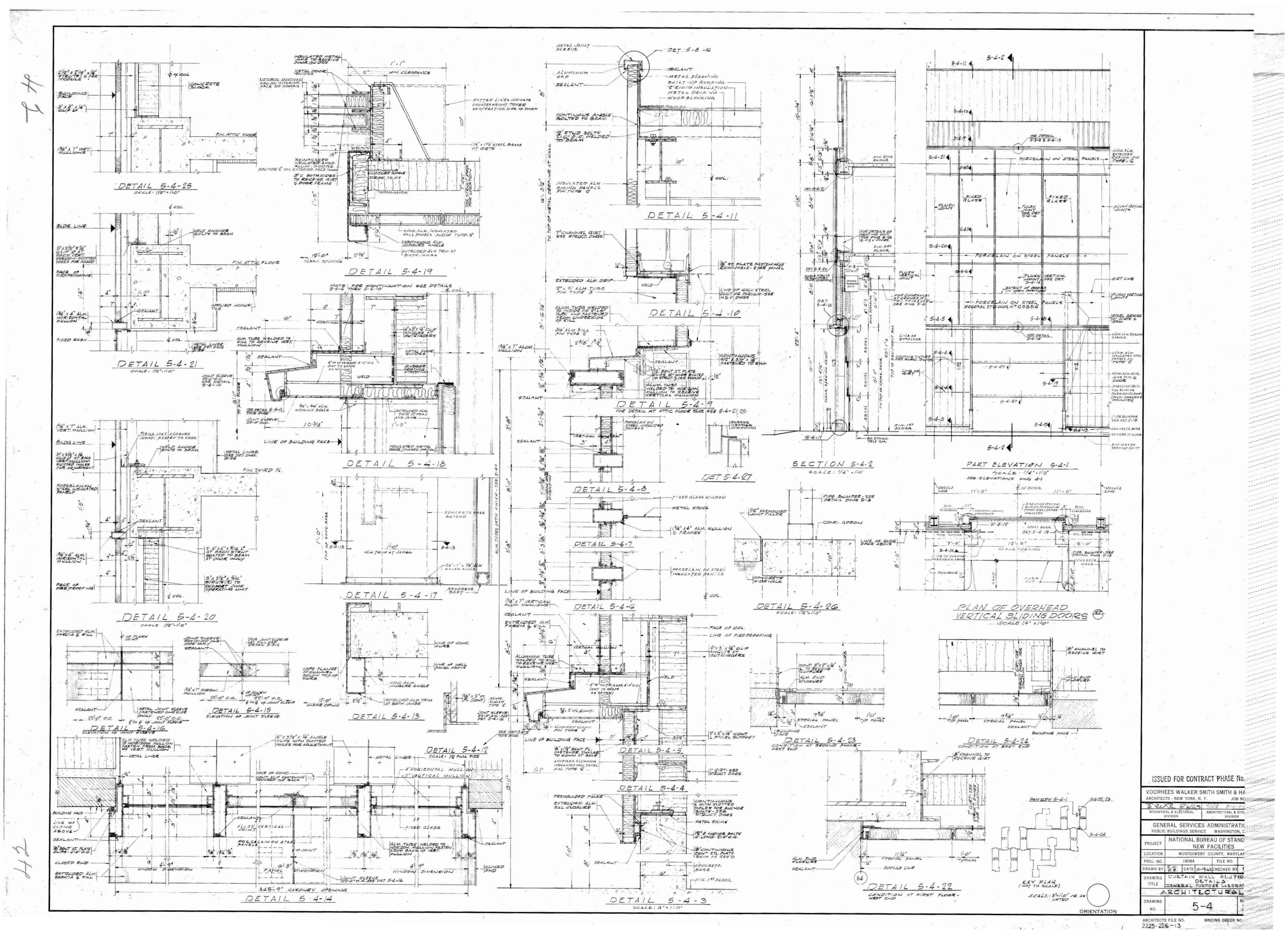


NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Typical Fixed Window, Panel and Attic Enclosure Details



NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Curtain Wall Sections and Details

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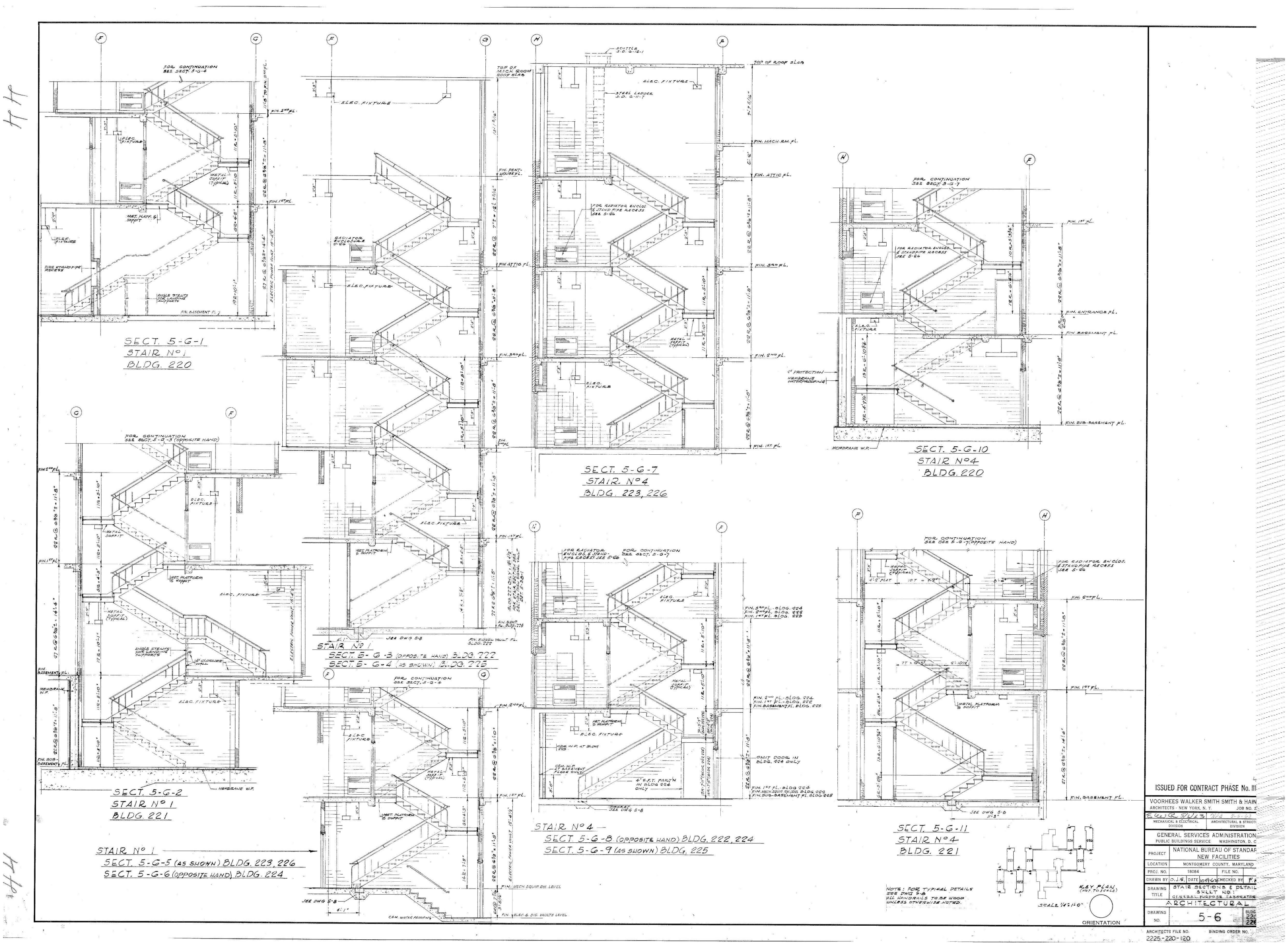

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Stair Sections and Details Sheet No. 1

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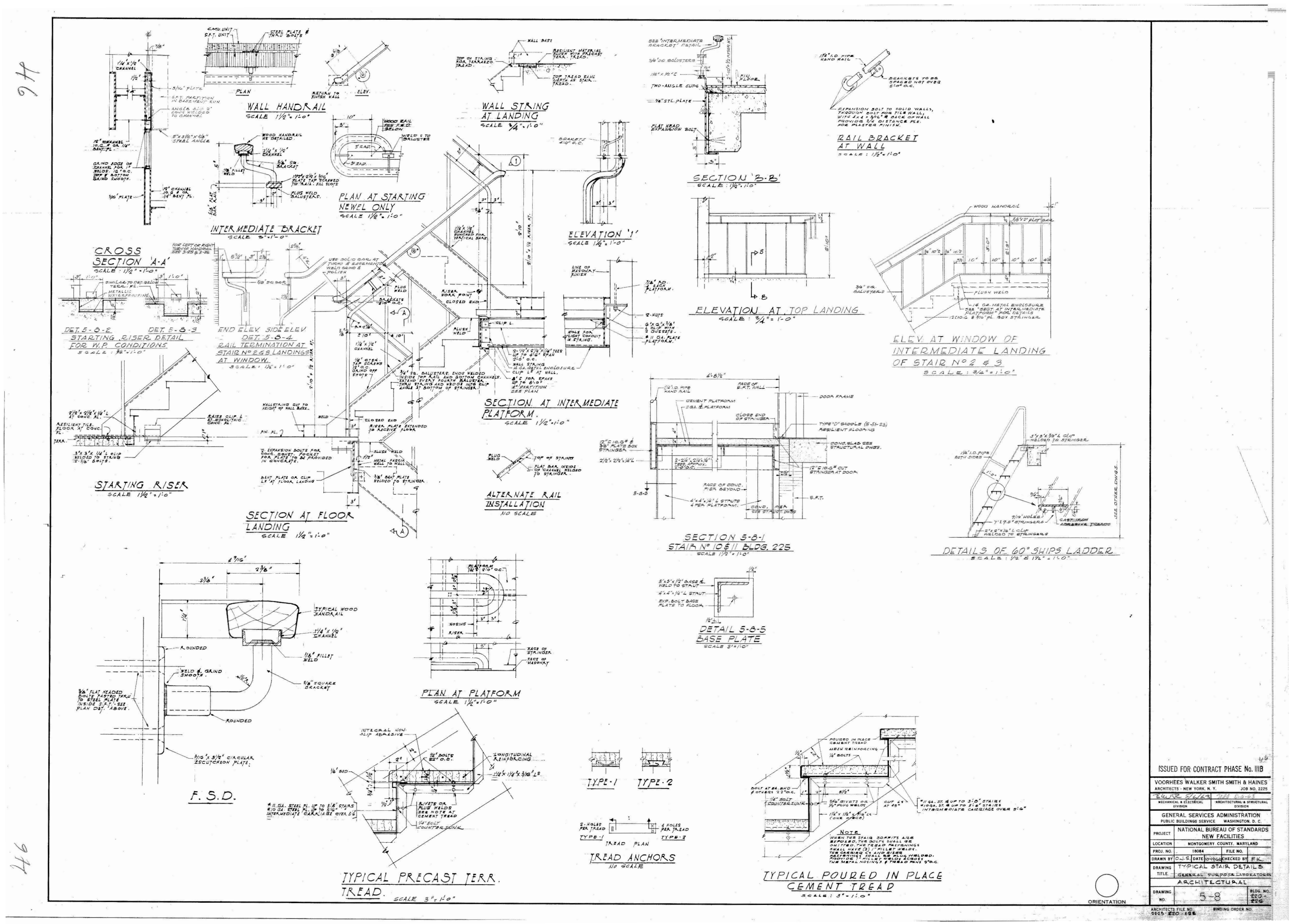

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Typical Stair Details

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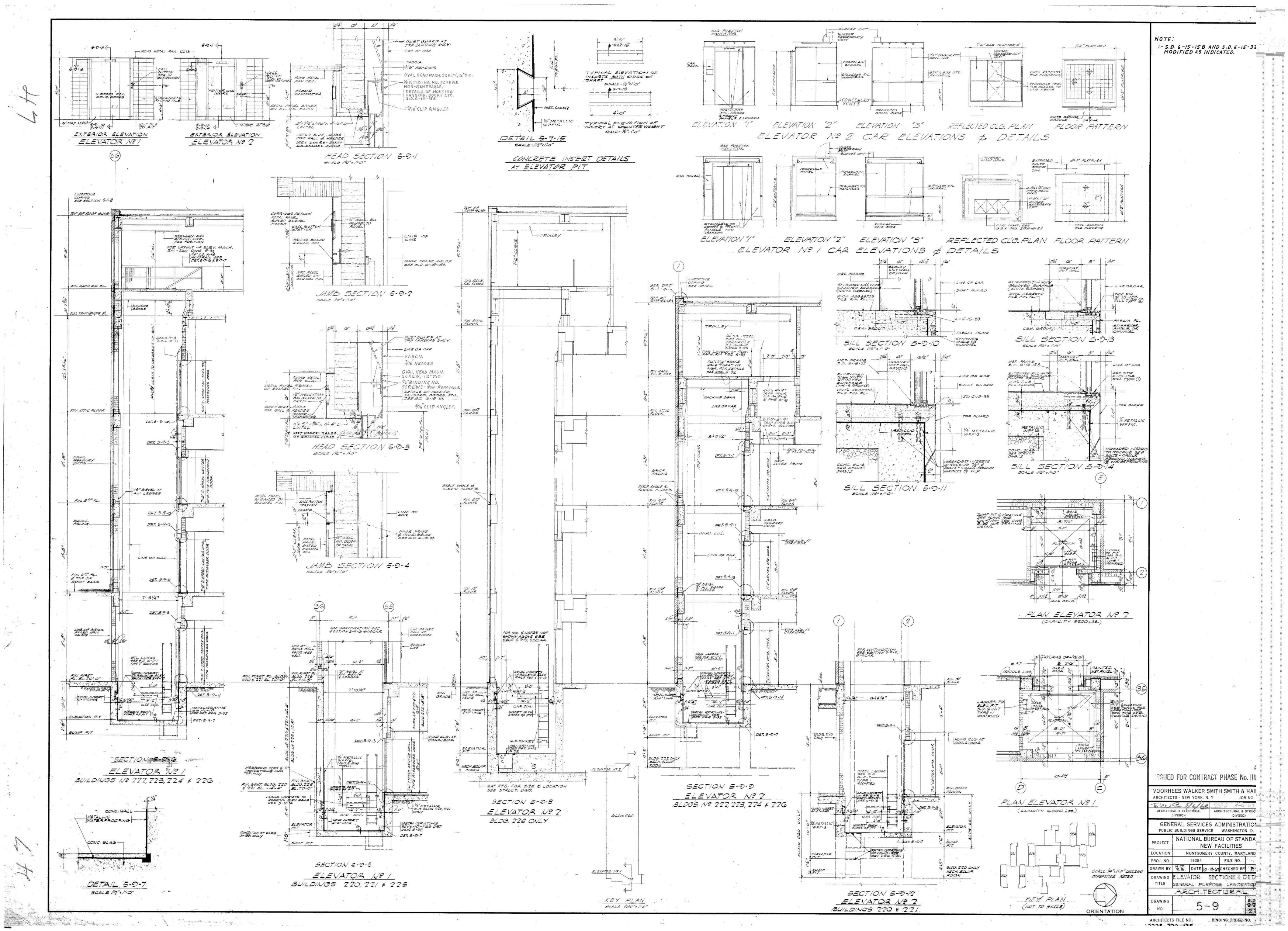

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Elevator Sections and Details

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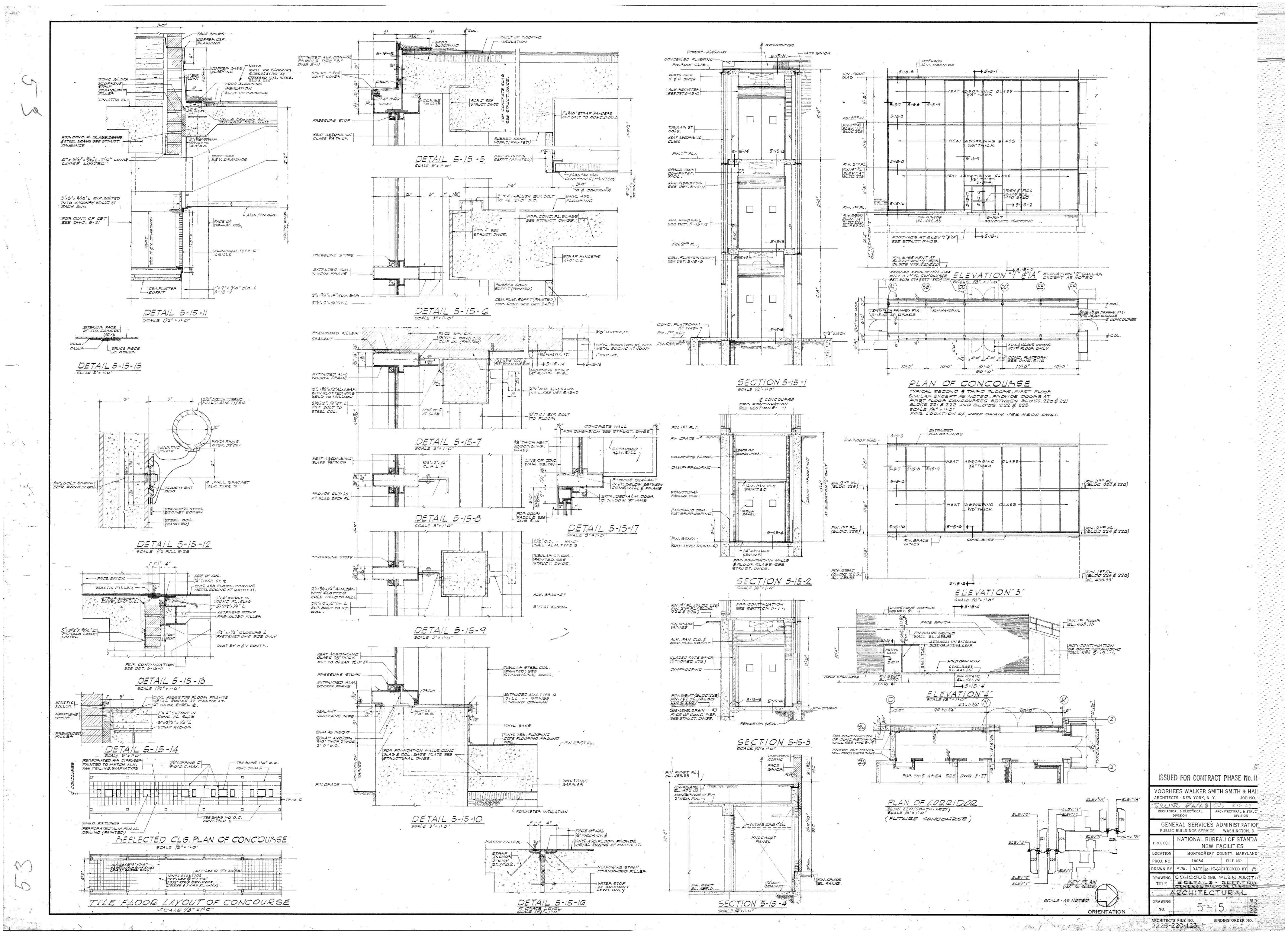

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Concourse Plan, Sections and Details Sheet No. 1

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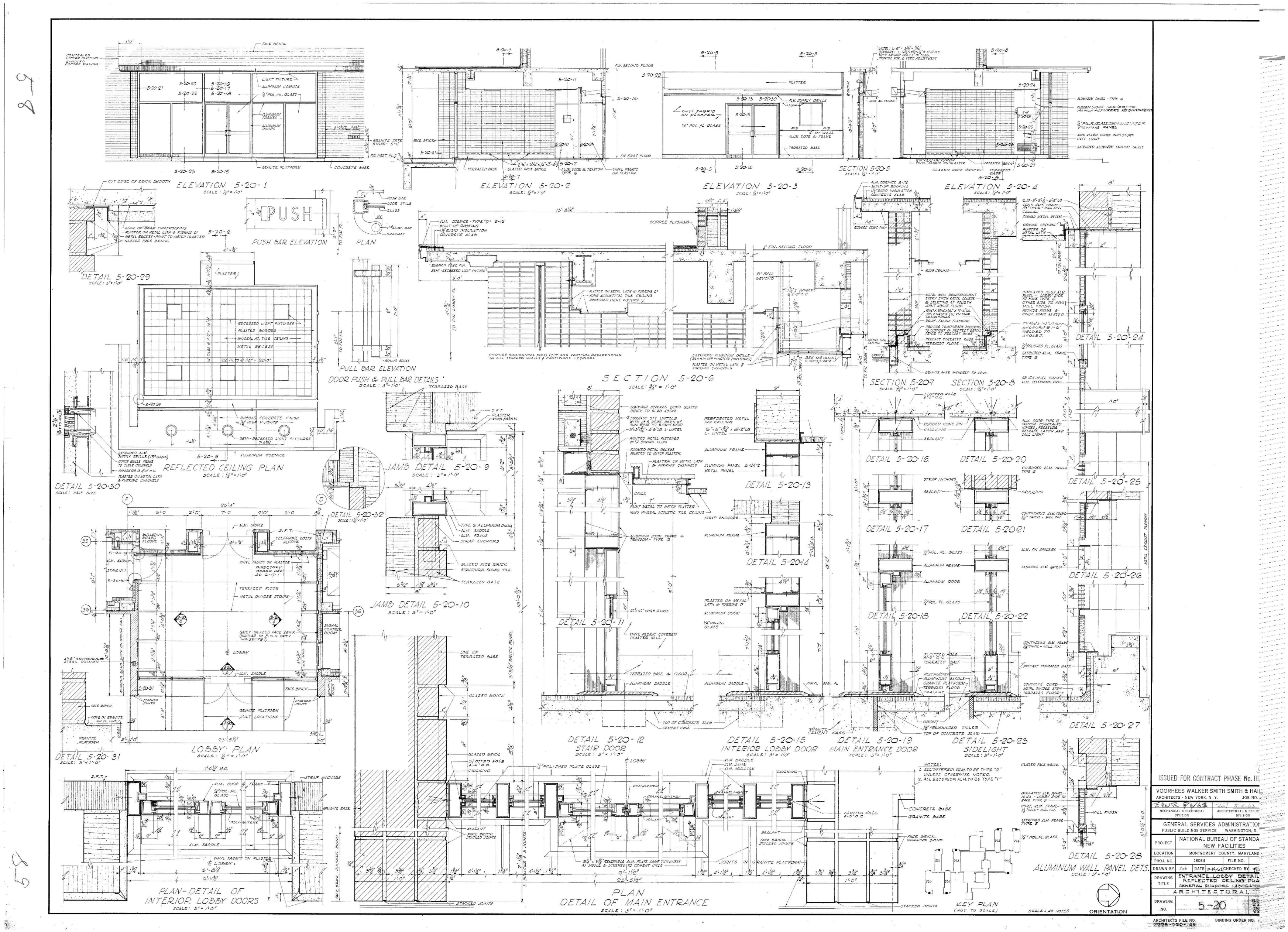
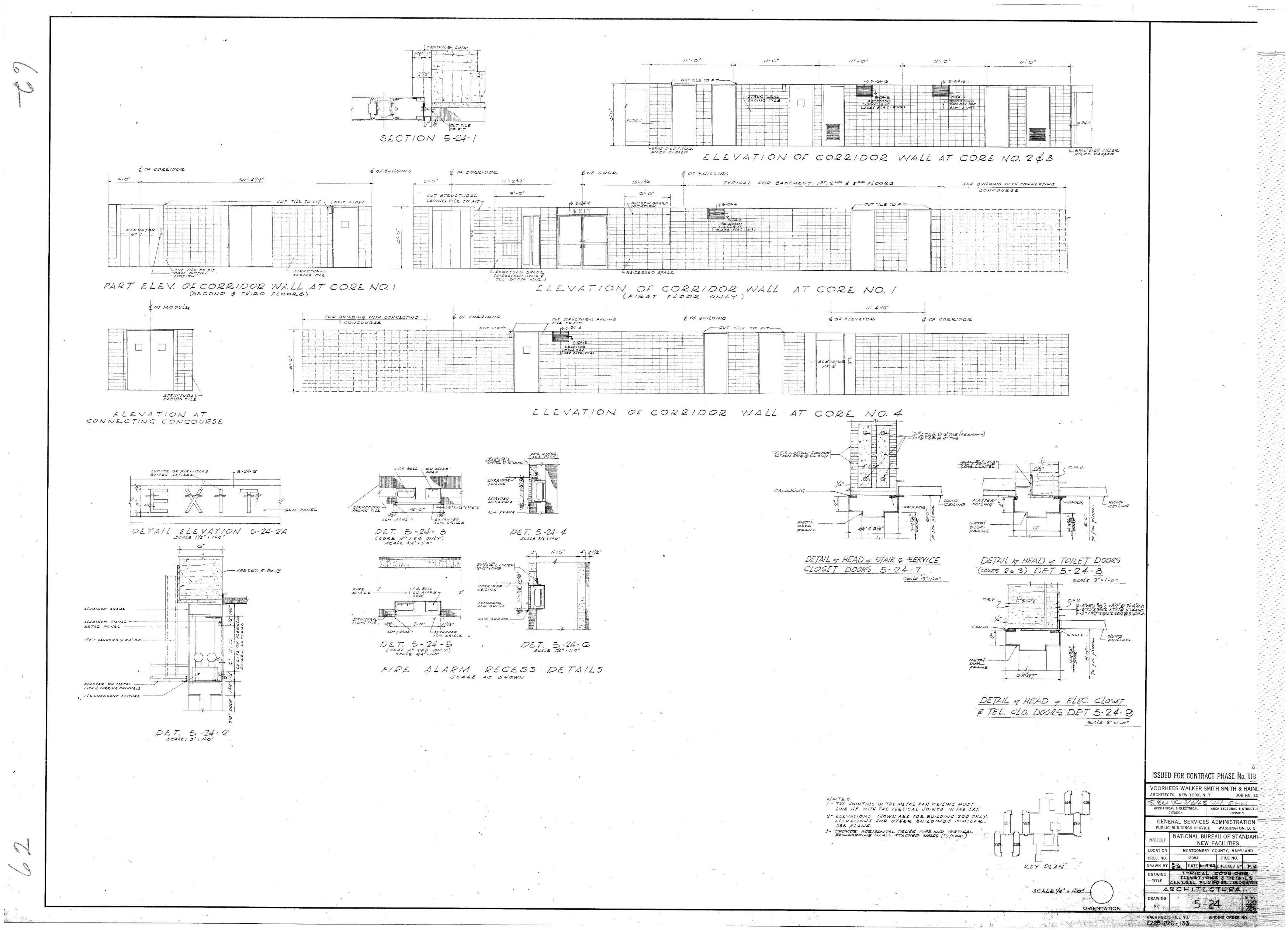


NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Entrance Lobby Details and Reflected Ceiling Plan



NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Typical Corridor Elevations and Details

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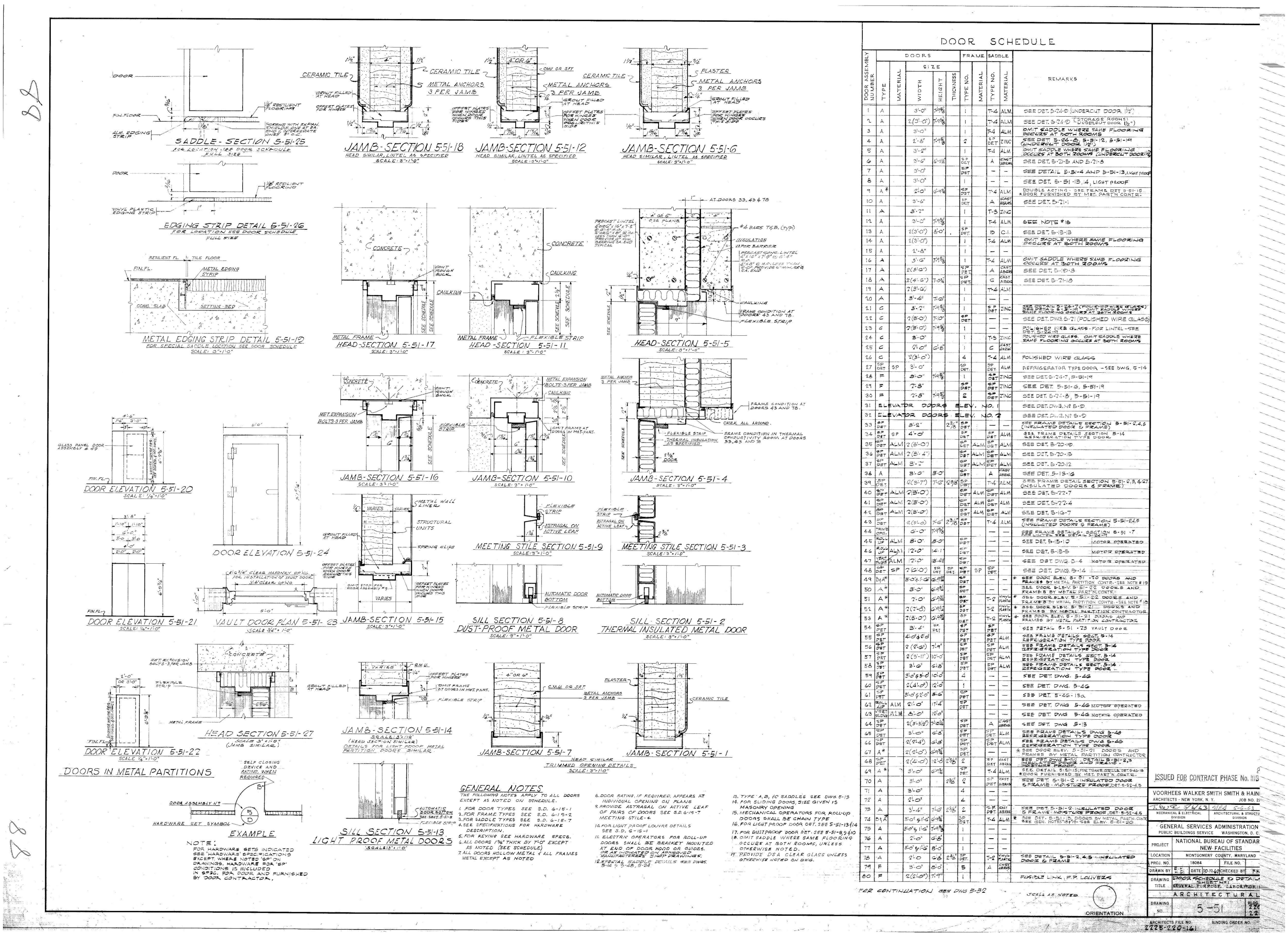
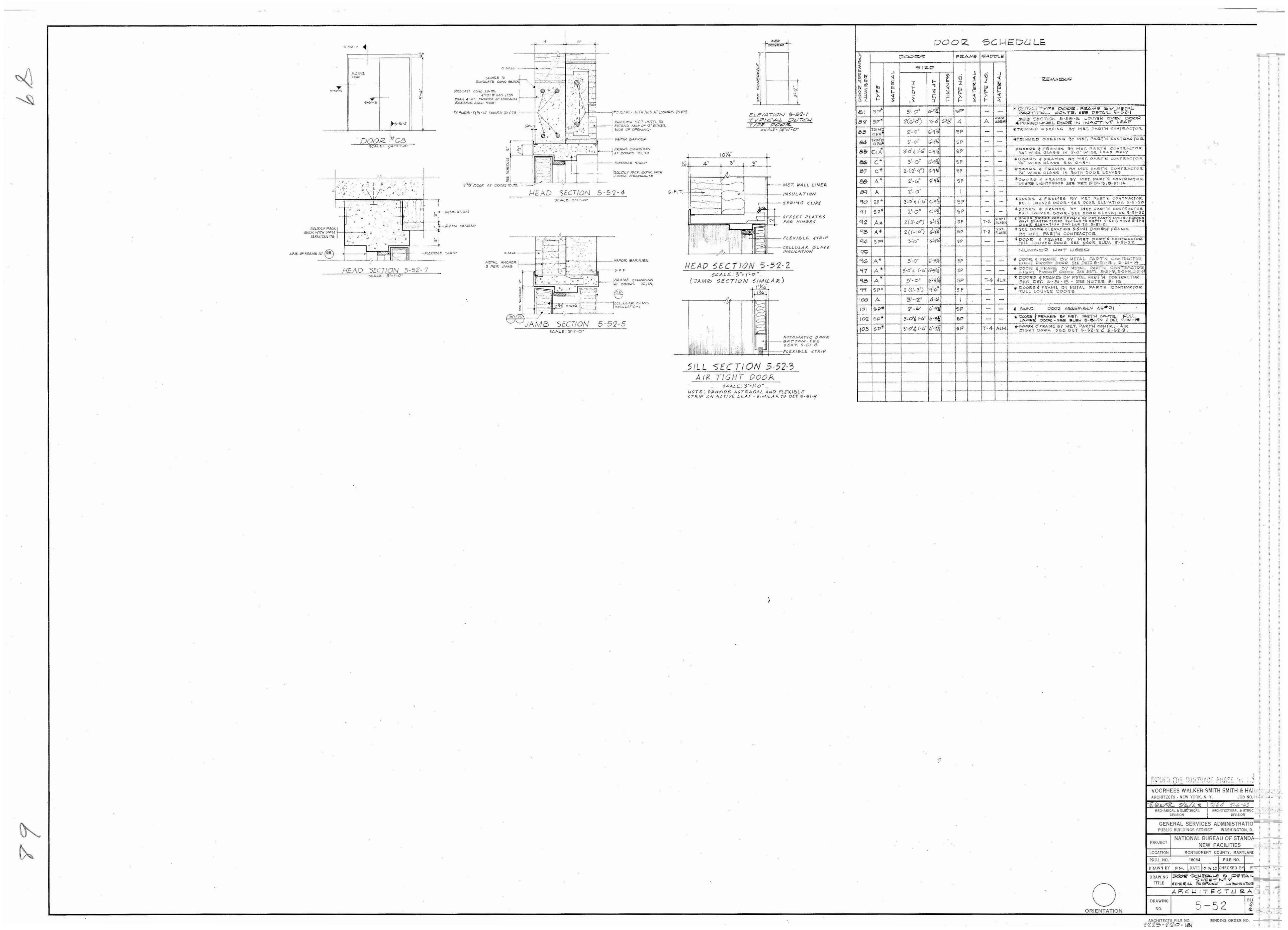


NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Door Schedule and Details Sheet No. 1



NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Door Schedule and Details Sheet No. 2

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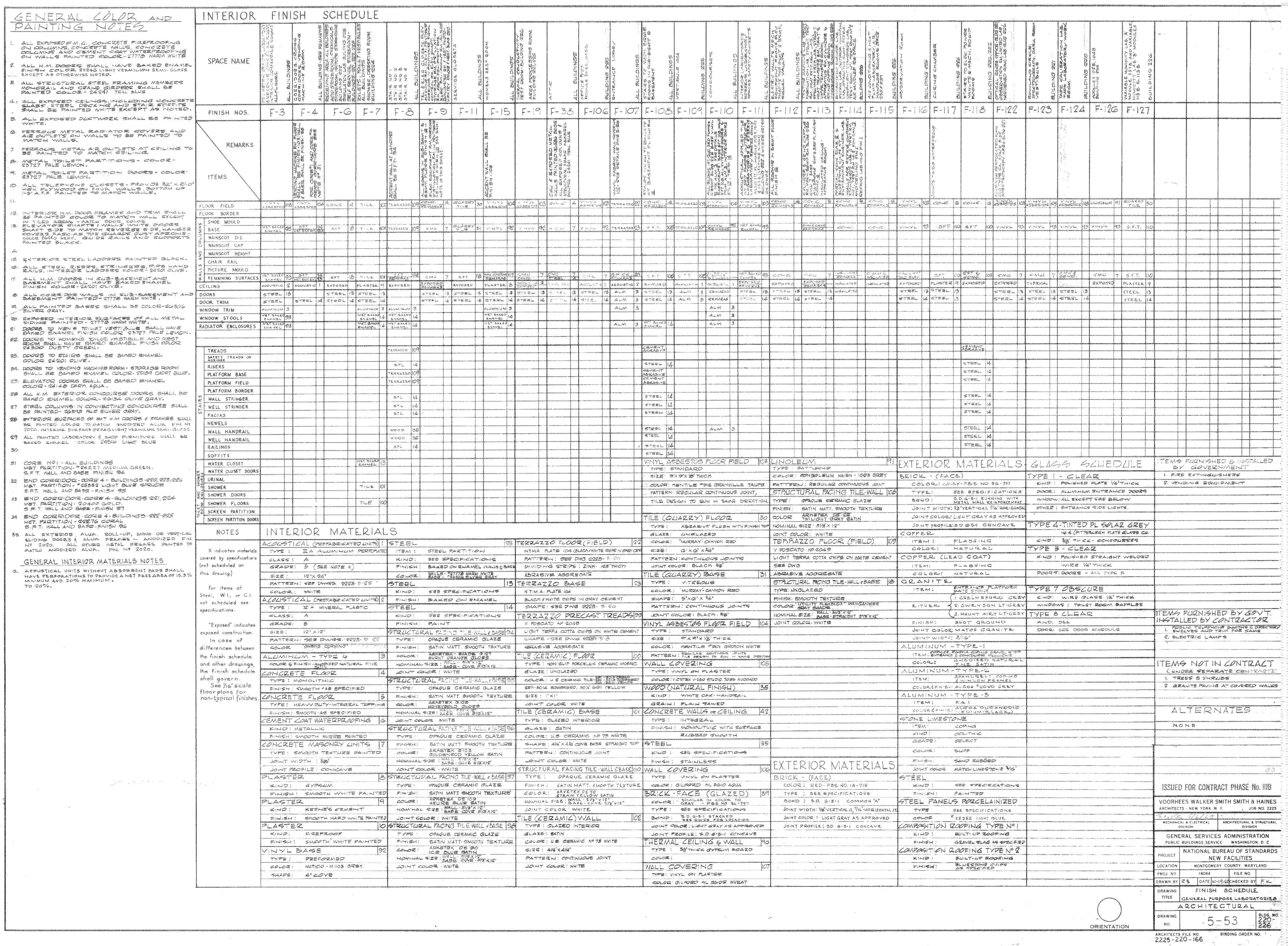

NBS Campus (Gaithersburg) GPL Architectural Drawings
NIST Library Vertical Files - Finish Schedule

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GPL Building 220 Looking Northwest - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 279

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GPL Building 220 Looking Southeast - July 15, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 447

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GPL Building 220 Entrance - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 532

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GPL Building 220 Lab 203 B - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 509

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GPL Building 220 Lab 351B - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 534

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GPL Building 220 Second Floor "F" Line Columns - June 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 422

GPL Building 220 2nd Floor Looking East - May 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 394

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GPL Building 220 3rd Floor, South Side Looking East - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 504

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GPL Building 221 South side Looking Northwest - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 509

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GPL Building 221 South side Looking Northeast - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 537

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GPL Building 221 Looking Northwest - February 17, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 311

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GPL Building 221 Concourse between 220 & 221 - May 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 396

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GPL Building 221 Lab 328B - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 507

GPL Building 221 1st Floor Looking West - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 508

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GPL Building 222 West End Looking East - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 539

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GPL Building 222 Looking Northwest - April 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 374

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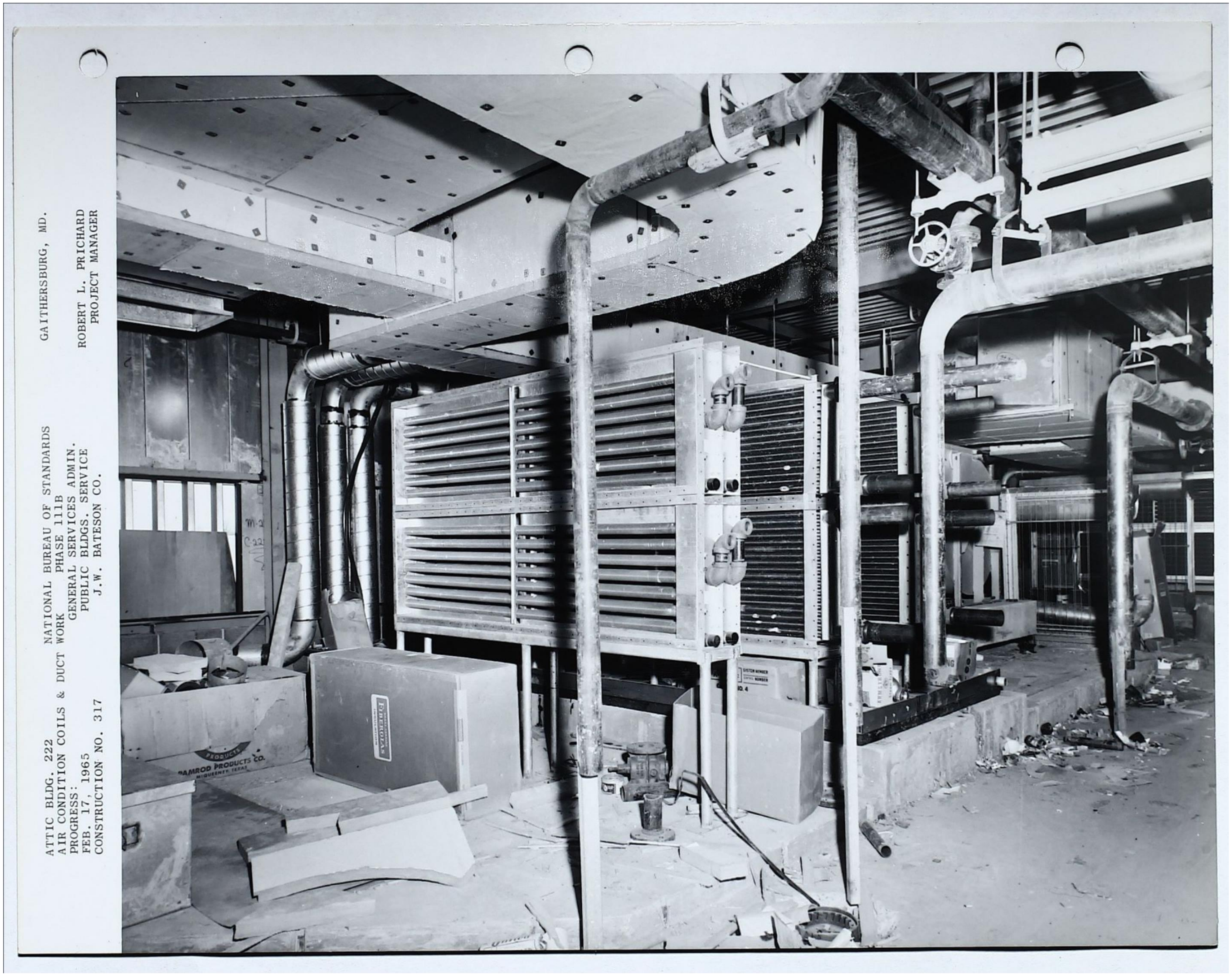

GPL Building 222 Air Condition Coils & Duct Work - February 17, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 317

GPL Building 222 Line in Flow Trench - March 17, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 345

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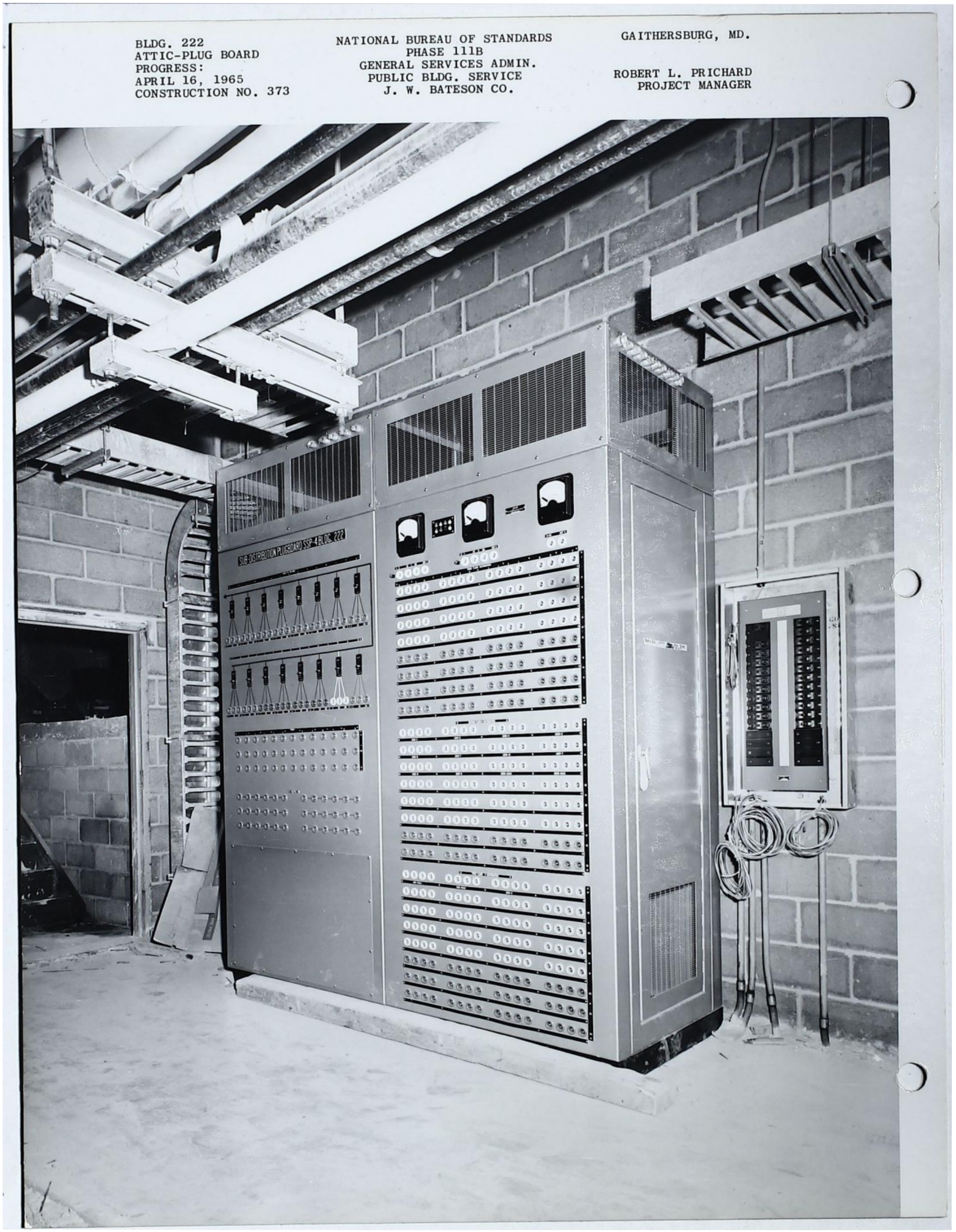

GPL Building 222 Attic Plug Board- April 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 373

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GPL Building 222 3rd Floor - August 19, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 486

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GPL Building 223 Looking Northeast - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 291

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GPL Building 223 North side Looking South - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 518

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GPL Building 223 Looking Southeast a Concourse - June 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 432

GPL Building 223 Looking Southeast through Concourse - July 15, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 459

GPL Building 223 Bridge to Building 101 - August 19, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 487

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GPL Building 223 Northside Looking West - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 543

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GPL Building 224 Looking Northeast - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 295

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GPL Building 224 North Side Looking Southeast - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 522

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GPL Building 224 Concourse to Building 304 - June 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 436

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GPL Building 224 Concourse to Building 304 Looking South - April 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 380

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GPL Building 224 Entrance Door Installation - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 548

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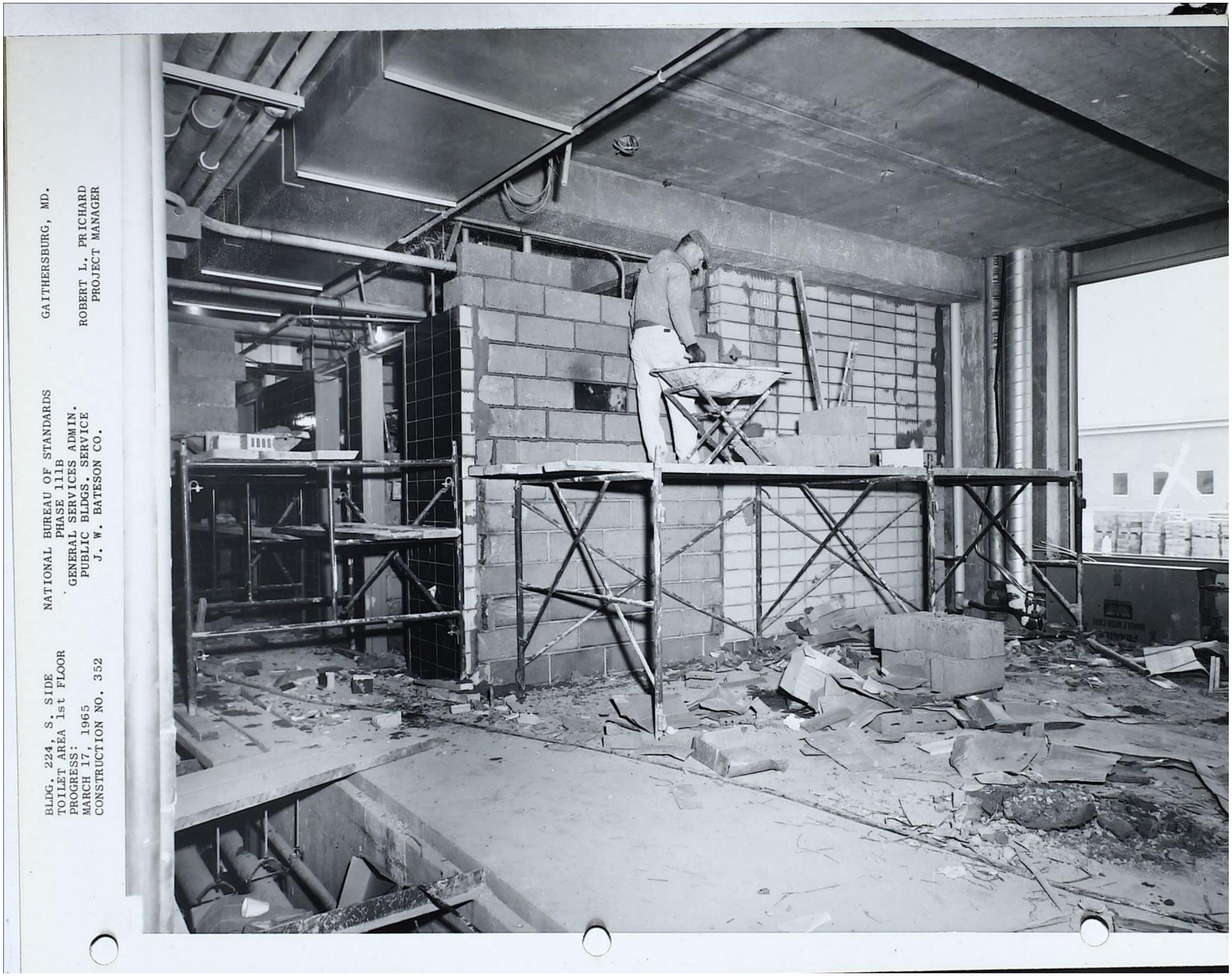

GPL Building 224 1st Floor South Side Toilet Area - March 17, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 352

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GPL Building 224 2nd Floor Toilet Room Browncoating - June 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 438

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GPL Building 224 2nd Floor North Side Stairs - July 15, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 465

GPL Building 224 1st Floor East End - July 15, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 466

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GPL Building 225 Northside Looking Southwest - September 20, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 525

GPL Building 220 2nd Floor Looking East - May 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 394

GPL Building 225 3rd Floor Along South Wall Looking West - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 300

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GPL Building 225 1st Floor South Side Looking East - October 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 552

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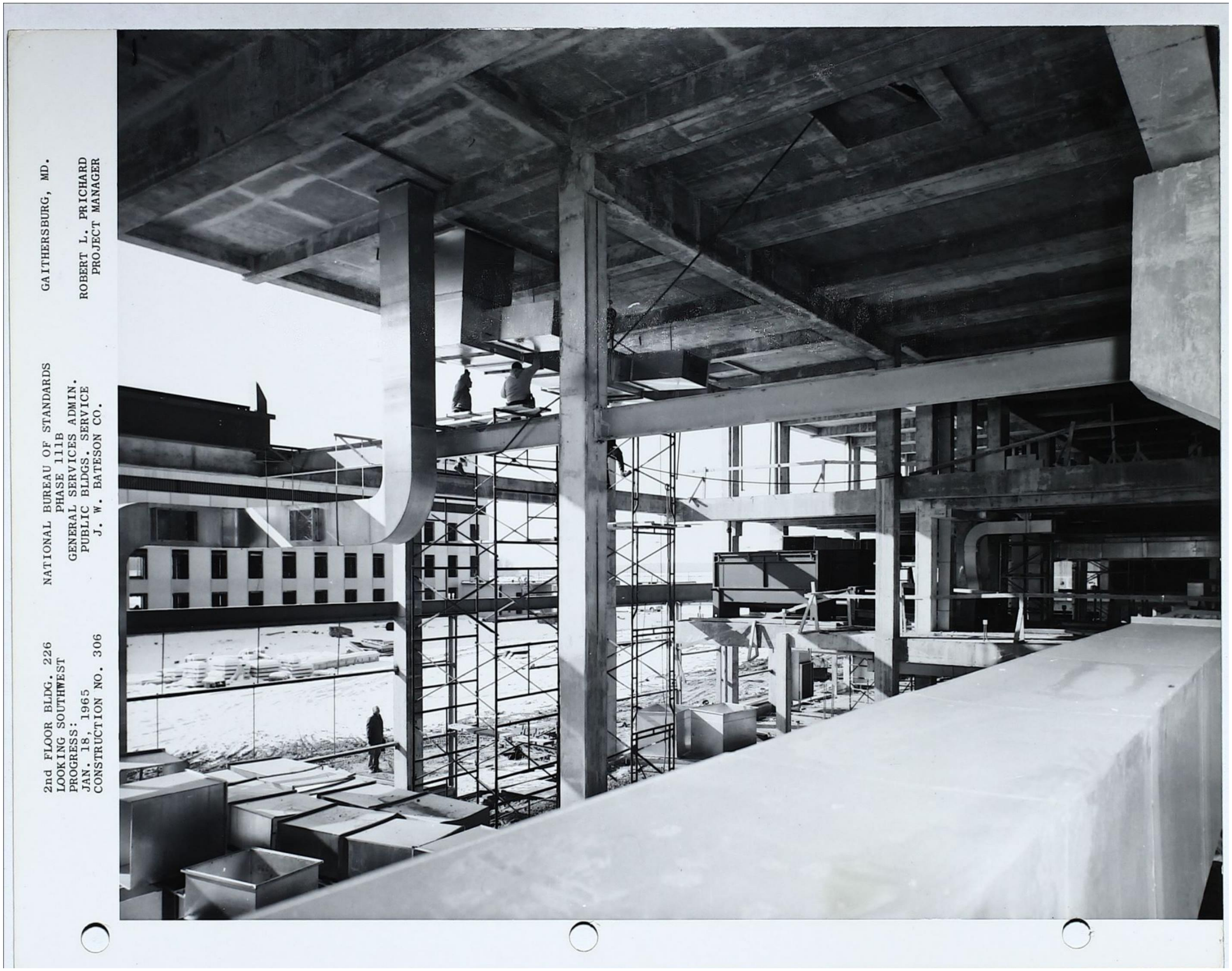
GPL Building 226 Looking North - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 303

GPL Building 226 South Side Grading Operations - August 19, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 502

GPL Building 226 Looking South - March 17, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 359

GPL Building 226 Looking Southeast - April 16, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 388

GPL Building 226 Looking Northwest - July 15, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 471



GPL Building 226 2nd Floor Looking Southwest - January 18, 1965
NIST Library Vertical Files - Gaithersburg Campus. J.W. Bateson Co.
Contractors Progress Photos - Phase 111B - Construction 306

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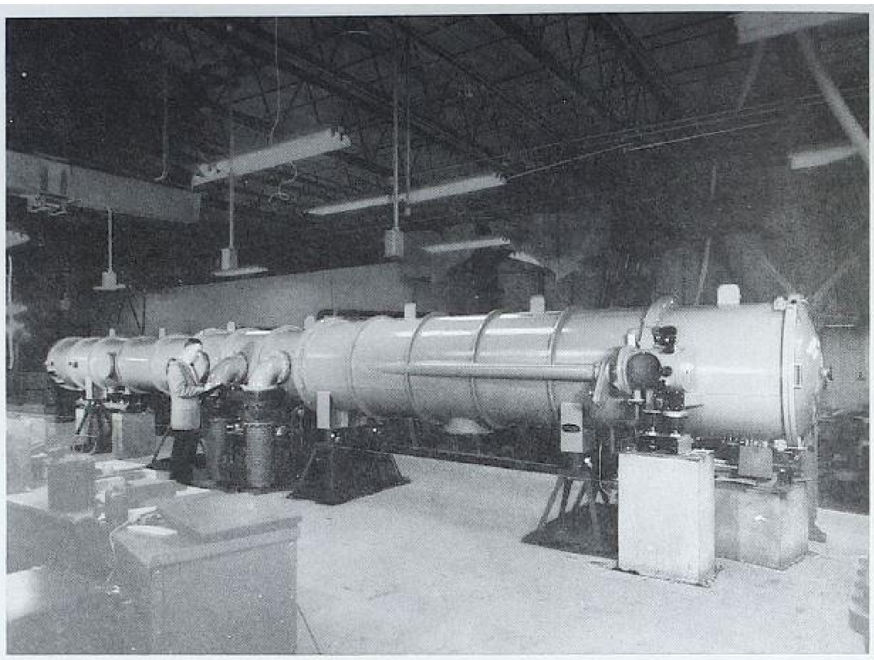
One of the all-weather corridors that connect the general purpose laboratories to each other.

GPL Building Concourse Interior
NIST Library Vertical Files - Gaithersburg Campus



One of the new 35-foot grating spectrographs, specially built to NBS specifications, which will be installed in the new NBS Physics Laboratory. It is here shown as test-assembled by the manufacturer.

Spectrograph in NBS Physics Laboratory
NIST Library Vertical Files - Gaithersburg Campus

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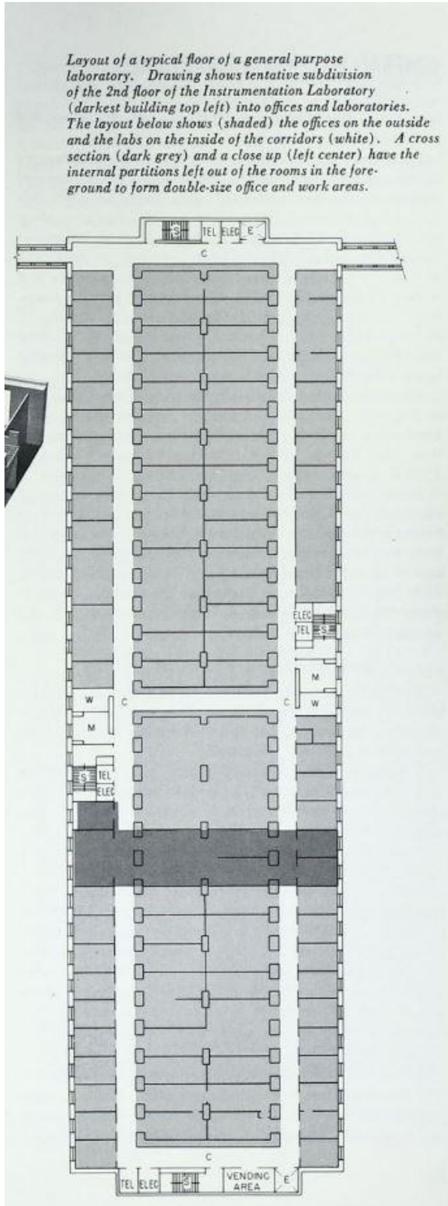
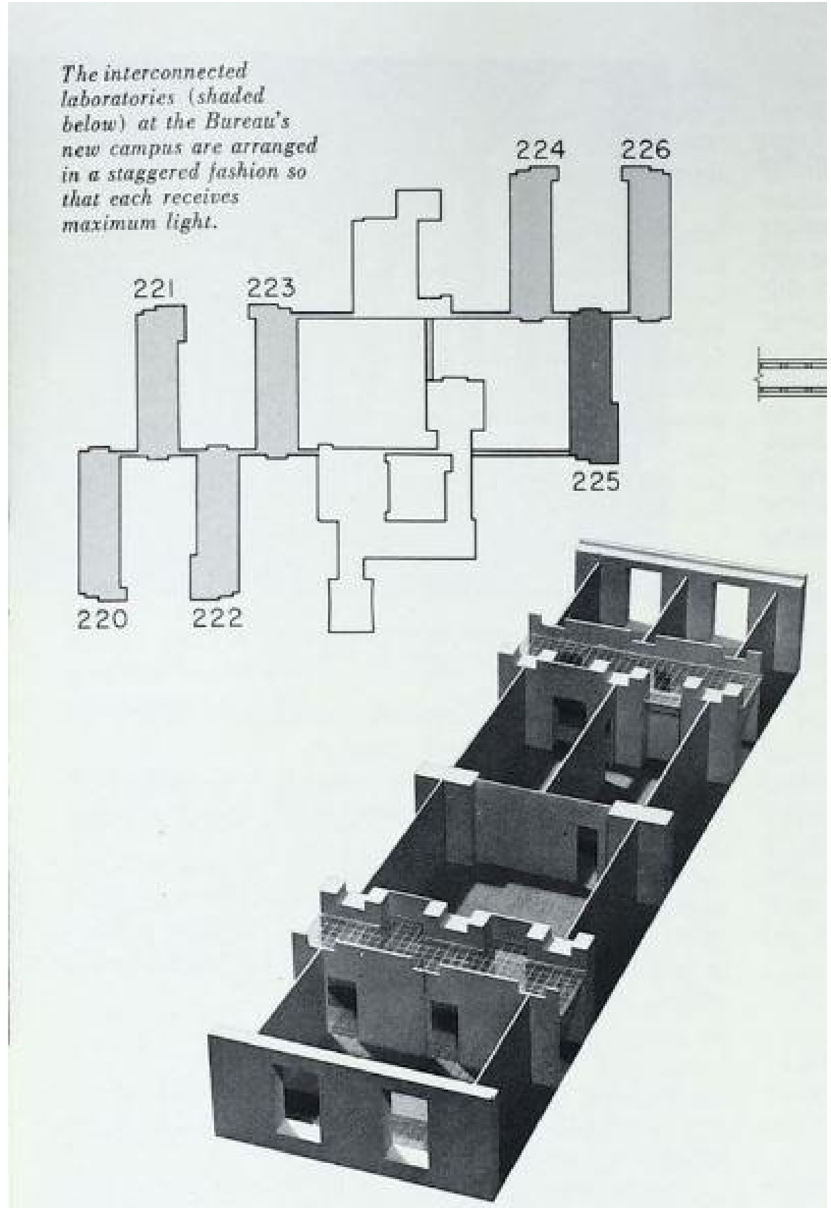


GPL Building Typical Floor Pla
NIST Library Vertical Files
Gaithersburg Campus



GPL Building Staggered Layout
NIST Library Vertical Files - Gaithersburg Campus

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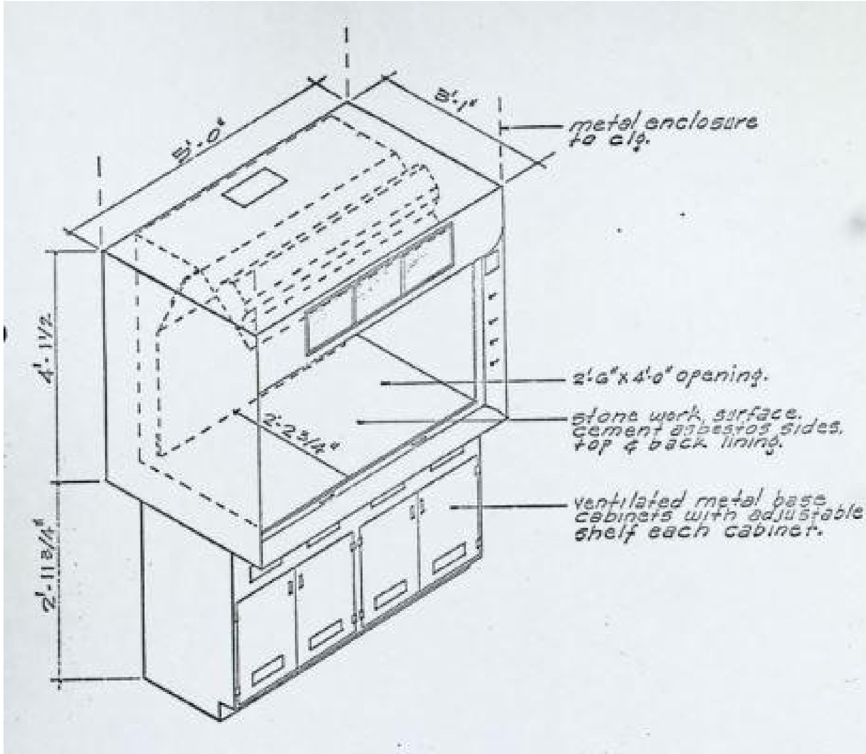

GPL Building Equipment Dimensions
NIST Library Vertical Files - Gaithersburg Campus

One of the 11 by 24 feet laboratory modules in the general purpose laboratories. Here, scientists are using radioisotopes to detect very small quantities of a variety of elements in standard reference materials.

Scientists in GPL laboratory module
NIST Library Vertical Files - Gaithersburg Campus

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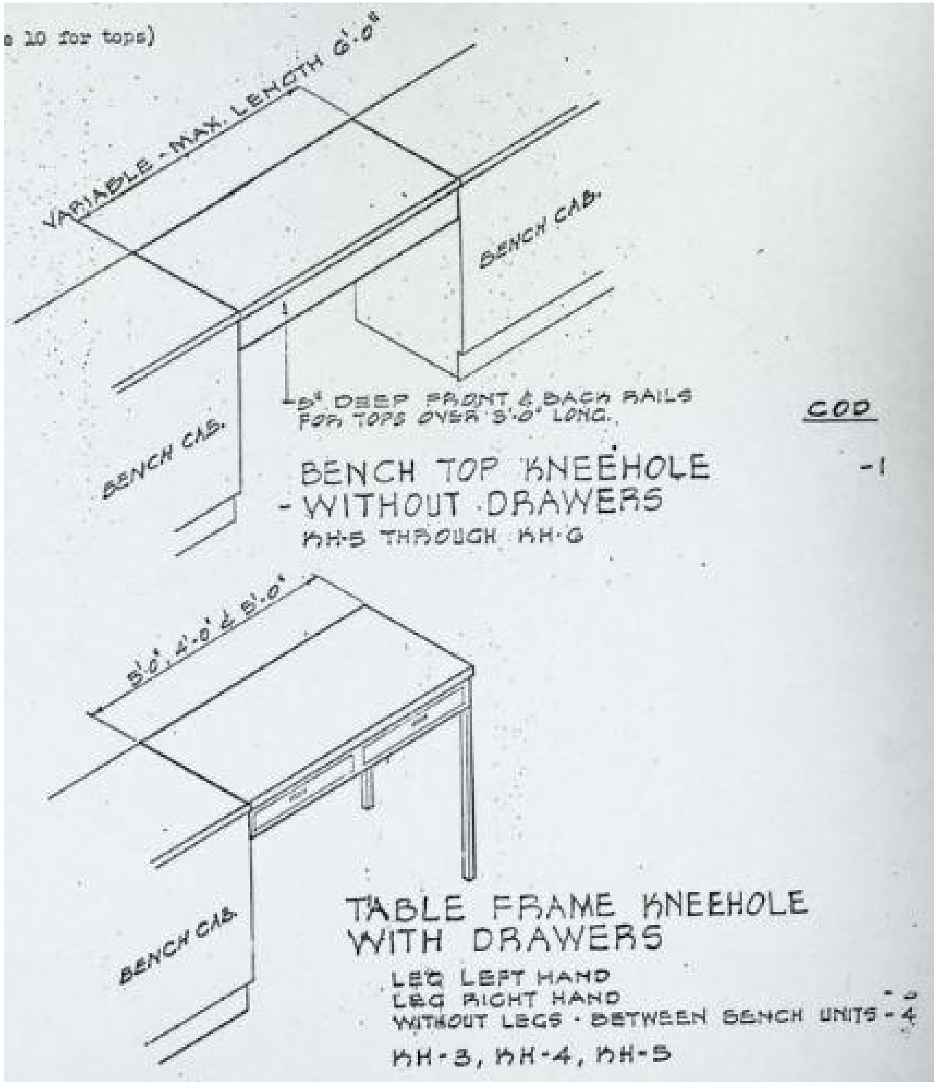
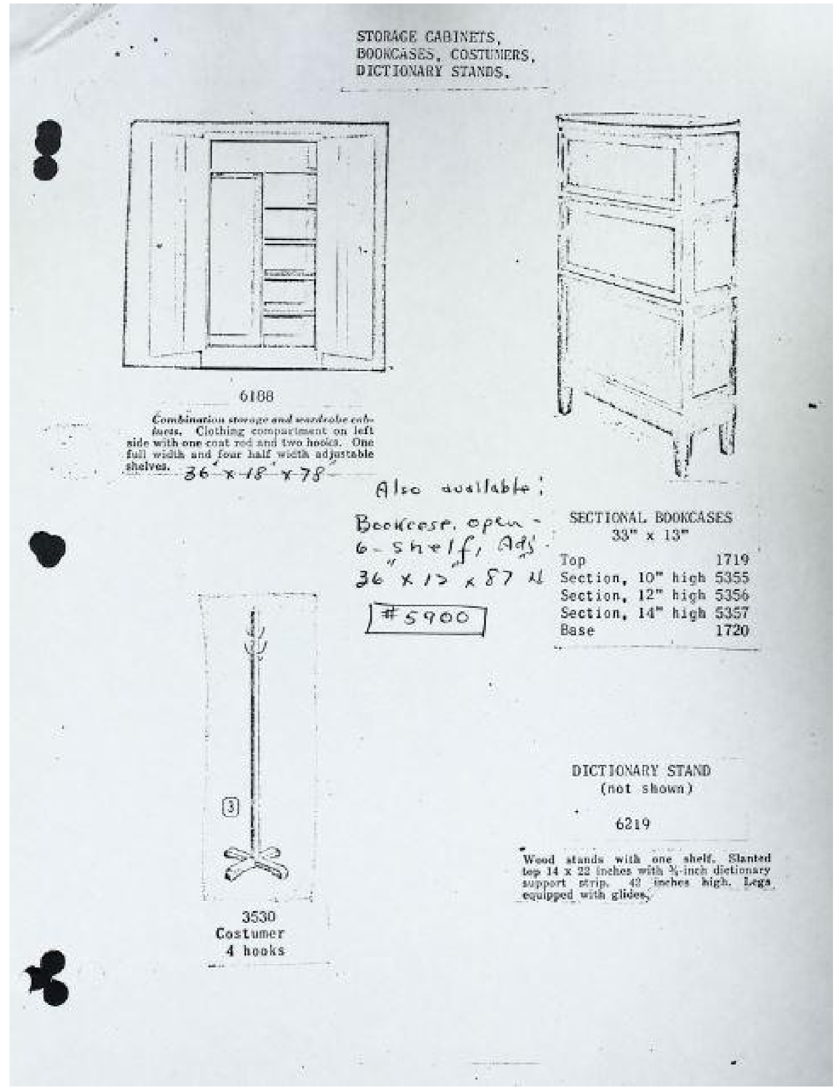
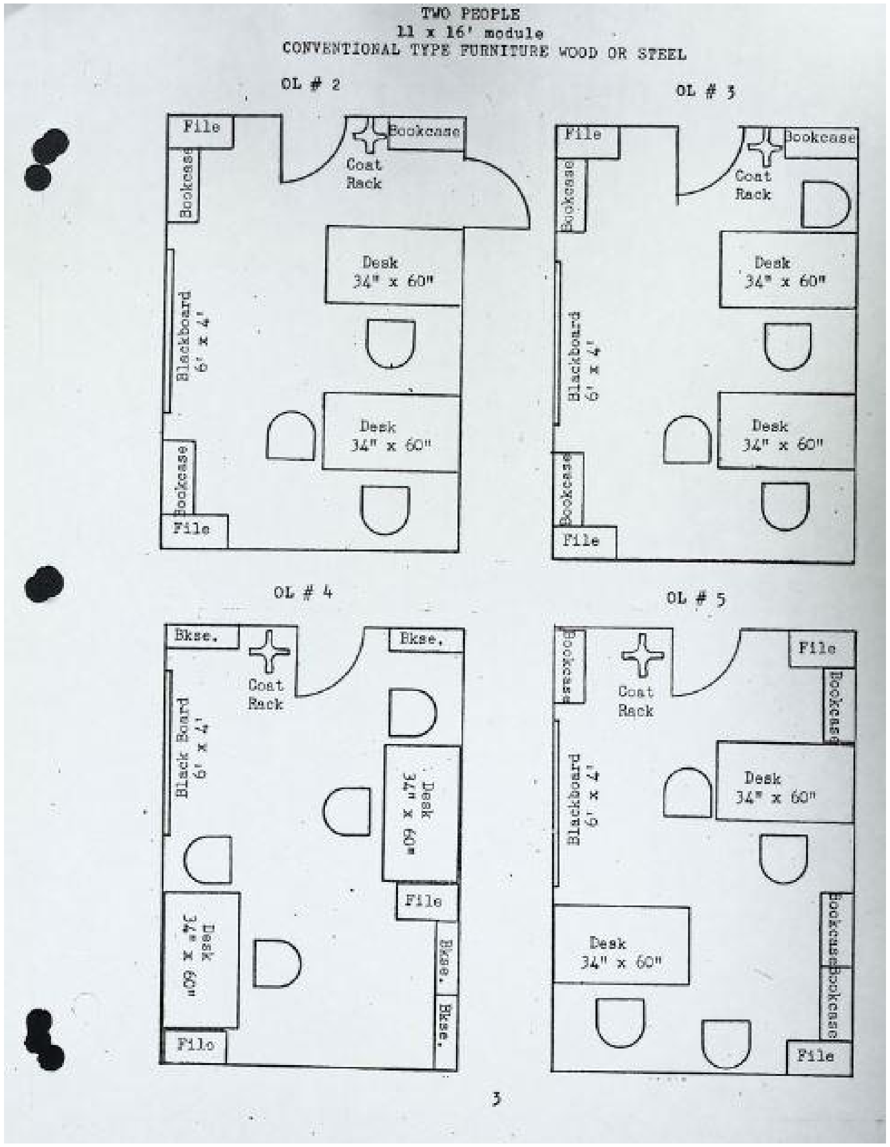


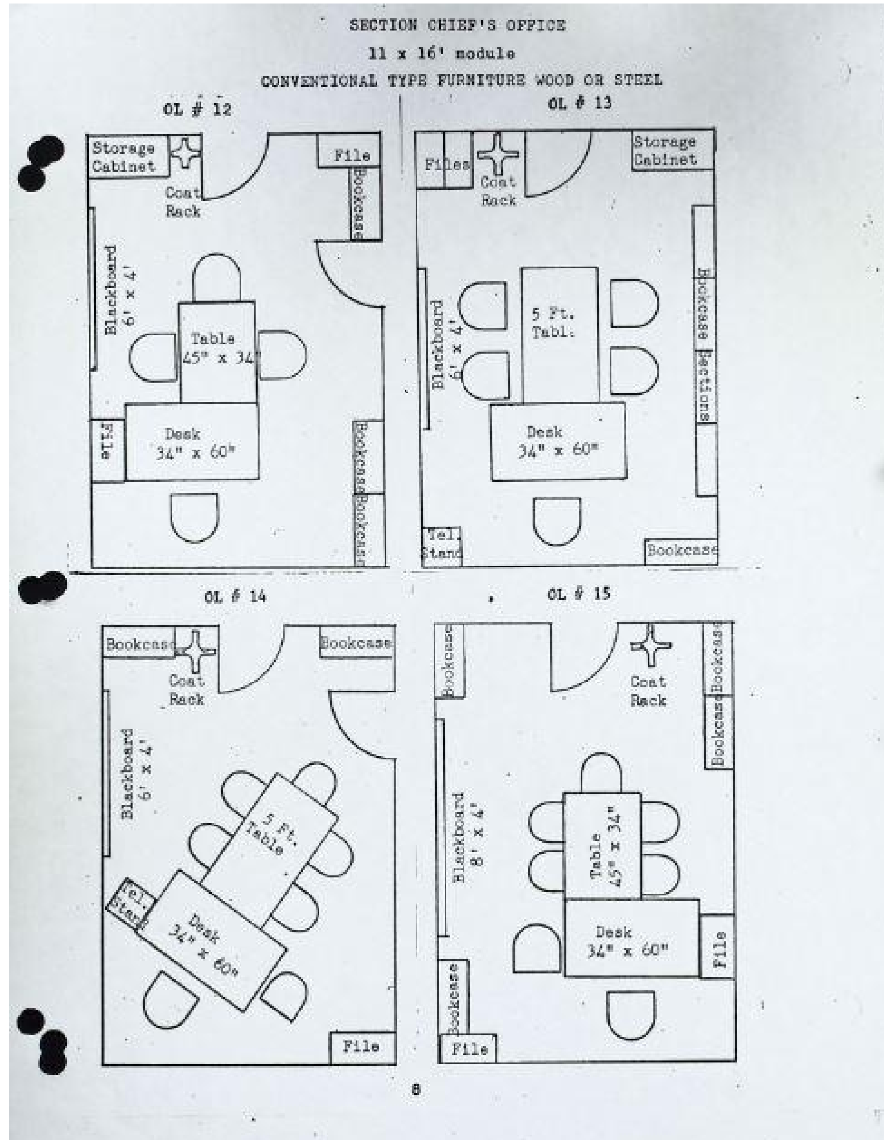
GPL Building Furniture Samples
NIST Library Vertical Files - Gaithersburg Campus



GPL Building Furniture Samples
NIST Library Vertical Files - Gaithersburg Campus



GPL Building Furniture Layout
NIST Library Vertical Files - Gaithersburg Campus



GPL Building Furniture Layout
NIST Library Vertical Files - Gaithersburg Campus

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GPL Building 220 East Entrance - 2021
MTFA Condition Assessment

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GPL Building 220 South Elevation - 2021
MTFA Condition Assessment

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GPL Building 220 West Elevation - 2021
MTFA Condition Assessment

GPL Building 220 West Elevation - 2021
MTFA Condition Assessment

GPL Building 221 North Elevation - 2021
MTFA Condition Assessment

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GPL Building 221 East Elevation - 2021
MTFA Condition Assessment

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GPL Building 221 South Elevation - 2021
MTFA Condition Assessment

GPL Building 221 West Entrance - 2021
MTFA Condition Assessment

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GPL Building 222 North Elevation - 2021
MTFA Condition Assessment

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GPL Building 224 East Elevation - 2021
MTFA Condition Assessment

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GPL Building 222 South Elevation - 2021
MTFA Condition Assessment

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GPL Building 222 West Elevation - 2021
MTFA Condition Assessment

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GPL Building 222 West Elevation - 2021
MTFA Condition Assessment

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GPL Building 223 North Elevation - 2021
MTFA Condition Assessment

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GPL Building 223 North Elevation - 2021
MTFA Condition Assessment

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GPL Building 223 East Elevation - 2021
MTFA Condition Assessment

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GPL Building 223 South Elevation - 2021
MTFA Condition Assessment

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GPL Building 223 West Entrance - 2021
MTFA Condition Assessment

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GPL Building 224 South Elevation - 2021
MTFA Condition Assessment

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GPL Building 224 Wes Entrance - 2021
MTFA Condition Assessment

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GPL Building 225 North Elevation - 2021
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GPL Building 225 East Entrance - 2021
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GPL Building 225 South Elevation Concourse - 2021
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GPL Building 225 West Elevation - 2021
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GPL Building 226 East Elevation - 2021
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GPL Building 226 South Elevation - 2021
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GPL Building 226 West Entrance - 2021
MTFA Condition Assessment

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SECTION C:

INVENTORY OF SIGNIFICANT FEATURES & MATERIALS

MTFA
architecture

SIGNIFICANT AND CHARACTER-DEFINING FEATURES

The design for NIST's General Purpose Laboratories (GPLs) reflects the broader stylistic development of modern architecture from the 1930s to the 1960s. This aesthetic expresses itself at NIST in a focus on proportion, form, materiality, and scale, rather than intricate architectural detail. It is, to use the common vernacular, an expression of function through form, with a reinterpretation of classical interior spatial hierarchies. While Vorhees, Walker, Smith, Smith, and Haines (VWSSH and now known of as HLW) earlier campus and laboratory designs at Bell Laboratories in New Jersey experimented with flexible spaces and mechanical system integration, the expression of the campus buildings remained locally contextual and derivative of the widely accepted Colonial Revival style. With NIST, VWSSH was able to design a thoroughly modern campus expressing the all-pervasive post-war confidence in the ideals of science and technology. The GPLs are excellent examples of mid-century modern architecture stripped of anything but the subtlest ornamentation. However, as with the passage of six decades of service, the needs of the building occupants, pioneering metrologists and Nobel Prize winners among them, are changing and the buildings must be upgraded to meet those needs in the 21st century. In *Preservation Brief 17 "Architectural Character,"* the National Park Service developed guidelines for identifying "character-defining features" which should be taken into account to preserve the integrity of the buildings to the maximum extent possible. This section lists the GPLs character-defining features, and the next section presents a detailed inventory of those features and their materials.

SITE

NIST's Gaithersburg campus is situated on over 579 acres located just west of Interstate 270 in Gaithersburg, Maryland. The three-story GPLs are set to the north and south of the eleven story centrally located Administration Building (B101) of the campus. The administration building serves as the public center, and the GPLs serve as the scientific backbone of the campus. Located about 20 miles from Washington's city center, the then relatively rural site was not only better suited for minimizing interference required for accurate precision measurement science, but was also a safe distance from the potential threat of nuclear fallout in the nearby capital city. The large, pastoral expanse created a blank slate for the architects to develop a fully designed modern campus experience. The buildings could be separated by function and stretched horizontally instead of vertically. The campus was large enough to accommodate future expansion. Records show that the setting of the campus as well as its specific location in Montgomery County, MD was designed to meet the needs of the modern scientist with proximity to good housing, ease of automobile access, and a collegial environment to rival the best of the nation's prized research universities.

Modifications

The basic configuration and relationship of the GPLs to the NIST campus has not changed. The setting has remained pastoral and collegial but the landscaping has noticeably matured.

Character Defining Features

The pastoral viewsheds created by the GPLs setting was intentional in the design of the buildings to provide relief from the intensity of laboratory work. The decidedly orthogonal spatial organization and proximity to landscaping should be retained. When plant materials require replacement due to age, death, or disease consult the NIST Master Plan for appropriate plantings.

Organization and Scale

The importance of proportion of the GPLs is expressed in the organization and scale of the buildings around the axis of B101. There is one symmetrical cluster of four GPLs offset from B101 to the southeast and one asymmetrical cluster of three GPLs offset from B101 to the northwest. The southeast and northwest offsets mimic the offsets of the large volume wings of the large auditorium and library of B101. Each of the GPLs are connected to each other via a glazed spine or *concourse*, some of multiple levels, all running North and South. In turn, the concourses connect the GPLs to B101 and B304 enclosing the green space within. This green space evokes a courtyard, though abstract, which has similar design components to the courtyard within B101 which is set off by glass on all sides. This enclosed greenspace at the GPLs contributes to the feeling of a campus within a campus.

Meticulously rational, the organization of the GPLs uses numerous 1:2 relationships in the layout of the site plan. The width of the green space between the GPLs is double the width of a single GPL. The width of the courtyard created by the concourses is double the length of a single GPL. The north/south axis is equal to the length of three GPLs. Similarly, the length of the building is three times the width of the building. The width of the building is roughly twice the average height of the GPL. These relationships were carefully planned to create a pleasing rhythm to the GPL campus. The rhythm of setting and low-rise scale of the GPLs provides a human-scale to the campus that accentuates the university-like setting for the scientists.

<u>Modifications</u>

The organization and scale of the original seven GPLs have not been modified since their construction. An additional GPL (B227) was added to the northwest cluster in 1999 balancing out symmetry of the GPL layout around B101 and B304.

<u>Character-defining Feature</u>

The axiality of the GPLs around B101 and B304 as well as the concourse spines define the organizational structure of the GPLs. The low-rise buildings contribute to a human scale and define the campus within a campus setting. The 1:2 proportions provide a distinct rhythm to the campus layout.

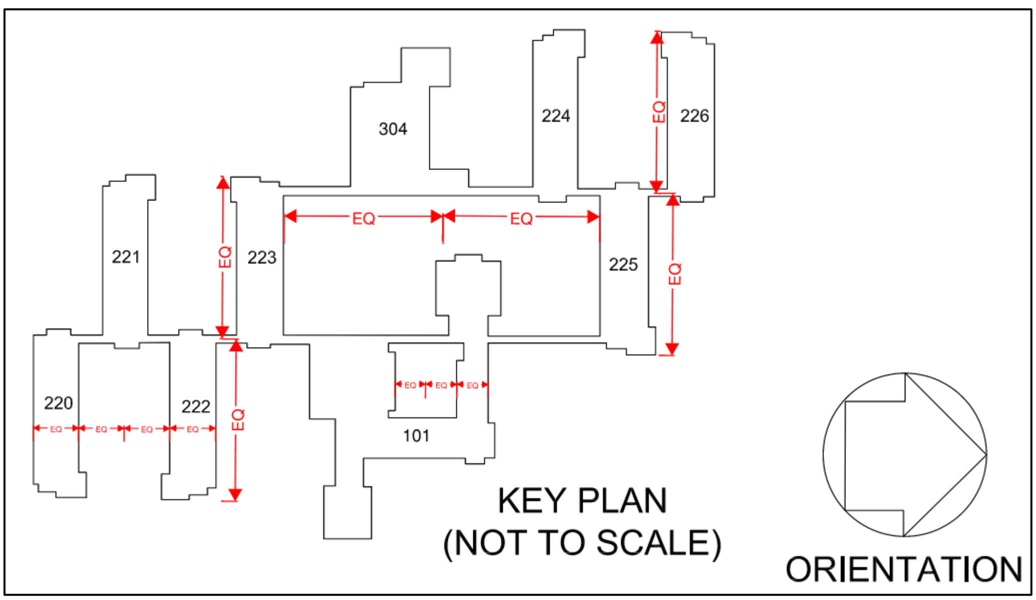


Figure 1 Site plan of GPL core showing multiple 1:2 relationships including GPL to courtyard. (Source: MTFA)

Figure 2: Overview of NIST campus from Google Maps (Source: NIST Masterplan)

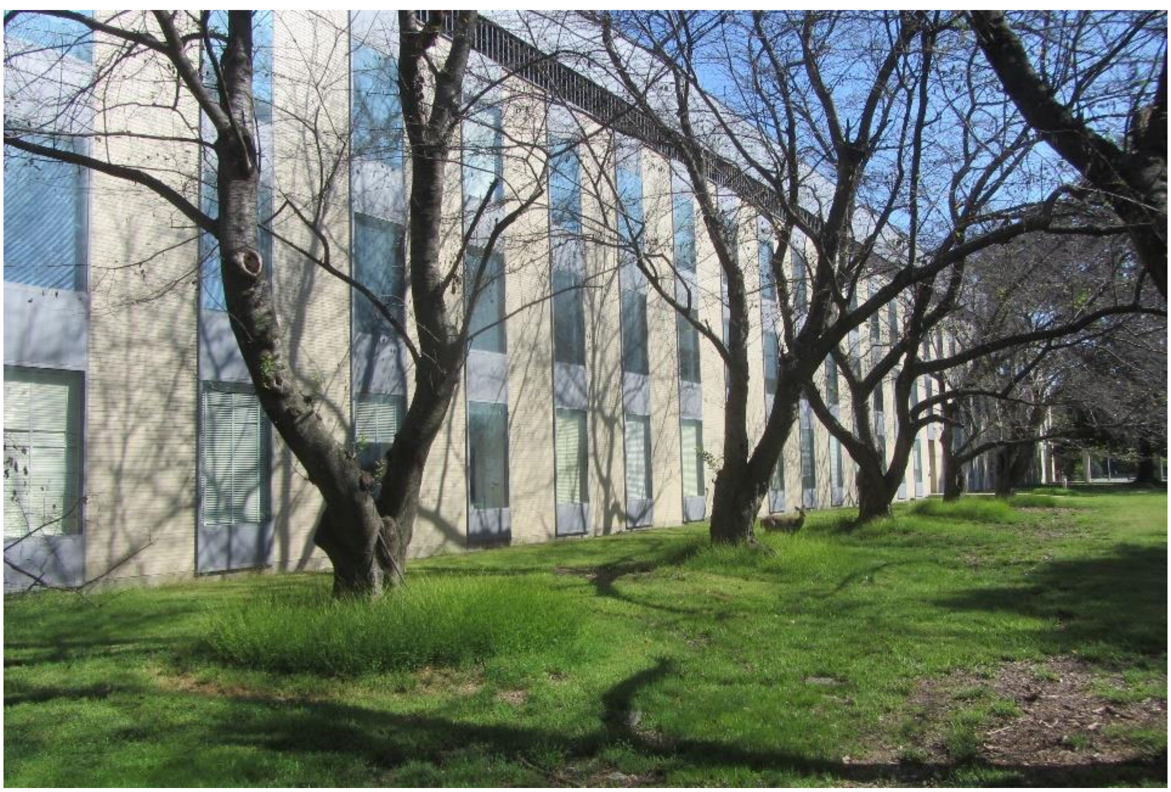


Figure 3: Pastoral views in courtyards adjacent to GPLs complete with deer. (Source: MTFA)

Pastoral Views

Each GPL is separated from another GPL with a landscaped lot that is double the GPL footprint. A large greenspace separates the southeast GPL cluster from the northwest GPL cluster. The perimeter offices of each GPL have views into the landscape that features mature trees and wildlife. Following modernist theory, the voids of the lots are just as much a part of the design as the buildings. The designed mechanical system relied on the fresh air intake at each window facing these lots to circulate air towards the laboratories. At the same time, the pastoral views provided a park-like setting and contribute to the feeling of campus.

<u>Modifications</u>

Some lawns remain open greenswards. Others are given over to utilitarian uses like service drives and lots. In general, the trees have matured since the original construction.

<u>Character-defining Feature</u>

Pastoral views and landscaped lots are an important part of the design intent and should be retained. Mature Trees should be retained as much as possible. The low-rise buff brick enclosure for liquid nitrogen tanks neatly defines the west end of the 221/223 greenspace.

BUILDING EXTERIOR

The identical rectangular footprint of Each GPL building is oriented such that the long, broad elevations face north and south while uninterrupted buff brick shear walls characterize the east and west elevations. The buildings are typically three-stories high with a mechanical level above. The mechanical level is expressed by a continuous, interlocking series of light gray flat aluminum panels surmounting a contrastingly dark and noticeably narrower band of vertically set louvers. The aluminum paneling and louvers are also oriented for a vertical expression but by capping the rectangular form, they actually accentuate the horizontal length of each building. Offsetting this overwhelming horizontality of the north and south elevations, are 33 bays defined by narrow piers of buff brick and corresponding apertures for the three levels of windows and accompanying metal spandrel panels that stretch from grade to the underside of the penthouse louvers. The brick form at the main entrances located on either the west or east elevations rise higher that the rest of the building and features no openings for the full-height of the block. The main entrance to each GPL, and larger brick form, is located opposite of whichever end of the building is attached to the connecting concourses.

While the structure is not expressed in the form, the massing suggests the function of the spaces. This is consistent with the work of prominent modernist architects like Louis Kahn and Philip Johnson where the materiality of brick and glass was expressed over the structural frame. In the 1950s, Louis Kahn was also exploring a modernist theory of “servant and served” spaces where the service sector of a building was expressed as a different form. The windowless bookends of the GPL expressed in solid brick suggest is the service center for circulation including stair halls and elevators. In contrast, the rectangular horizontal massing of the primary wing is the space of the “served” and includes the office and laboratories.

Modifications

The current buildings as described in this report have not been modified from the original design intent in so far as form and massing.

Character-defining Feature

The repeated form of the GPLs as a rectangular form with vertical expression, capped with a horizontal mechanical level, and bookended with brick masses reflect the influences of the International Style. Additions, if contemplated to fulfill programmatic need, should by way of color, material, rhythm, massing, scale and form be developed to complement rather than contrast the existing GPLs without slavish mimicry and in accord with the Secretary of Interior Standards.

Cream-Colored Brick

The cream-colored brick unifies each GPL building envelope from the windowless bookend forms to the bays between each window bay in the main wing. This brick is part of the designed material hierarchy used throughout the campus. The use of cream-colored brick was an intentional design decision to differentiate laboratory buildings from general service buildings, expressed in red brick.   Characteristic of modern architecture, the brickwork has no ornamentation which makes the sharp 90-degree corners of the building forms more pronounced.

Modifications

Some of the cream-colored brick has been replaced over time with brick that matches the original. NIST has been generally successful with blending replacement brick with original bricks.

Character-Defining Feature

Cream-colored brick is part of the material hierarchy on the designed campus and is a character-defining feature of the GPLs building envelope.

Curtain Wall Fenestration

The curtain wall fenestration pattern of the GPLs is expressed in aluminum on the north/south axis of the buildings. The typical GPL has 33 bays of curtain wall windows that consist of plate glass openings and aluminum spandrels between floors. Each window bay features an aluminum frame that projects slightly from the wall plane creating precise 90-degree arrises, characteristic of the detailing on the building at every scale from the windows to the building form. That projection helps the curtain wall to read as a unit and contributes to vertical expression of the exterior envelope.

Modifications

Some of the glazing has been modified to replace single-glazed units with double-glazed units. The spandrel panels have been modified on some buildings to address drainage. A UV film was added to some glazing panels. The form of the curtain wall fenestration has remained intact on all GPLs.

Character-defining Feature

The curtain wall fenestration composition in a projecting aluminum frame with clear glazing and aluminum spandrel panels is a character-defining feature of the GPLs.

Figure 5: Curtain wall fenestration to the left. Glass concourse contrasts with the fenestration and solid building forms.

Figure 6: Brick forms without ornamentation or window openings. The 90 degree corners are pronounced.

Storefront Entrances

The storefront entrances are set off from the projecting brick mass with an aluminum cantilevered roof at the first floor. This roof wraps the first story to the loading dock on the corresponding north/south elevation. The storefront glazing is divided by aluminum mullions within an aluminum frame. The central double-leaf aluminum doors feature single-lights.

Modifications

Many of the aluminum doors and roof fascia have been replaced with materials in kind. The lower portion of the glazing has been painted. Generally, the form of the storefront entrances has remained intact.

Character-defining Features

The cantilevered roof and aluminum detailing, both at the fascia and the glazing framing are character-defining features.

Concourse

The concourses are enclosed walkways that allow access to each GPL as well as B101 and B304. Constructed with aluminum and glass curtain walls, the concourses act as a spine from which the GPLs and adjacent courtyards extend in an alternating pattern. The concourses also serve to delineate the larger courtyard that connects the two clusters of the GPLs at the southeast and northwest corners of the core campus. The design intent for the glass concourses was for a transparent connection between the buildings to contrast with the solid massing of the building form. They not only link the buildings together but also provide visual access to an inter-connected scientific community and allow for spontaneous meetings to promote cross-disciplined scientific thought.

Modifications

The curtain wall of the concourse between GPL 225 and 226 was renovated with a different curtain wall system that included dark-finished aluminum with panels covering the lower third of each floor.

Character-Defining Feature

The glass curtain wall of the concourses contrast with the main GPL block to give prominence to the building form. The large scale and transparency of the glass panels are character-defining features that align and distinguish the concourses. Similarly to the storefront, the glass materials signify circulation and are part of the original architect's design intent.

Insulated Metal Paneling

The attic level of the main block of the historic GPLs are clad in gray aluminum insulated metal paneling. This material expresses the mechanical level of the building to differentiate it from the occupied floors below. The metal paneling is installed in a vertical orientation just as the curtain wall fenestration is expressed vertically. However, the insulated metal paneling caps the entire main block of the GPL abstracting a classical frieze to unify the horizontal block of the building form.

Modifications

The insulated metal paneling has not been significantly modified. However, test and probes from the inside indicate that areas of insulation have failed.

Character-Defining Feature

The insulated aluminum paneling is part of the design material hierarchy on campus where it is used to signify mechanical spaces. The material and reference to a modern frieze are character-defining features of the elevations.

BUILDING INTERIOR

The organization of the interior program is carefully defined in the GPLs. The core of the buildings, or the primary spaces, are the laboratories. The laboratory core is accentuated by the corridor race track and the sophisticated mechanical, electrical, and plumbing systems are integrated in such a way to allow for flexibility of room sizes and use. The labs act as closed units without any visual connection to the exterior setting. The secondary spaces, the offices, line the outer perimeter of the laboratory core and prominently feature windows for relaxing views out to the pastoral landscape as well as fresh air intake from the mechanical system. Light, fresh air, and green views allow a place of refuge from the laboratory spaces. The tertiary spaces, the service core, is concentrated on one end of the building and is defined with a change in materials from the labs or offices. Finally, the utility service spaces are focused in the attic level rather than placed in pockets around the building. This placed the needs of the laboratory, and its customization and variations within a rigid architectural order, as the primary function of the building with a service orientation from the top down.

<u>Modifications</u>

The spatial organization of the GPLs has not been significantly altered. The original design intended for flexibility in room sizes and uses and the labs/offices are frequently adjusted to meet the needs of the users.

<u>Character-Defining Features</u>

The spatial organization of the GPLs balances the dichotomy of intense scientific work with relaxed profession collaboration. The separation of the primary, secondary, and tertiary spaces is a character-defining feature of the buildings' organization.

Entrance Lobby

The lobbies are the formal entrances to each building located in the larger brick wing on the east or west elevation. This space is finished with typical mid-century modern materials of glazed brick, plaster, stainless steel, and terrazzo. The lobby connects the building user to circulation spaces including the main stair hall and the first floor "race track" corridor connecting the offices and laboratories.

Figure 7: View from lobby to exterior showing storefront curtain wall system and lobby finishes.

<u>Modifications</u>

The configuration of the lobbies has not been modified from the original design. Some finishes have been changed, such as plaster finishes, entrance doors, and glass coatings, but the character of the spaces remains intact.

<u>Character-Defining Features</u>

The purpose of the entrance lobby as the main point of access for circulation around the building interior should be retained. The historic finishes in this space are of a higher quality than the interior corridors and contribute to defining the space.

Circulation and Color-Coded Wayfinding

The circulation within GPLs is defined by the race track corridors on each floor, stair halls at each end of the building and at midpoints of the long corridors, and one elevator at each end of the building. The corridors divide the interior laboratory spaces from the offices. Contrasting colors of structural facing tile at either end of the long main corridors distinguish the concourse end of the building from the external end. The tiles were used in each building as an orientation device within a rationally designed and repetitious set of buildings. The stair halls feature similar finishes to the entrance lobbies and the corridors with terrazzo, stainless steel, and colored structural facing tile. The elevator cabs are finished with similar materials like stainless steel but also with porcelain panels which are common in other buildings on campus.

Figure 8: Interior stair hall showing terrazzo, wood handrails, and structural facing tile in different colors.

Modifications

The circulation configuration has not been modified in any of the GPLs. The finishes have been replaced or altered in many of the buildings, particularly GPL 222. The extent of these modifications has been made in the corridors, especially the painting of the colored structural facing tile to neutral colors.

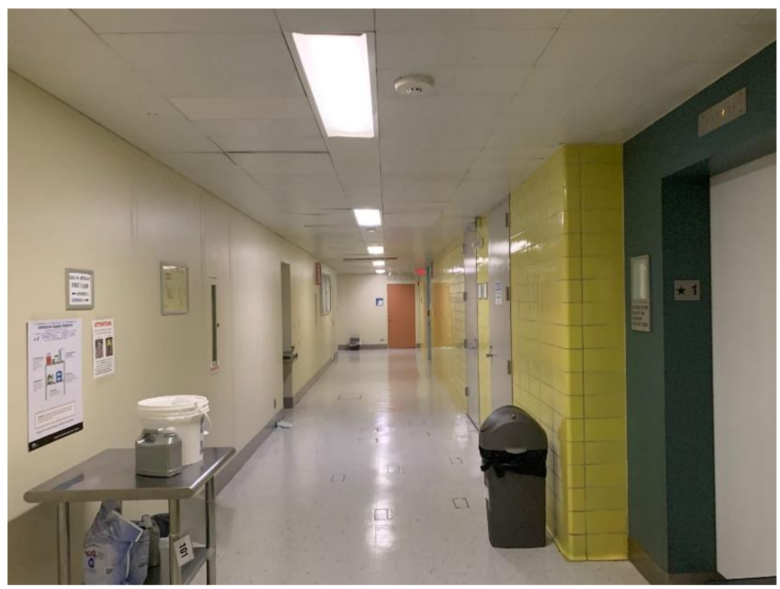


Figure 9: Interior corridor view at concourse end showing yellow structural facing tile that serves as wayfinding device for building users.

Character-Defining Features

The elevated mid-century modern finishes used in all these spaces include terrazzo, clear-finished wood, stainless steel, and colored structural facing tile. These finishes should be retained where possible to preserve the historic character of the spaces.

HISTORIC BUILDING ZONE CLASSIFICATIONS

Preservation zoning is a tool widely used by the federal government, cultural institutions, and the historic preservation profession to inform the treatment of historic buildings. Preservation zones are often developed to accompany Historic Structure Reports and Building Preservation plans to establish a hierarchy of significance and integrity for interior and exterior architectural elements. The preservation professional considers the property's history, significance, and evolution over time in conjunction with research and field verification to develop criteria for character-defining features worthy of preservation.

Four preservation zone classifications have been overlaid on the interior spaces of the General Purpose Laboratories (GPL) to identify, document, and clarify preservation priorities of the historically and architecturally significant extant features and spaces of the building. The four preservation zone classifications are: Preservation Zone; Rehabilitation Zone 1; Rehabilitation Zone 2; and Renovation Zone. The preservation zone classifications are depicted by different colors on the floor plan drawings.

This report reviewed the significant architectural features of the interior spaces that were included in the two highest priority zone classifications. Laboratories and special laboratories were out of scope for this evaluation but these rooms were surveyed when accessible. The elements within Restoration and Rehabilitation zones are further detailed by inventory lists which itemize the significant features within the area or space and the related material, finish, and approximate date of those listed features. Photographs document significant features within the inventory.

This classification system provides guidance to NIST management and staff when determining what magnitude of intervention and disruption of historic fabric is appropriate in a given space during maintenance and renovation activities. It also informs design decisions for sensitive alterations and additions within the historic building.

Spaces with Significant Original Finishes

Interior spaces with the highest levels of significance and character defining features include the lobby, corridor, stair hall, and concourse of the GPLs. Such areas have been documented in-depth as major renovations are anticipated for the GPL interiors in the near future. The goal of this document is to guide future preservation, restoration, and renovation efforts by indicating original materials and zones of high integrity.

Nearly all interior spaces, with the exception of Building 222, in the GPLs retain most or all of their original finishes. These finishes include terrazzo and tile flooring, perforated aluminum or mineral plastic acoustical tiles, baked enamel steel partitions, structural facing tile walls, metal doors and surrounds, and aluminum or stainless-steel hardware. These spaces still possess a high degree of architectural integrity, which would typically qualify them for preservation. However, these are also practical spaces that need to adapt to changing needs so that the GPLs remain viable, usable structures.

Areas with the highest levels of original materials include:

- Floors 1 through 3 of Building 220
- Floors 1 through 3 of Building 221
- Third floor of Building 223
- Floors 1 through 3 of Building 224
- Floors 1 through 3 of Building 225.

Such areas have undergone replacement of approximately 1-5% of their original vinyl asbestos tile (VAT) and perforated aluminum acoustical ceiling tiles and retain a vast majority of their original ceiling, wall, and floor finishes.

Locations with slightly less retention of original materials include:

- Basement of Building 220
- Floors 1 and 2 of Building 223
- Floors 2 and 3 of Building 226.

These GPL floors are distinguishable with replacement of 5-10% of their original materials, and often feature alterations and additions to the original finishes. Select spaces have lost 15-30% of the original materials and include the basement of Building 225 and first floor of Building 226.

Building 222 is a singular example of a GPL that has lost 90% of its original interior features. The building underwent recent renovations, removing the original ceiling, wall, and floor materials while retaining minimal finishes such as select hollow metal doors, bathroom finishes, and structural facing tile located at the ends of the corridors and in the stair halls.

Preservation Zones – Definitions

Preservation Zone (red)

Spaces identified as Presrevation Zones are public or private spaces with a high level of integrity and architectural finish, possessing architectural and/or historical significance, and containing significant architectural features. These spaces represent the original design intent.

These areas have unique or distinctive architectural features, such as original materials or details, representative examples of highly skilled craftsmanship, or the work of a notable architect or builder. For the General Purpose Laboratories, the preservation zones are typically applied to the circulation spaces, such as corridors, stair halls, and concourses, where the original materials are extant. In the modular and flexible design of the GPL, the circulation spaces remain constant and the form expresses the function of a separation between laboratories and offices as well as a means for interconnecting the different departments throughout the GPL complex. While the materials are simple, in keeping with a modern International Style aesthetic, they are highly representative of the design intent by the original architect.

Architectural features in these spaces should be preserved. If any work is done in these zones as part of repair or alteration project, the significant architectural features are to be restored to their original appearance.

Treatment Guidelines for Preservation Zone

The overall volume and architectural features should be maintained and preserved as a highest priority. Treatment or intervention in a Preservation Zone should be very carefully planned and designed so that any alteration (for example, installation of new or upgraded building systems such as ductwork, piping, conduit, etc.) will result in little or no visible impact, and little or no loss of historic fabric. Where repair or restoration of architectural features is required, that work should conform to current technical standards.

All work in Preservation Zones should be reviewed and approved by NIST’s Federal Preservation Officer.

Rehabilitation Zone 1 (yellow)

Spaces identified as Rehabilitation Zone 1 areas are public or private spaces with a moderate to high level of integrity and architectural finish, possessing architectural and/or historical significance, and containing significant architectural features that should be preserved or restored as part of any repair or alteration project.

These spaces contain significant architectural features and original materials, but have less integrity than the Preservation Zone in overall character. The offices and laboratory core fall in the Rehabilitation Zone 1 because these spaces were always intended to be modified to adapt to the changing needs of the scientists. While many of the historic materials and elements remain in the spaces, these spaces have also been altered with modern finishes.

Architectural features in these spaces should be preserved. If any work is done in these zones as part of repair or alteration project, the significant architectural features are to be restored to their original appearance to the greatest extent possible.

Treatment Guidelines for Rehabilitation Zone 1

Spaces in this category may be rehabilitated to meet modern functional needs, but every effort should be made to retain and preserve the significant architectural features. New materials may be introduced, but this should be done in as sensitive a manner as possible to assure retention of architectural character of these spaces. Visual intrusions should be avoided. Where repair or preservation of existing features is required, that work should conform to current technical standards.

All work in Rehab Zones 1 should be reviewed and approved by NIST’s Federal Preservation Officer.

Rehabilitation Zone 2 (yellow/green)

Spaces identified as Rehabilitation Zone 2 areas are public or private spaces with a moderate to low level of integrity and architectural finish, possessing architectural and/or historical significance, and containing character-defining features that should be preserved or restored as part of any repair or alteration project.

These spaces contain significant architectural features and original materials, but their retention may conflict with modern comfort and sustainability efforts. The bathrooms fall into this category for the GPL.

Architectural features in these spaces should be considered for re-use in a new design. If any work is done in these zones as part of repair or alteration project, the significant architectural features are to be integrated to the greatest extent possible.

Treatment Guidelines for Rehabilitation Zone 2

Spaces in this category may be rehabilitated to meet modern functional needs, but every effort should be made to integrate significant architectural features. New materials may be introduced, but this should be done in as sensitive a manner as possible to permit retention of the general architectural character of these spaces. Visual intrusions should be avoided. Where repair or preservation of existing features is required, that work should conform to current technical standards.

All work in Rehab Zones 2 should be reviewed and approved by NIST’s Federal Preservation Officer.

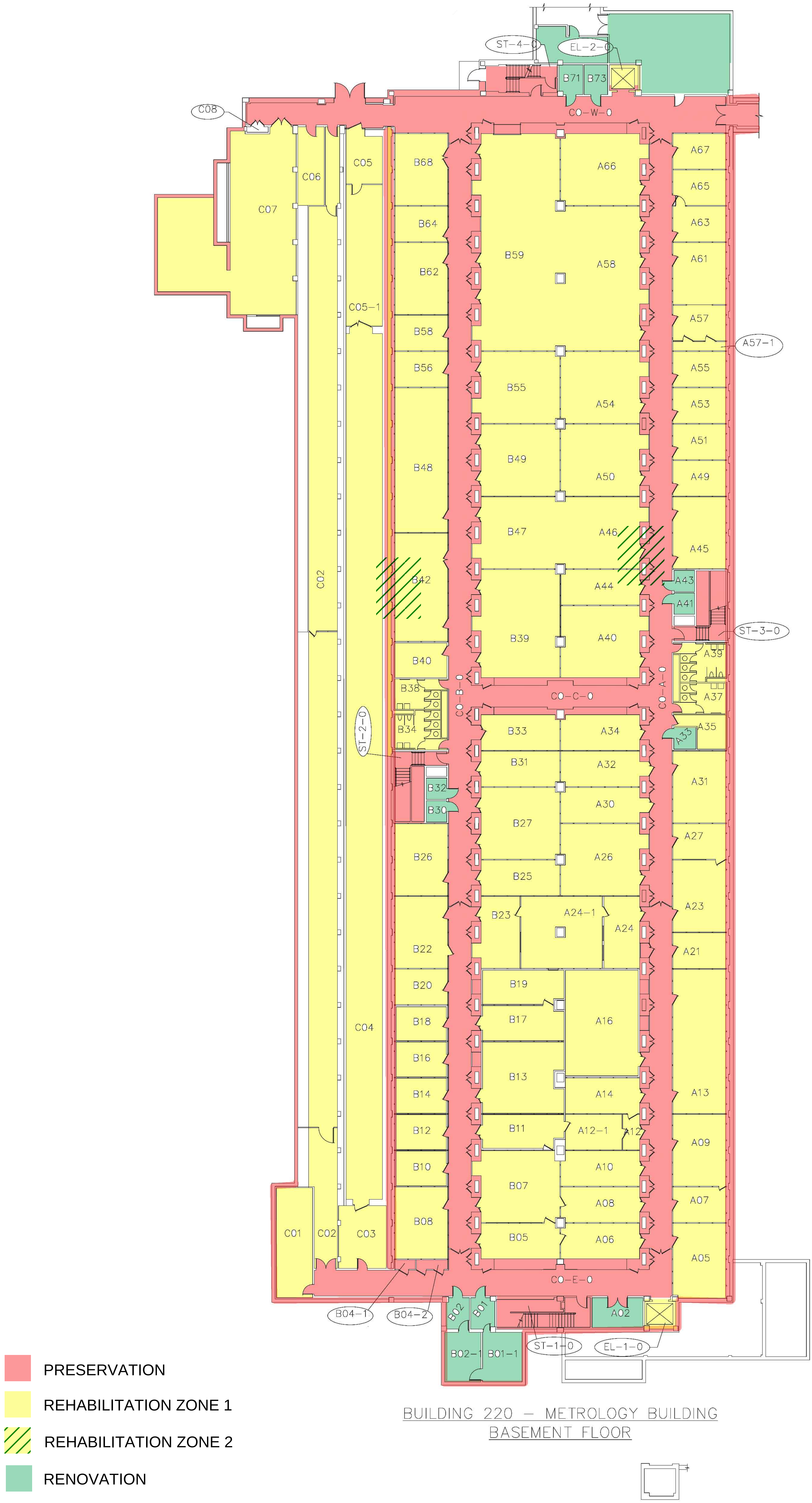
Renovation Zone (green)

Spaces identified as Renovation Zones are areas of minimal architectural or historical significance containing few or no architectural features that will need to be preserved or restored as part of a repair or alteration project. Renovation Zones may contain isolated elements of historic and architectural significance that should be preserved and maintained.

For the GPL, these spaces are mostly closets and unfinished attic spaces with very little historic integrity.

Treatment Guidelines for Renovation Zone

Renovation Zone spaces are often not publicly accessible and contain few significant architectural details therefore, the retention and preservation of architectural features is of minimal importance. Use of contemporary design elements is recommended as a means of preserving the overall continuity of these areas of the building. Although substantial redesign of these areas is acceptable, alterations should temper the intrusive quality of projects such as installation of mechanical and electrical systems through careful coordination of new work with existing architectural features and finishes to the greatest extent feasible. Where repair or preservation of existing features is required, such work should conform to current technical standards.


PRESERVATION
REHABILITATION ZONE 1
REHABILITATION ZONE 2
RENOVATION
BUILDING 220 – METROLOGY BUILDING
BASEMENT FLOOR

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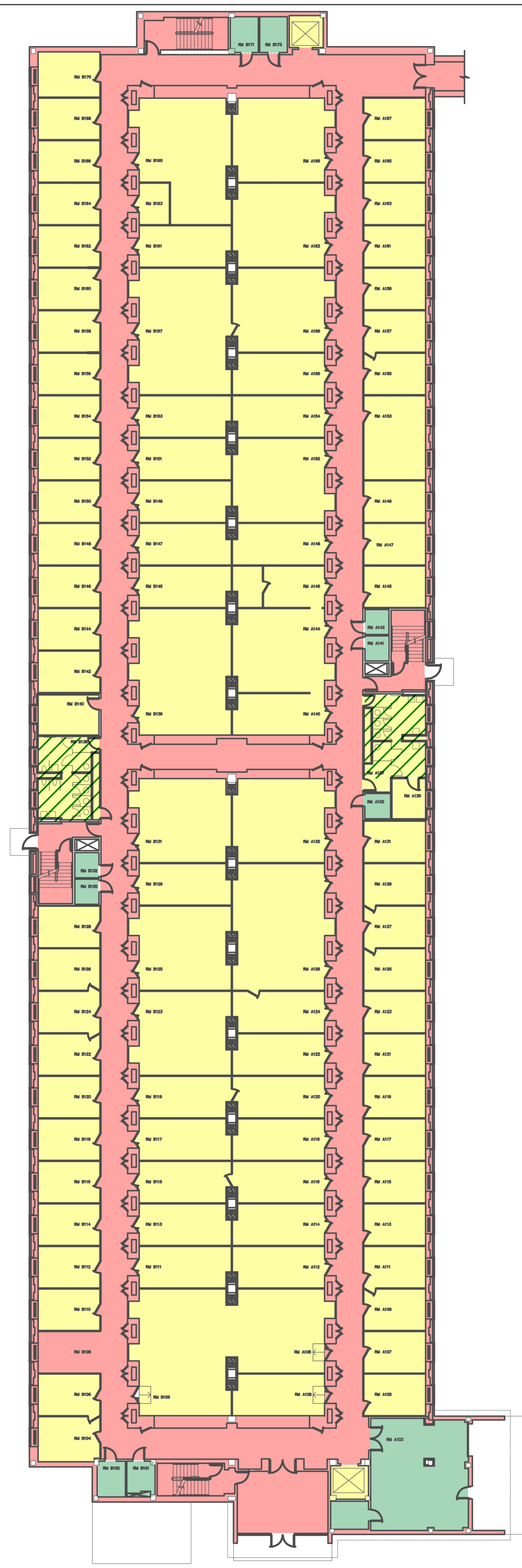


BUILDING 220 — FIRST FLOOR

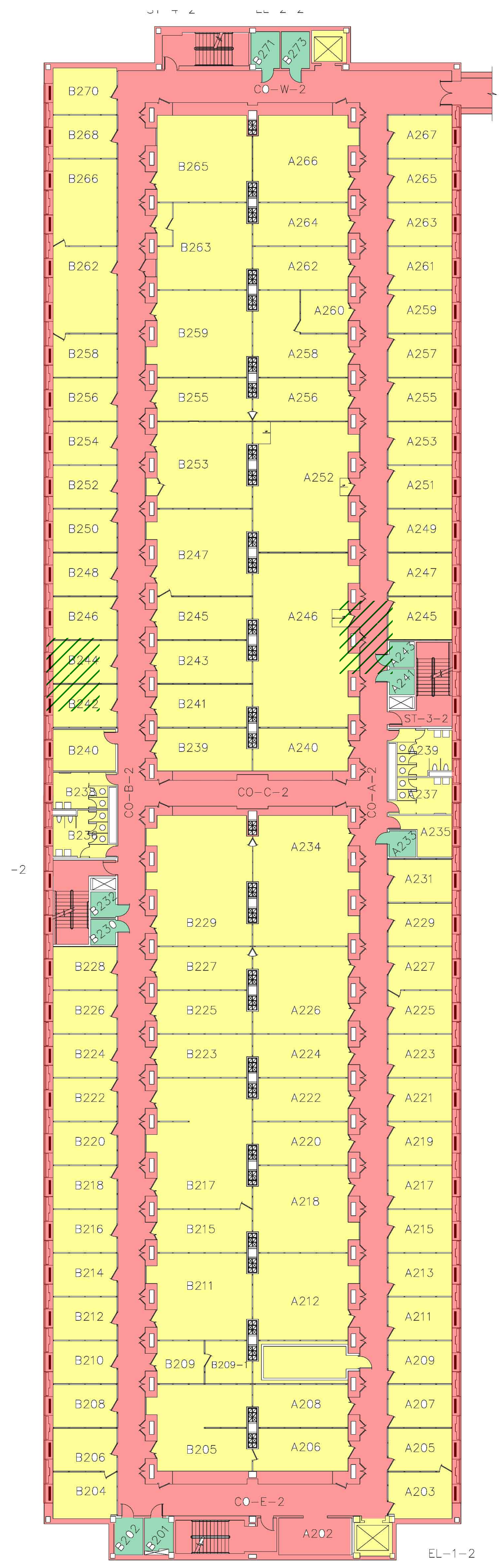
DATE OF LAST REVISION: 01–7–2020

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION



PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 220 — SECOND FLOOR

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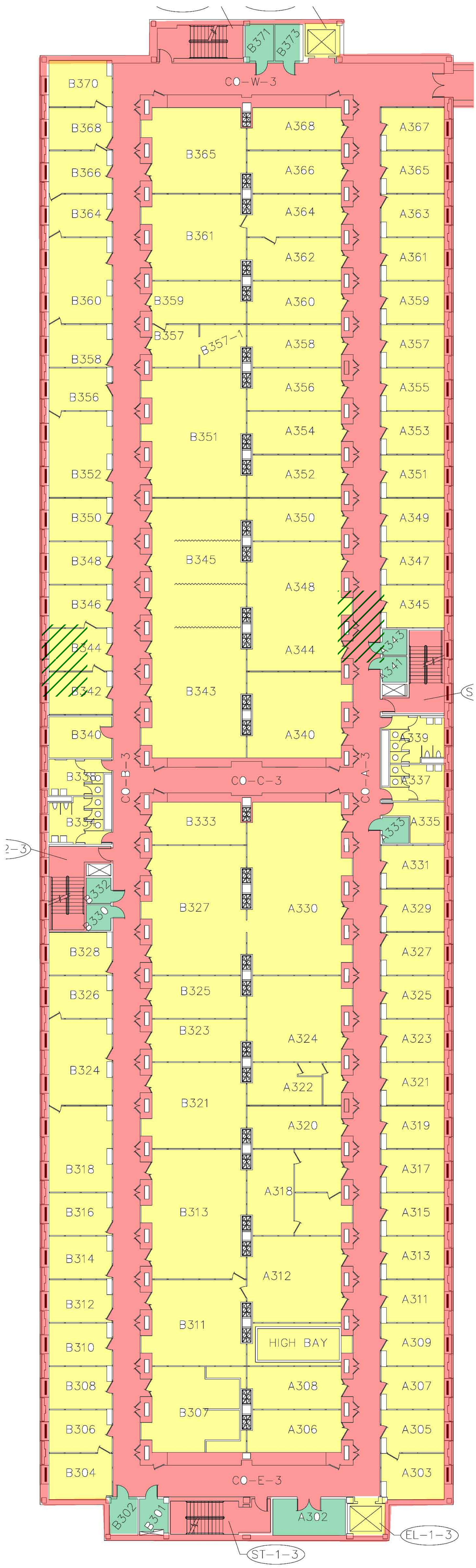

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 220 — THIRD FLOOR

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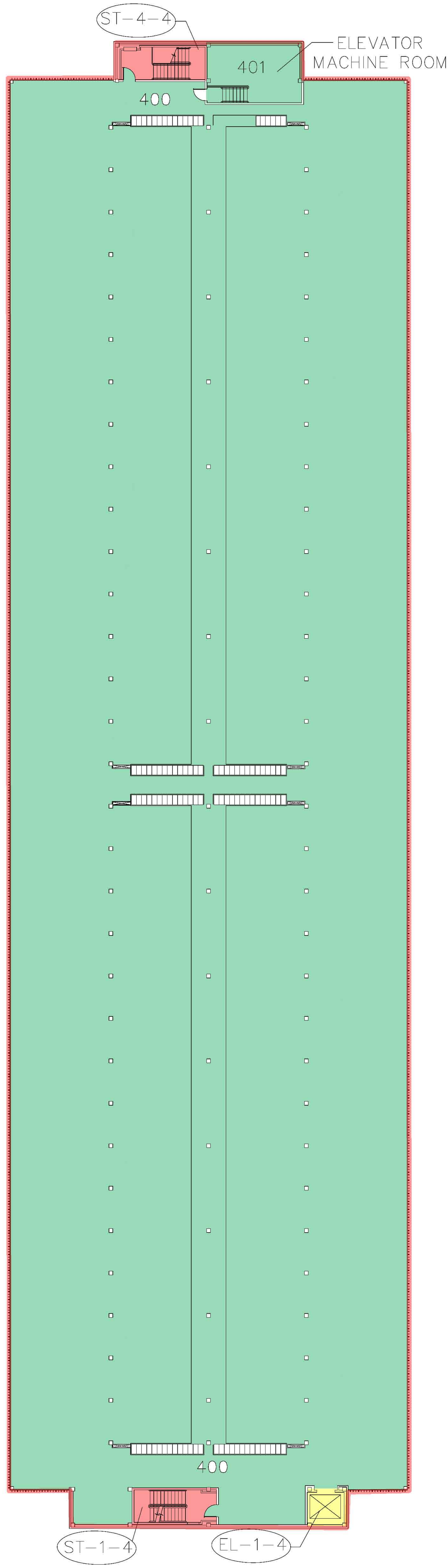
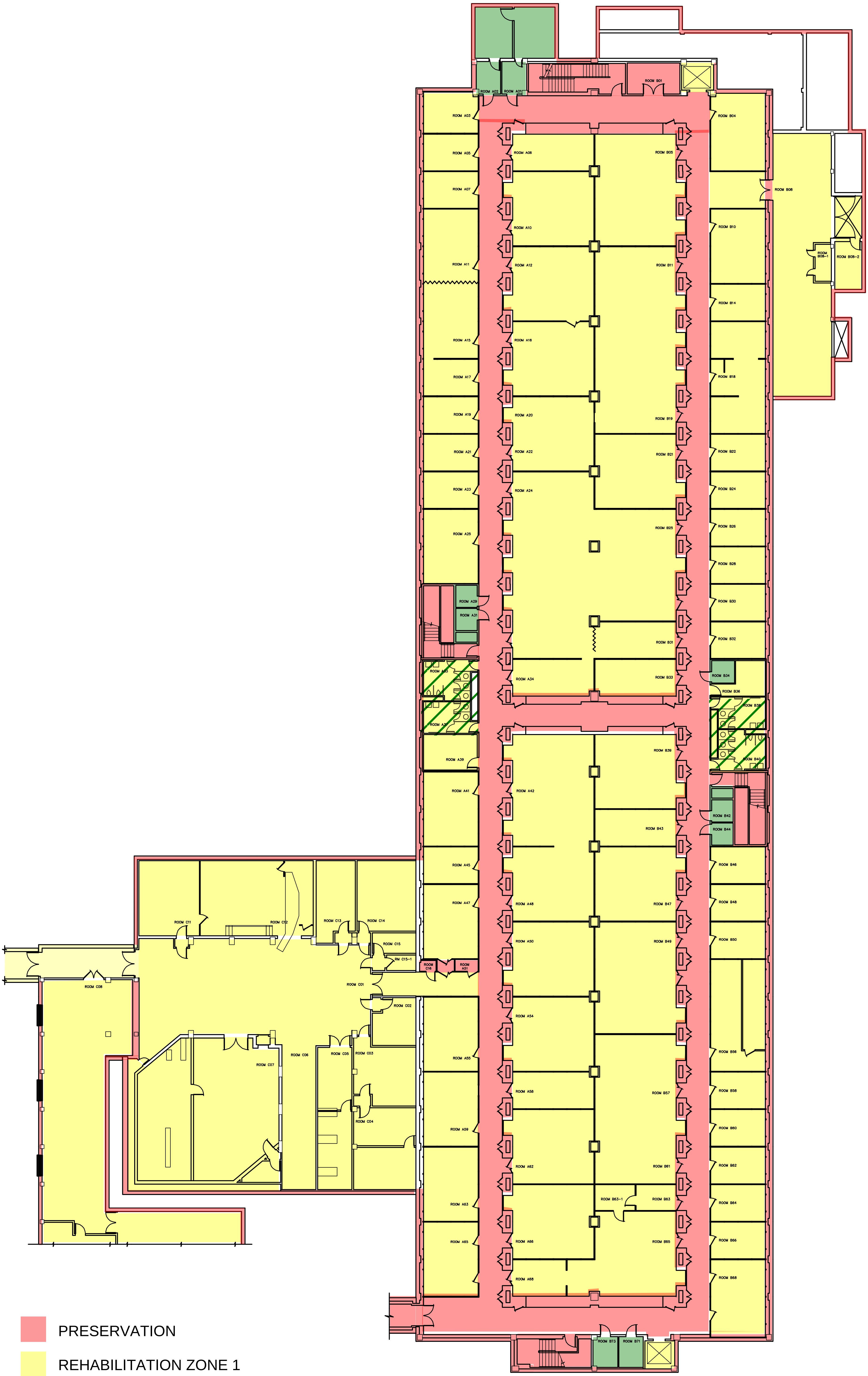


PRESERVATION
REHABILITATION ZONE 1
REHABILITATION ZONE 2
RENOVATION

BUILDING 220 – ATTIC FLOOR



PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 221
BASEMENT FLOOR
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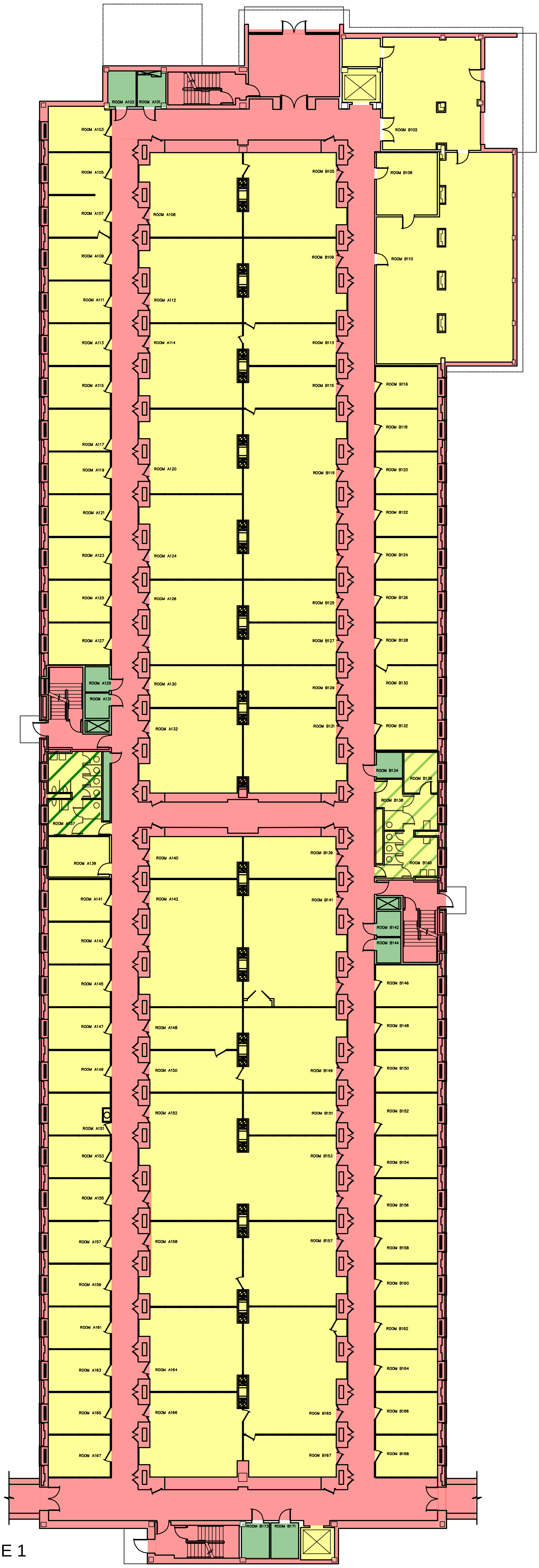

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 221 — FIRST FLOOR

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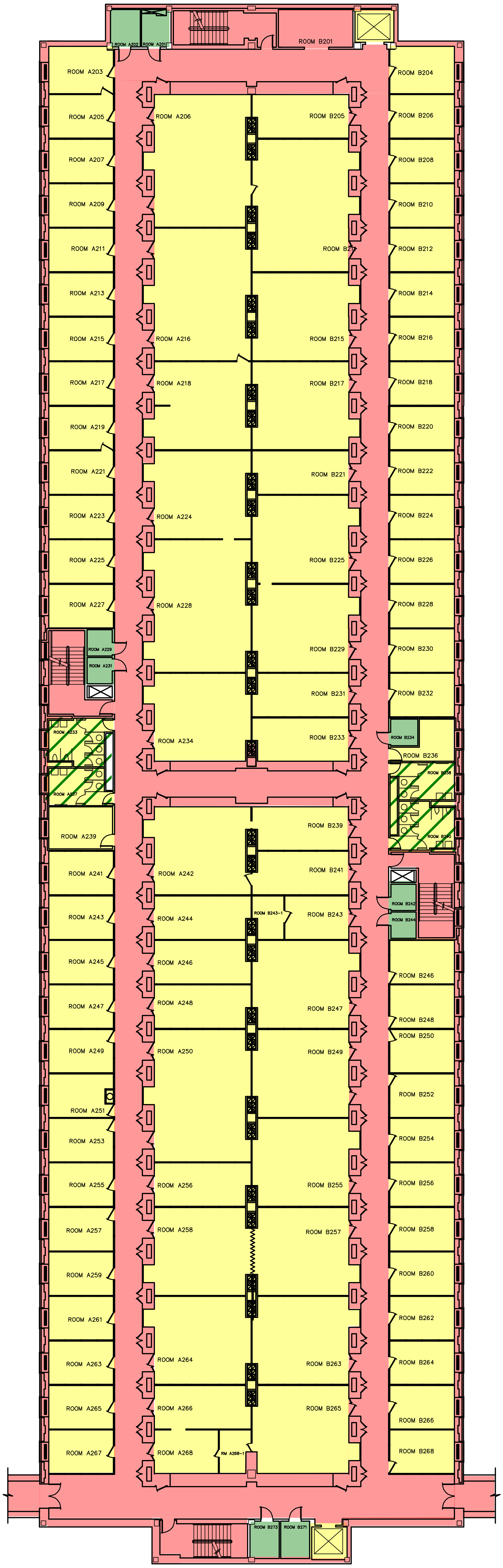


PRESERVATION

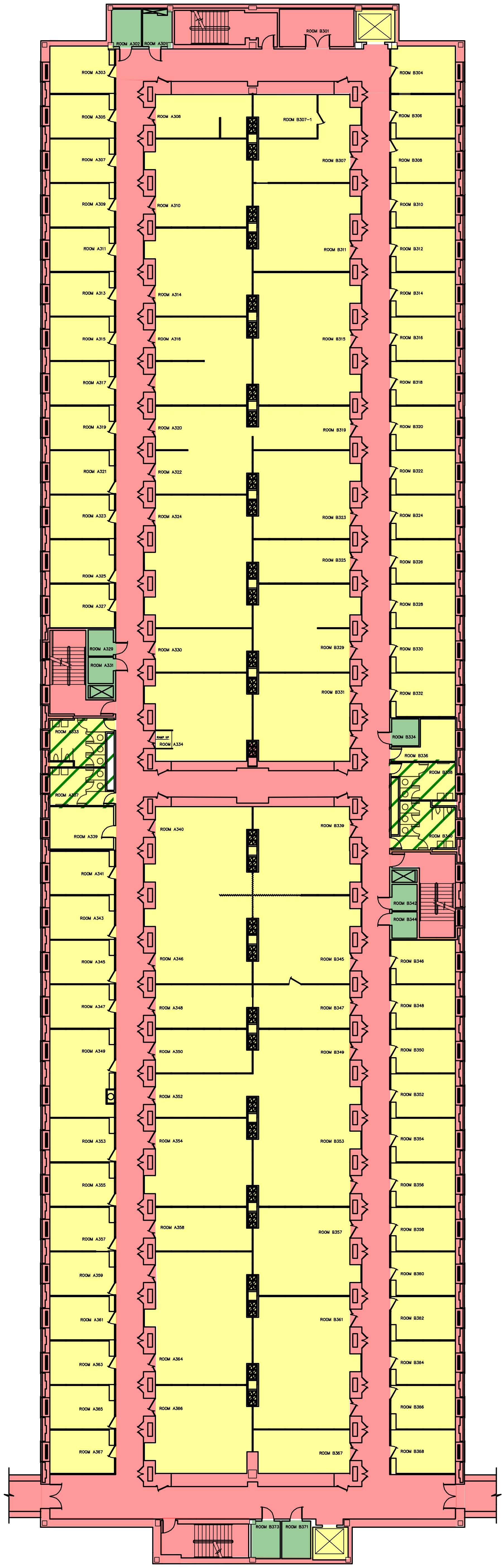
REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 221 SECOND FLOOR

DATE OF LAST REVISION: 8–27–18



PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 221 – THIRD FLOOR

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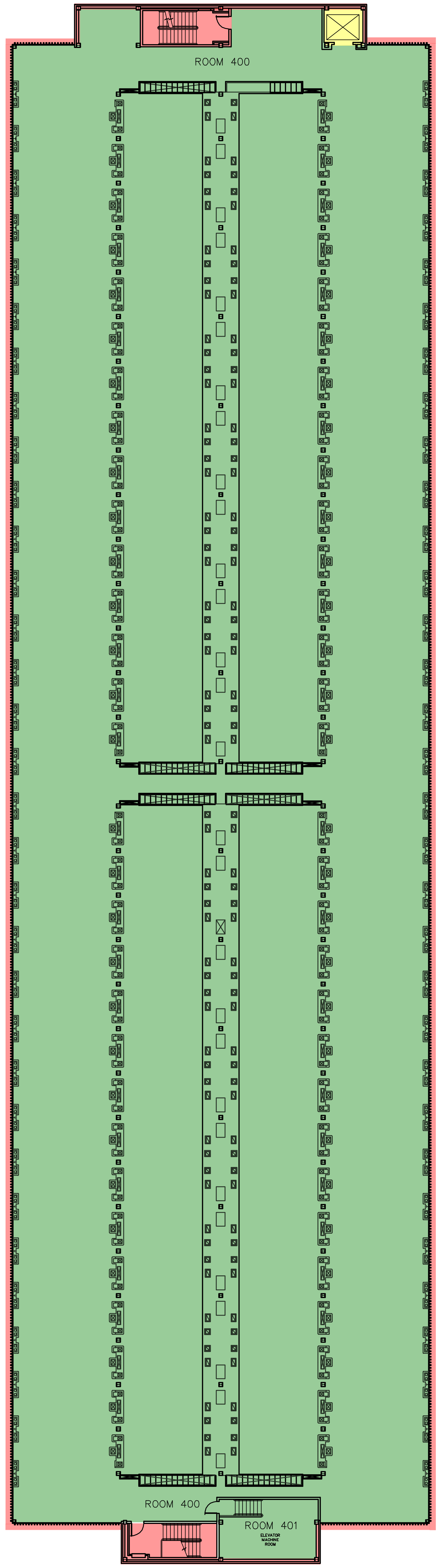

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 221 — ATTIC FLOOR

DATE OF LAST REVISION: 09/10/2013

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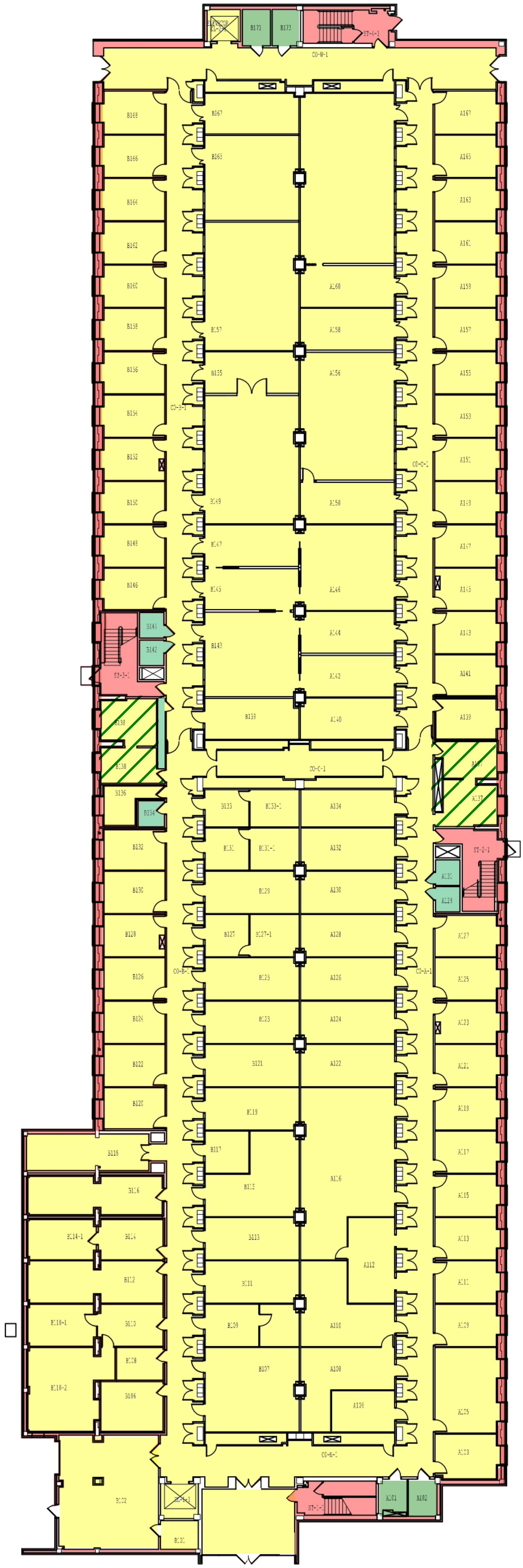

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 222 – FIRST FLOOR

DATE OF LAST REVISION: 10/26/2016

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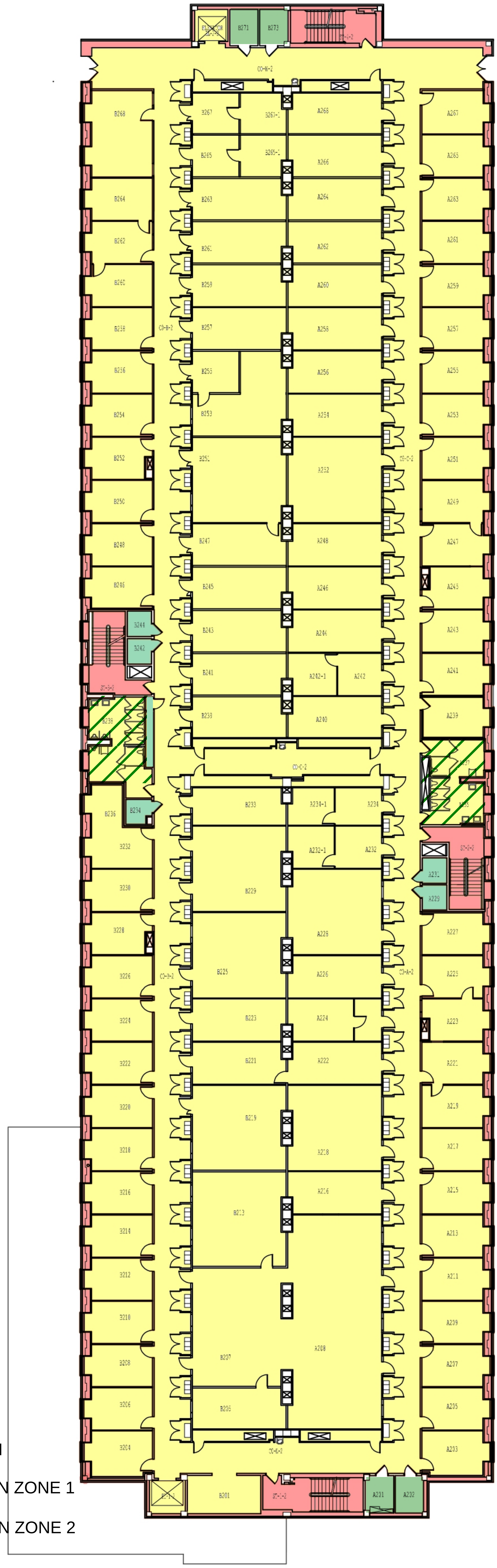

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 222 – SECOND FLOOR

DATE OF LAST REVISION: 8/22/19

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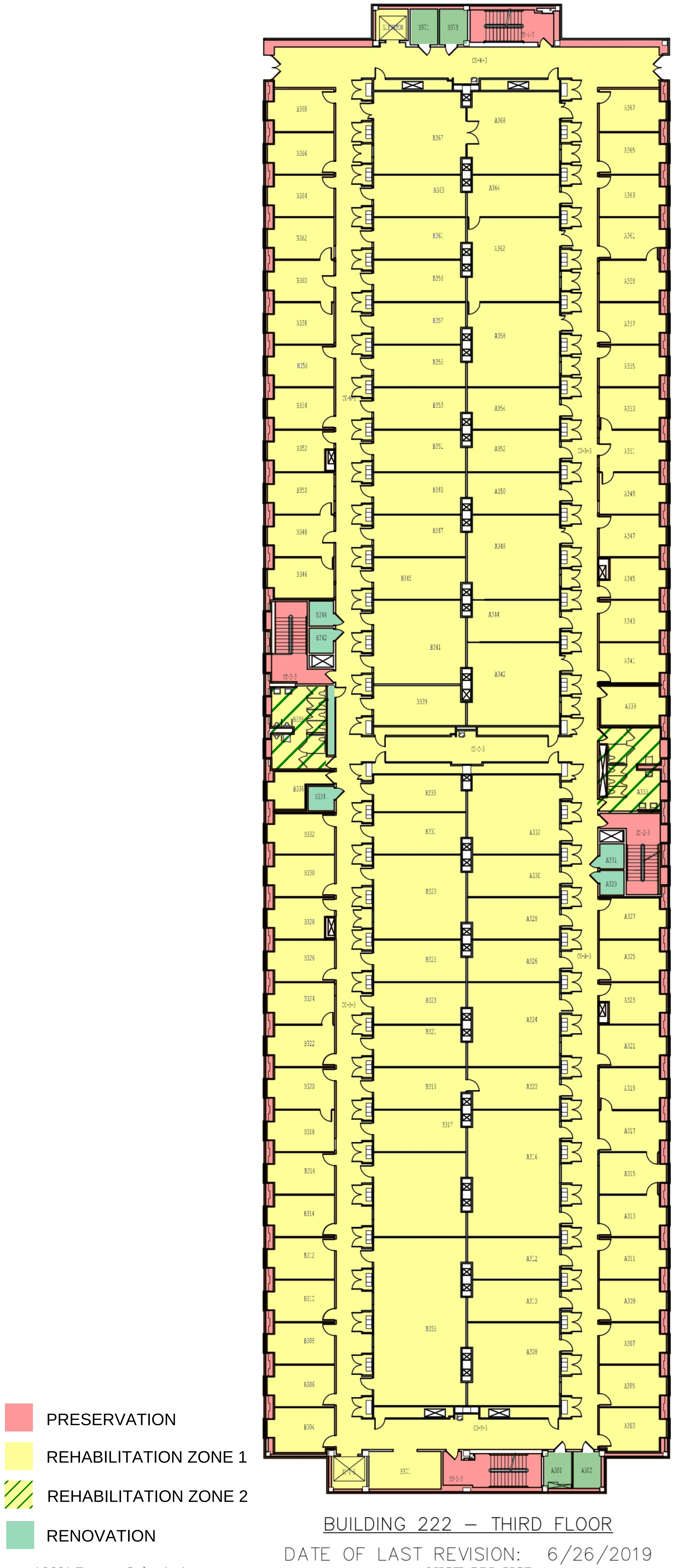

BUILDING 222 — THIRD FLOOR

DATE OF LAST REVISION: 6/26/2019

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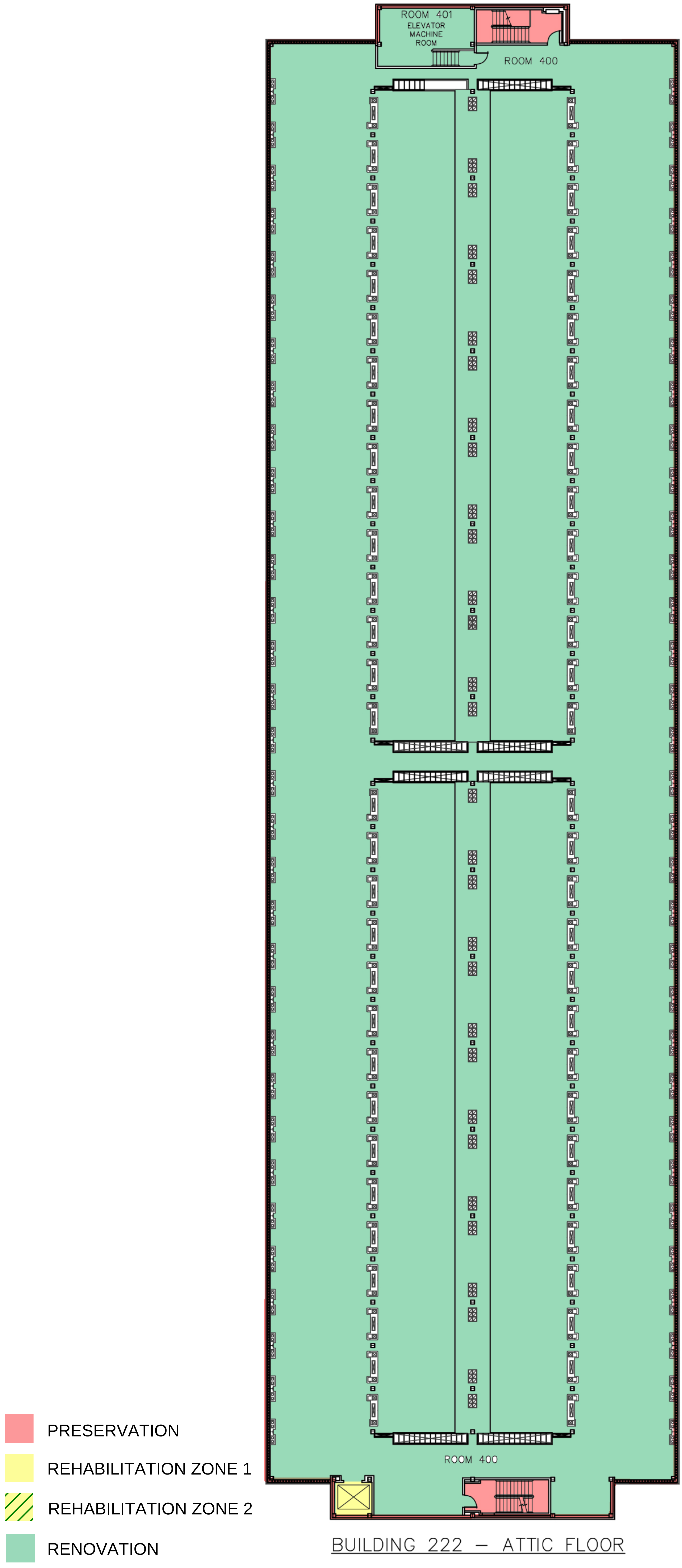
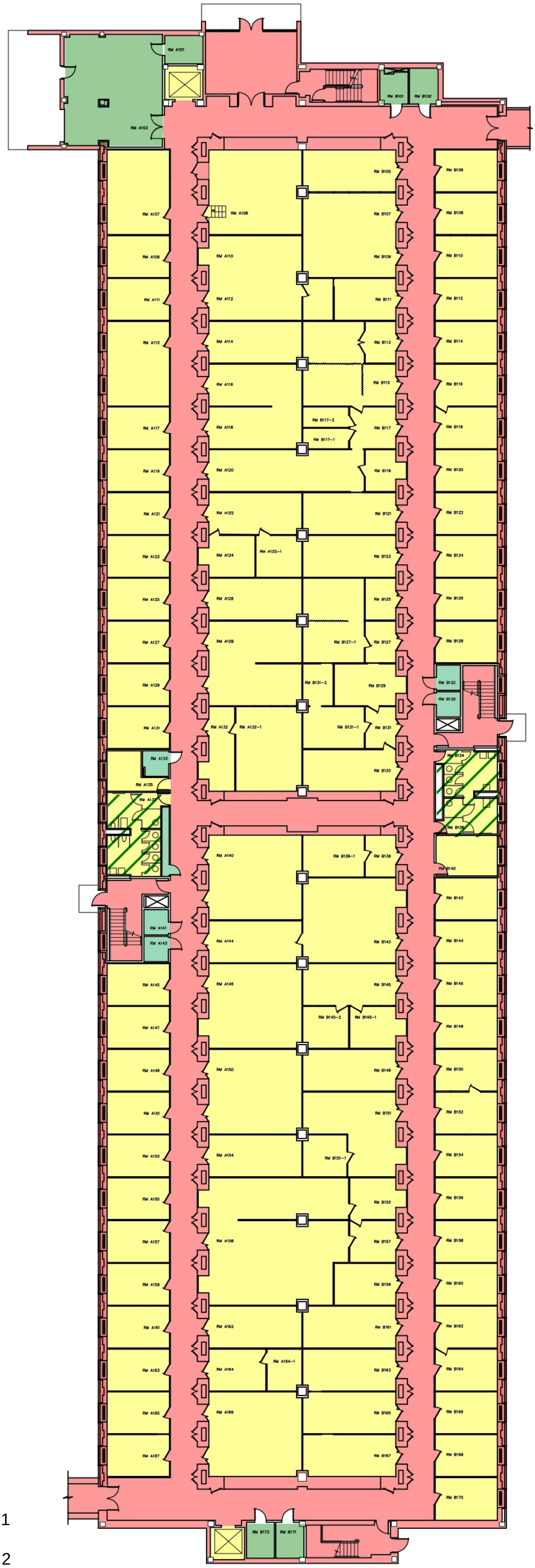


BUILDING 222 – ATTIC FLOOR

DATE OF LAST REVISION: 09–10–13



PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 223 – FIRST FLOOR

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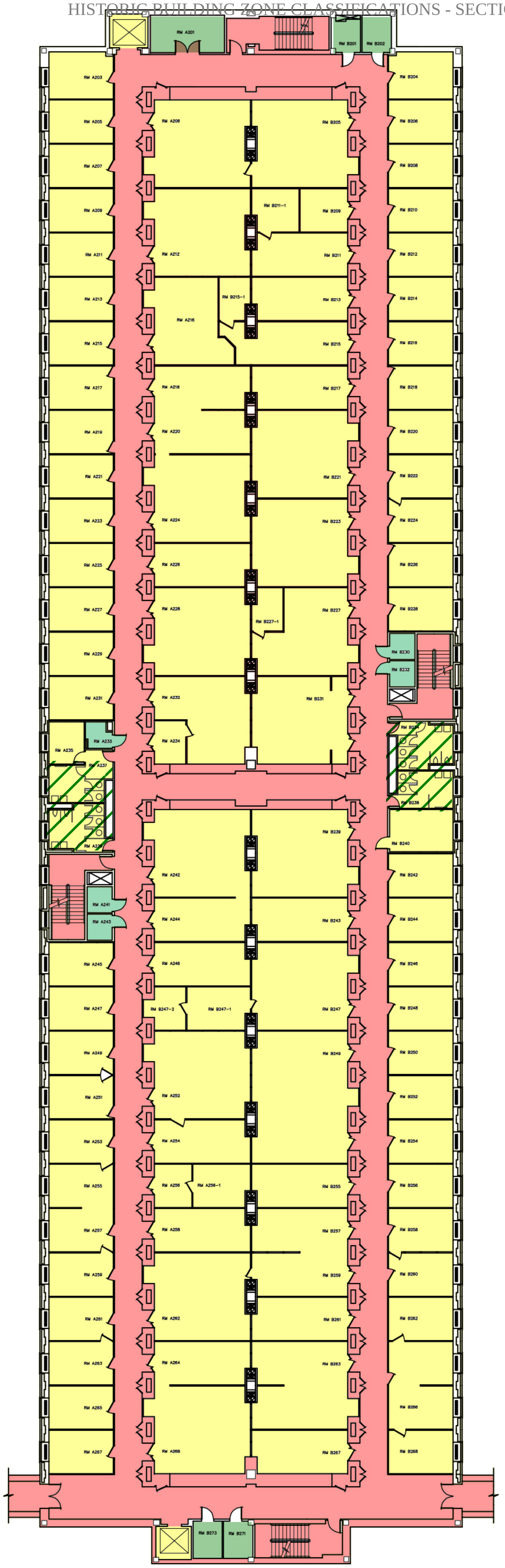

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 223 – SECOND FLOOR

DATE OF LAST REVISION: 10/05/2018

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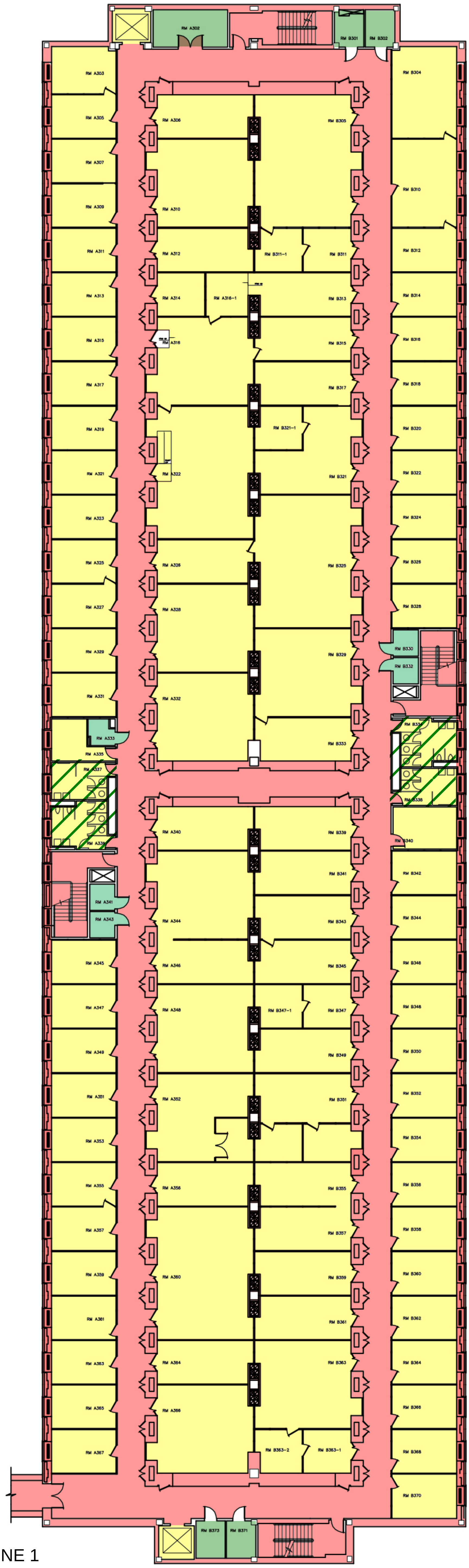

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 223 — THIRD FLOOR

DATE OF LAST REVISION: 3–26–2019

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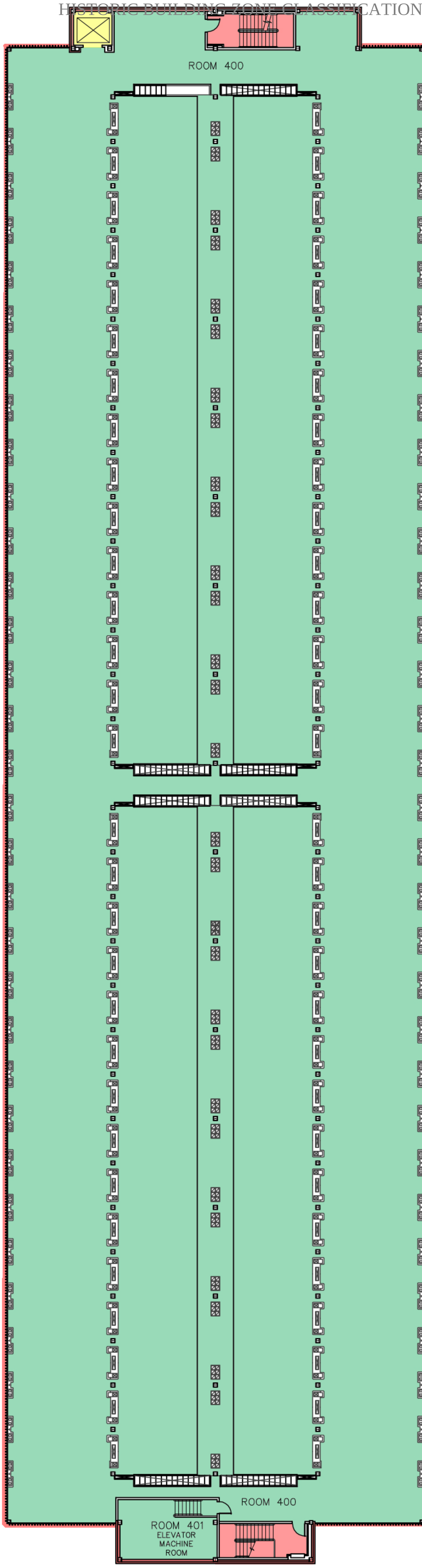

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 223 – ATTIC FLOOR

DATE OF LAST REVISION: 09–10–13

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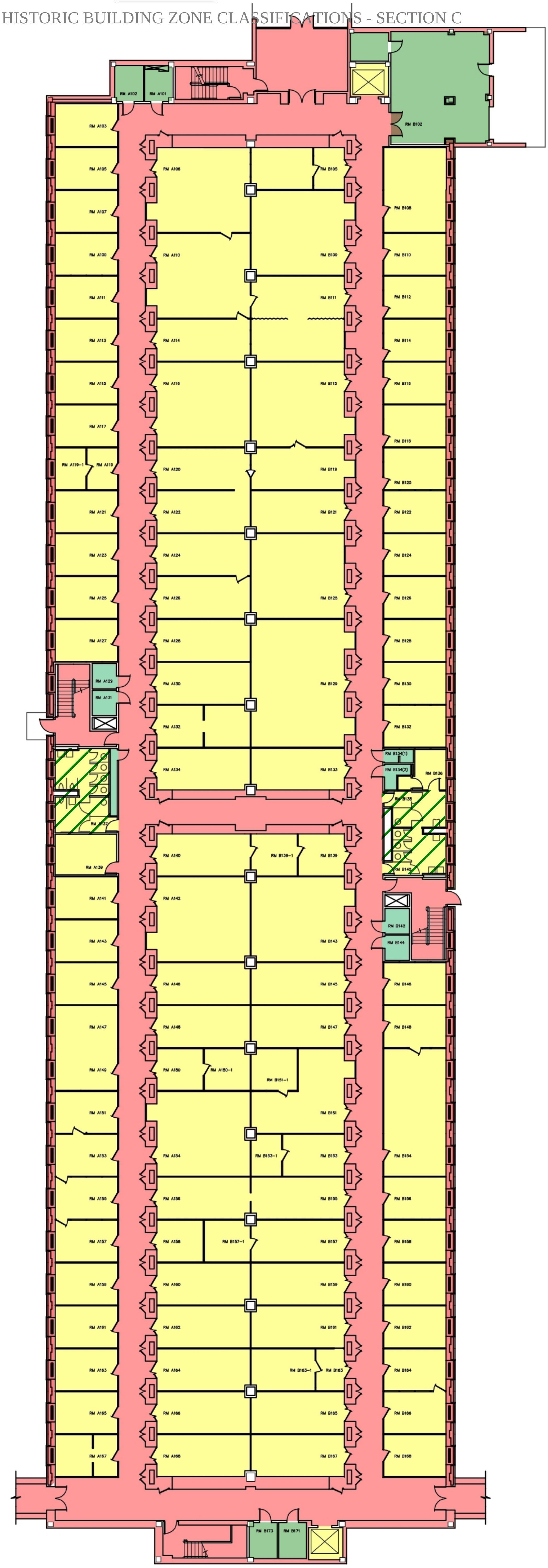

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 224 — FIRST FLOOR

DATE OF LAST REVISION: 4–13–2021

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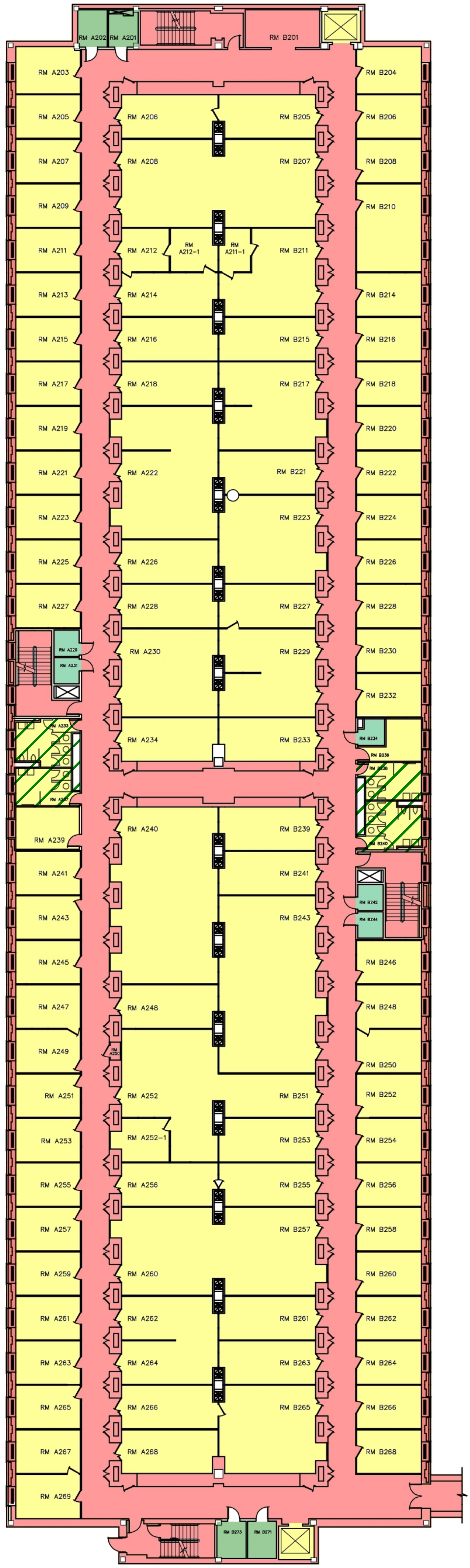

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 224 — SECOND FLOOR

DATE OF LAST REVISION: 2-3-2020

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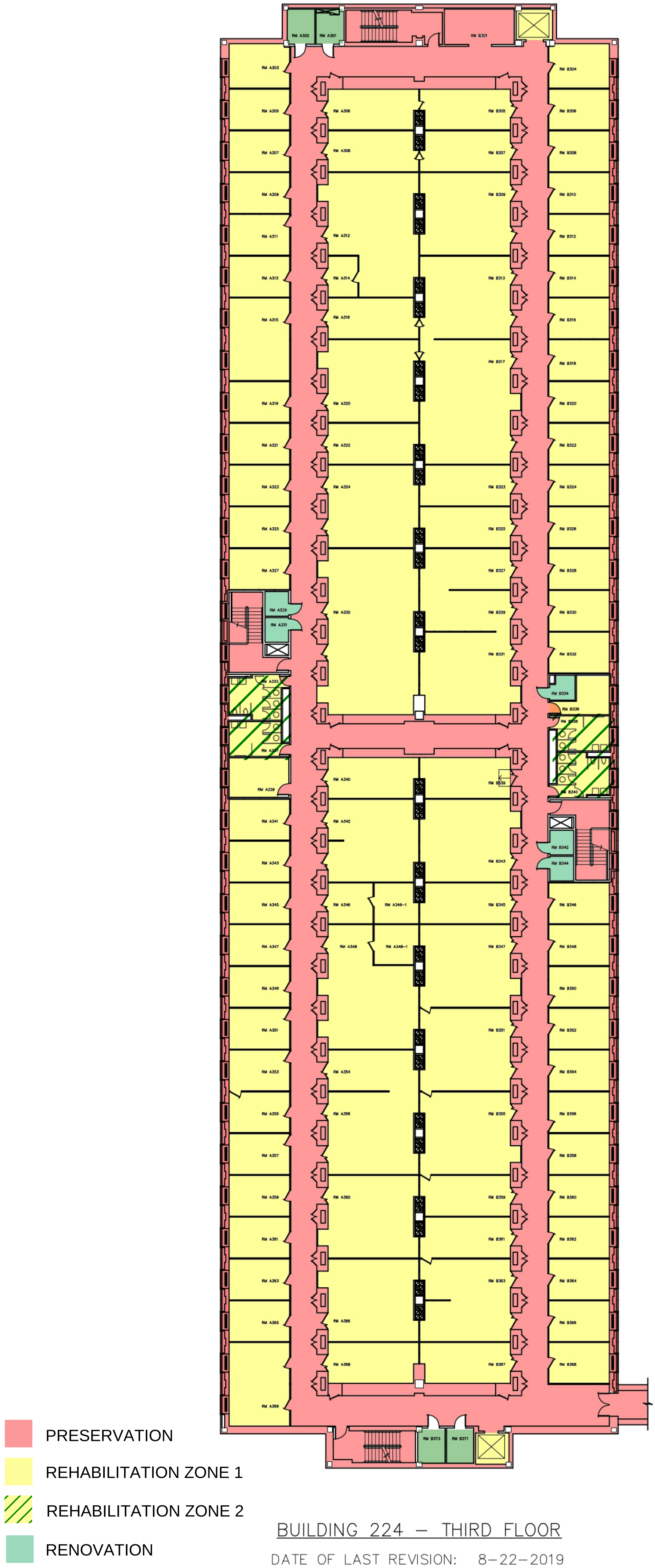

BUILDING 224 — THIRD FLOOR

DATE OF LAST REVISION: 8–22–2019

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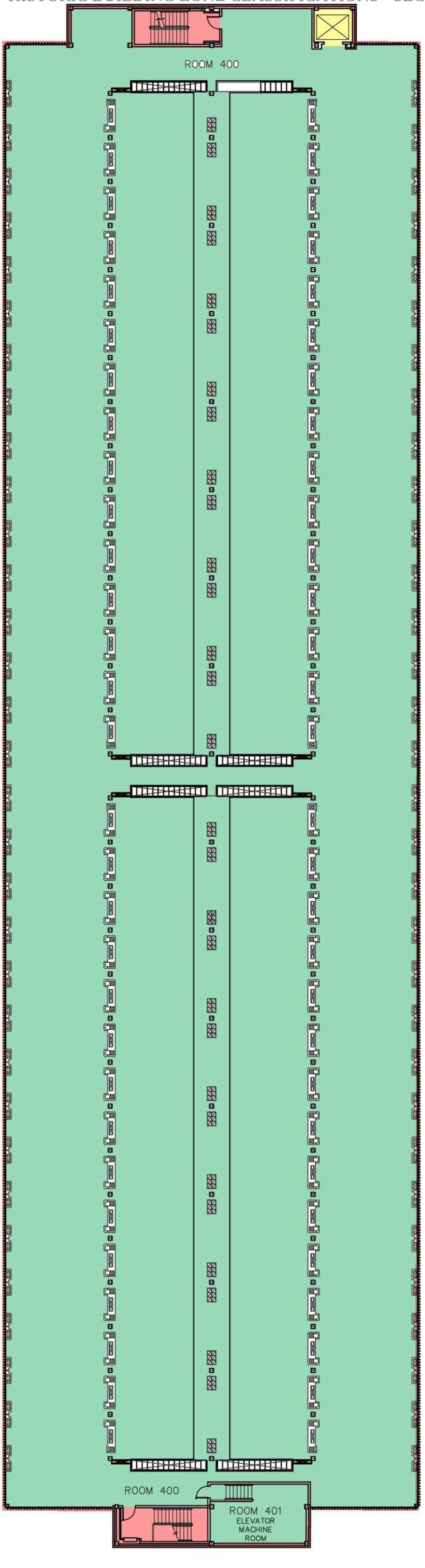

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 224 – ATTIC FLOOR

DATE OF LAST REVISION: 09–10–13

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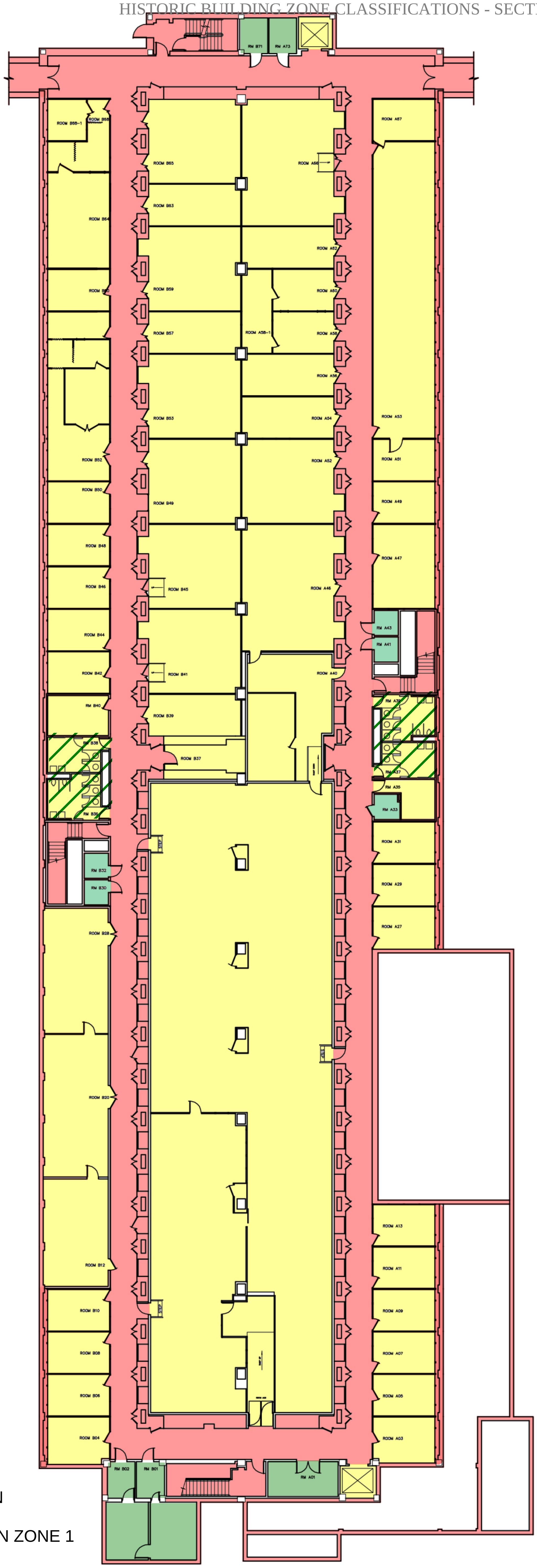

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 225 – BASEMENT

DAT OF LAST REVISION: 10/5/2018

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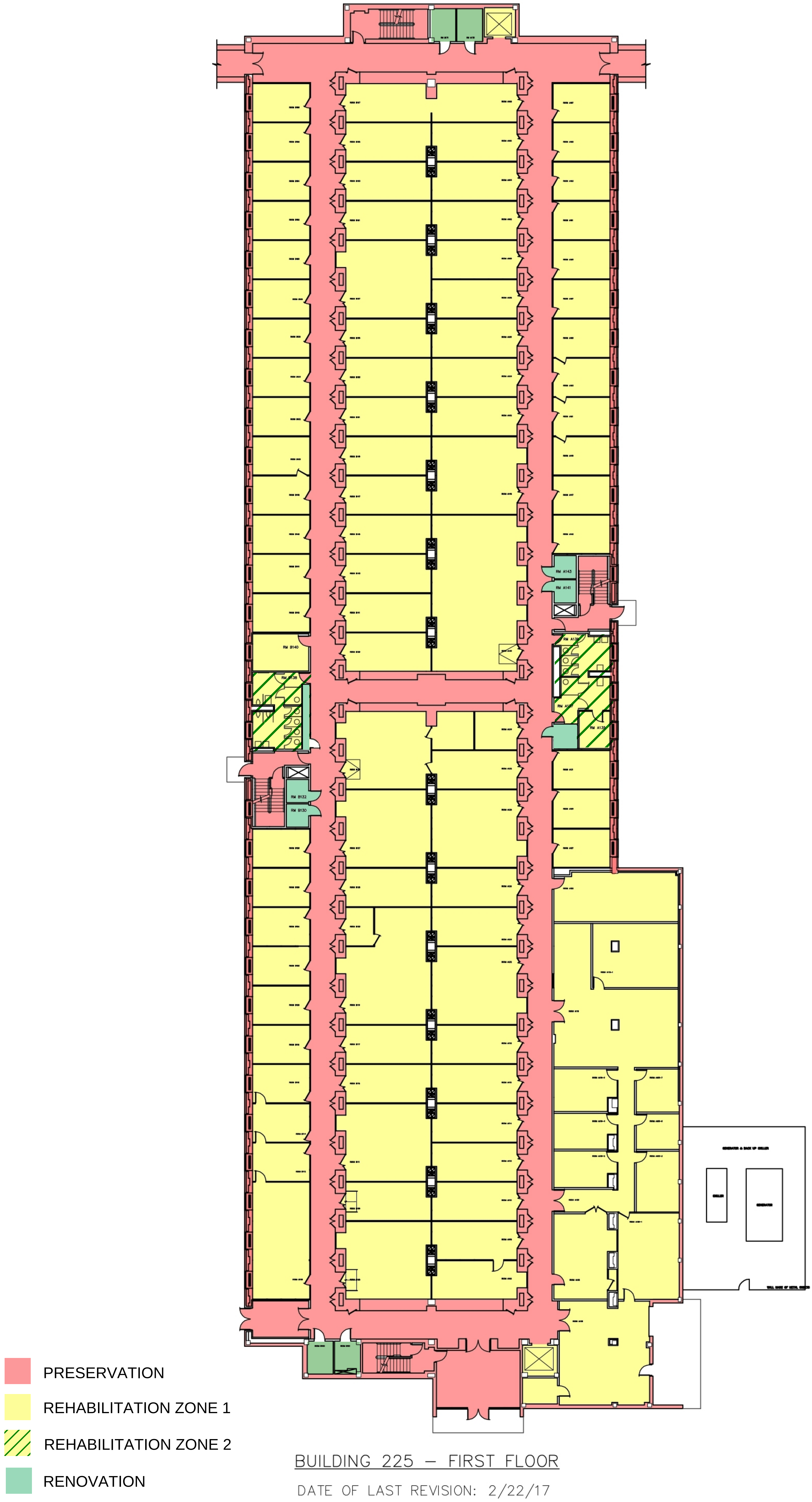
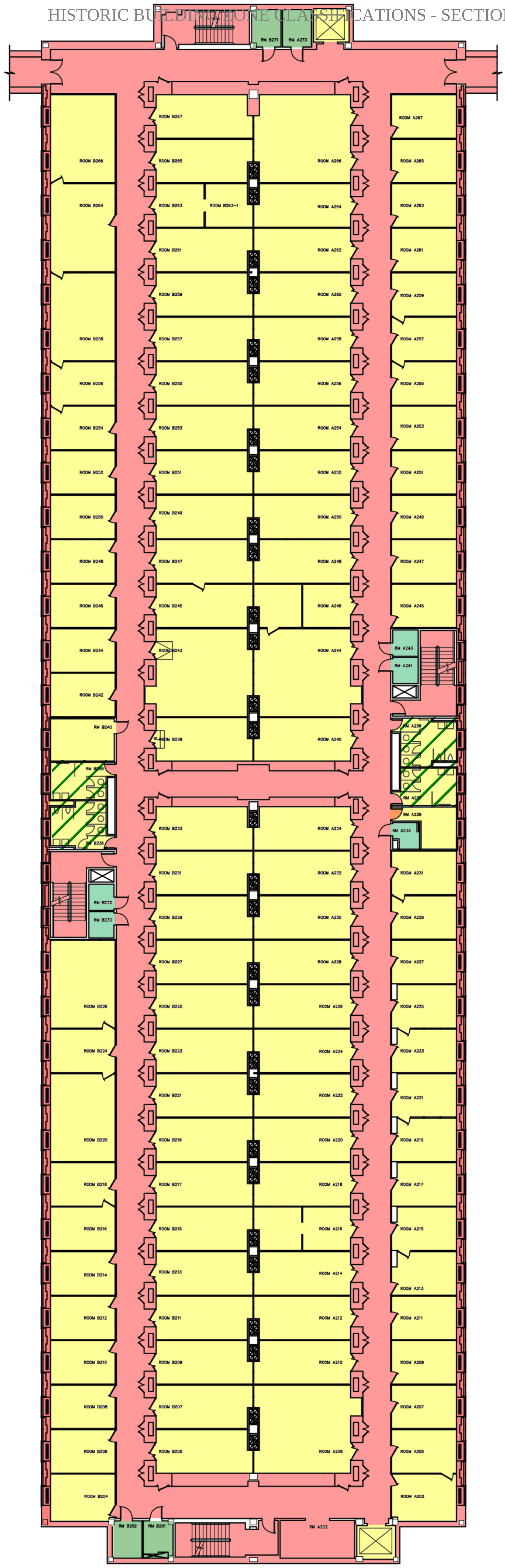


BUILDING 225 – FIRST FLOOR

DATE OF LAST REVISION: 2/22/17



PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 225 – SECOND FLOOR

DATE OF LAST REVISION: 10/01/2019

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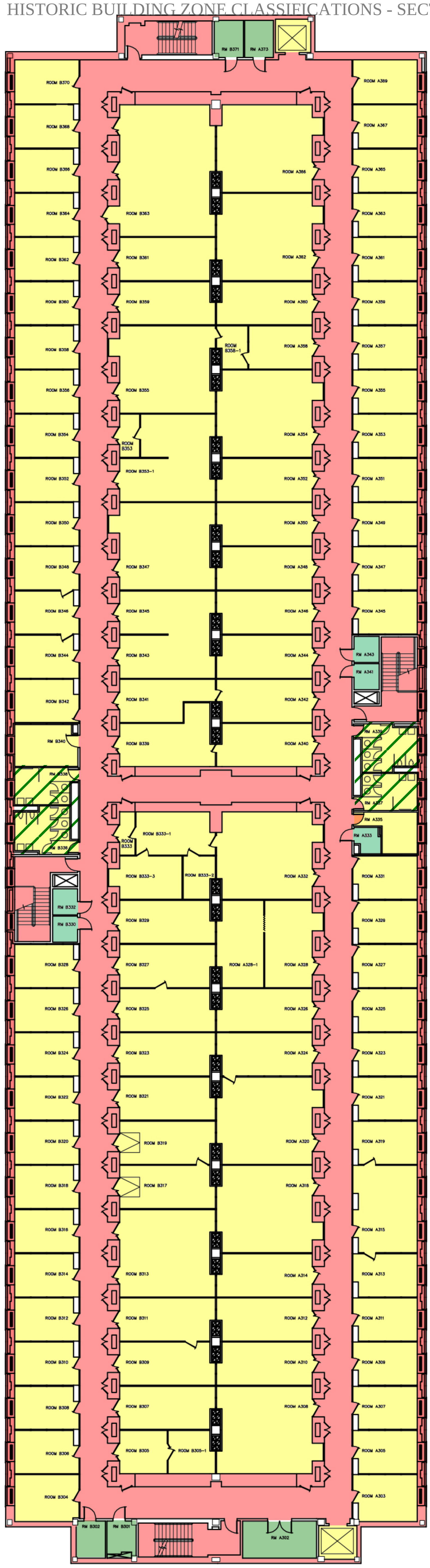

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 225 — THIRD FLOOR

DATE OF LAST REVISION: 2–3–2020

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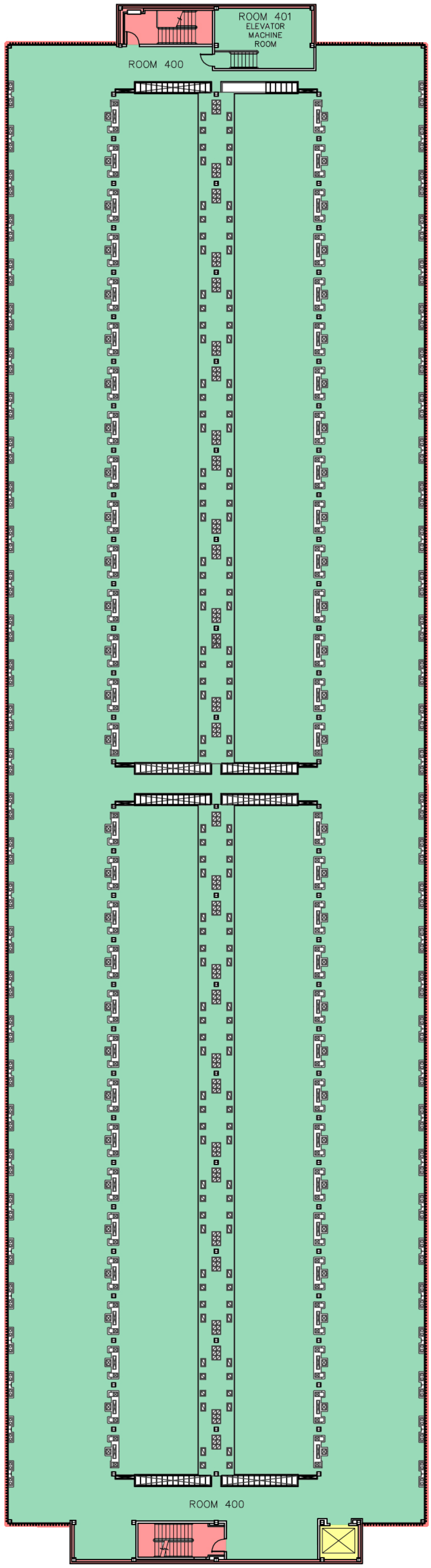

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 225 – ATTIC FLOOR

DATE OF LAST REVISION: 09–10–13

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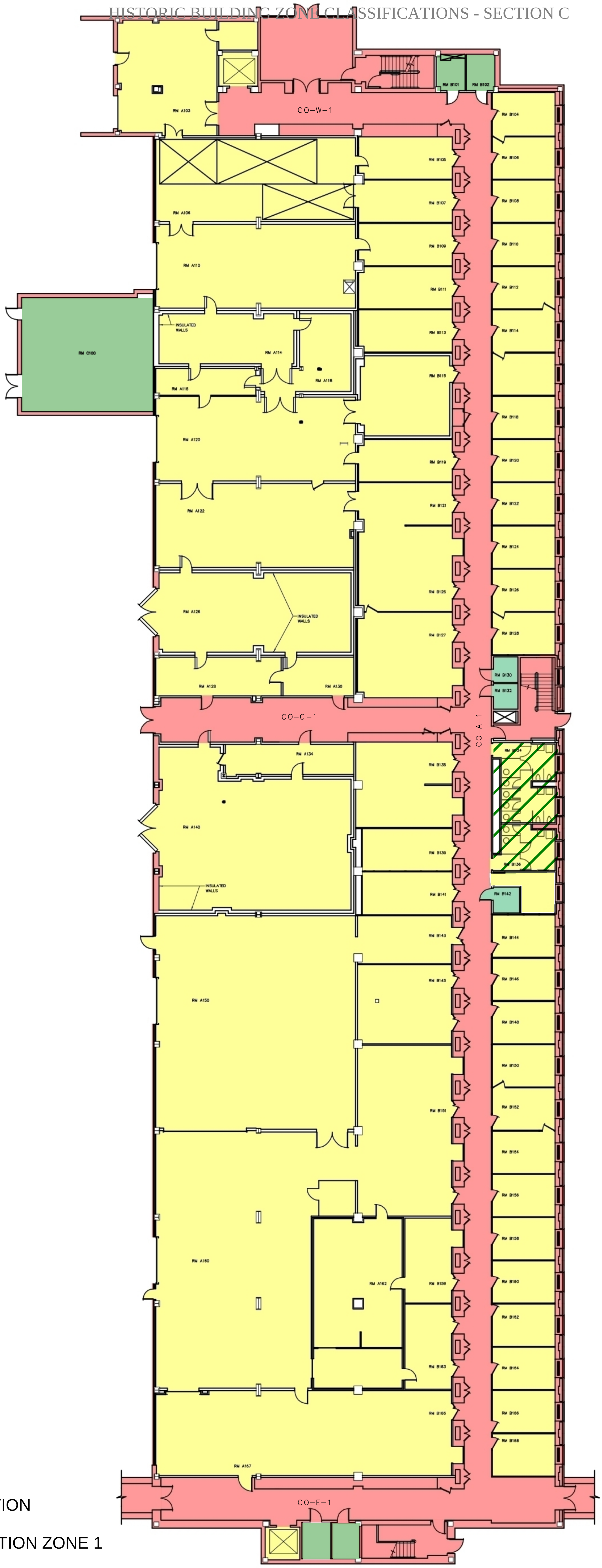

PRESERVATION
REHABILITATION ZONE 1
REHABILITATION ZONE 2
RENOVATION

BUILDING 226 – FIRST FLOOR

10/22/2017

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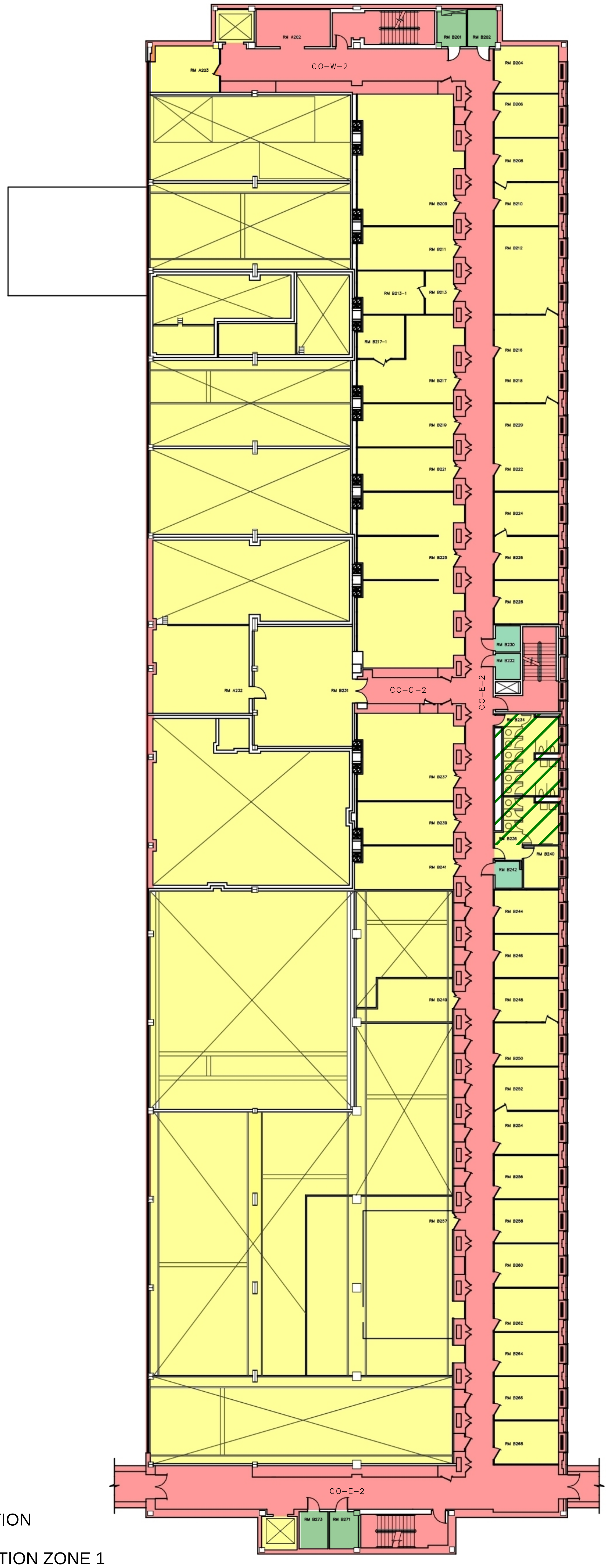

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 226 – BUILDING RESEARCH BUILDING
SECOND FLOOR

DATE OF LAST REVISION: 05-07-19

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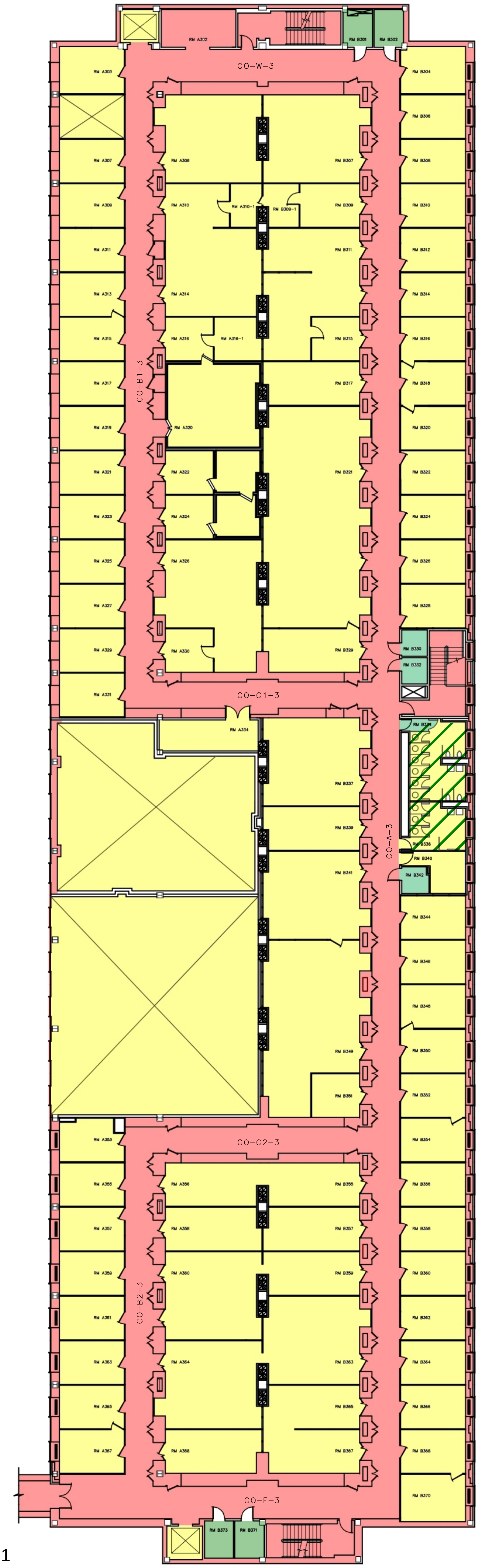

PRESERVATION

REHABILITATION ZONE 1

REHABILITATION ZONE 2

RENOVATION

BUILDING 226 – THIRD FLOOR

DATE OF LAST REVISION: 11-29-2017

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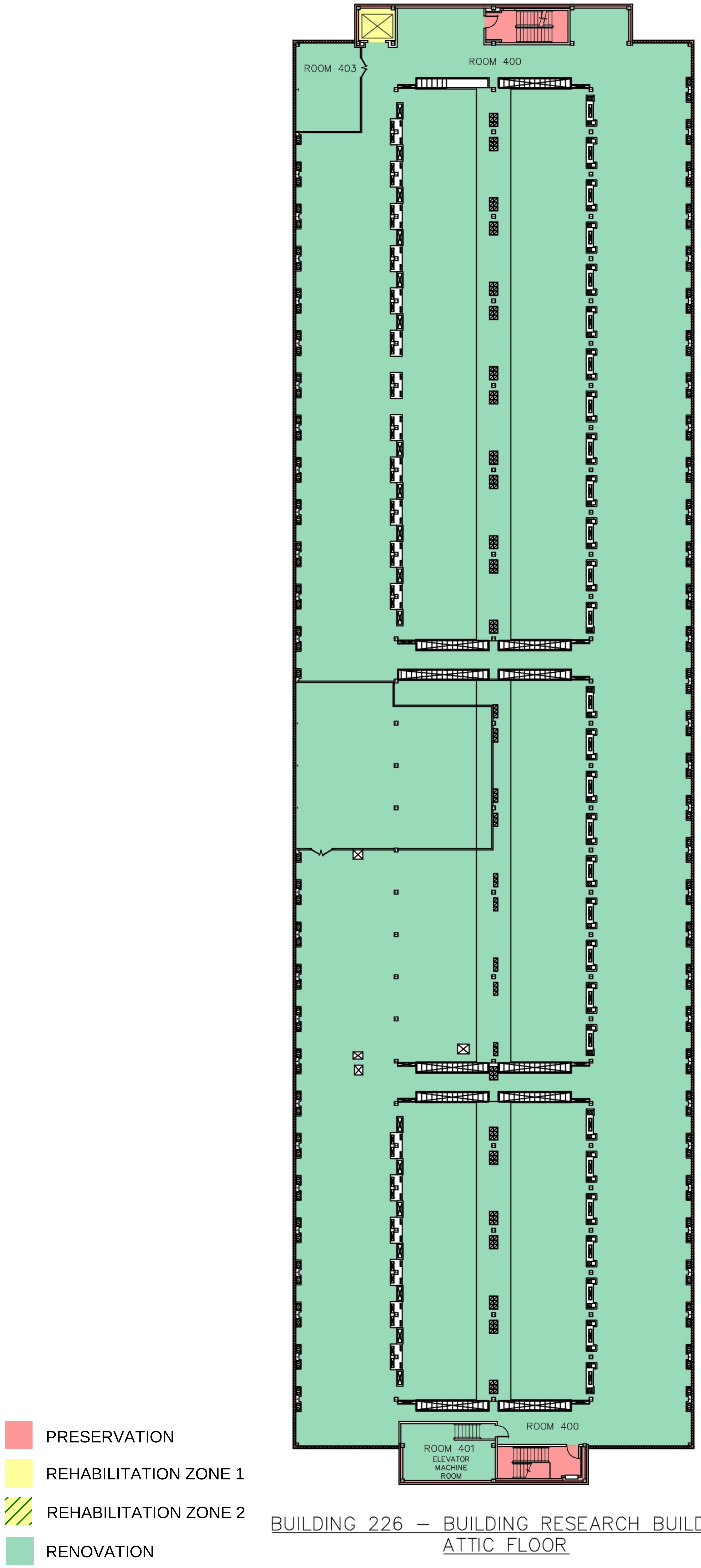

BUILDING 226 – BUILDING RESEARCH BUILDING
ATTIC FLOOR

DATE OF LAST REVISION: 06-01-95

INVENTORY METHODOLOGY

The Inventory of Significant Features and Materials for the National Institute of Standards and Technology's (NIST) seven General Purpose Laboratories (GPL) was completed by MTFA Architecture. In September 2021, the team began a comprehensive survey of interior and exterior spaces to establish the Restoration, Rehabilitation, and Renovations Zones for the building.

The project team noted and photographed contributing features, finishes, and possible alterations to the floor plan and features of each GPL. It is important to note that some historically significant features listed in the inventory may not be original to the building. For example, due to deterioration, these features may have replaced original fabric and match the original features in configuration, materials, and finish. A replicated item still represents a character-defining feature as it is intended to reflect the original design.

The following inventory is organized by historic building zone classification and then sorted within those zones by each GPL's exterior elevation followed by interior rooms in the building. The zone for each room or space is indicated at the top of the page by a color bar. The significant features in each room are listed in a table format, including general photographs of the room or space and any significant details or elements and sub-elements.

The inventory sheets for each room are organized in the following manner:

> **General Description**—This section provides a brief overview of the elevation or room providing location, general history and describing major alterations to each space.
>
> **Feature Description**—This section provides a listing of each contributing feature of the elevation or room. The features are then described in more detail with information about material, finish, and date and a corresponding photograph is presented in the right-hand column.

Room types that repeat throughout the building, such as corridors, stair halls, and offices, have inventory sheets that describe the typical features and finishes of these spaces along with any anomalies unique to only a portion of that room type. Where there were variations in any of the building's typical spaces, the inventory notes the anomaly with a photograph.

In addition to utilizing the research and information found in and associated with the existing Historic Structure Report, the project team conducted archival research to inform the building survey. The research was used to verify the team's findings in the field, to determine which elements represent original construction, and which elements are architecturally and historically significant. The following "research collection" can be found in the electronic files attached with this report. The documents have been organized by repository and then further organized by topic.

A list of repositories, consulted in conjunction with this project, follows.

> **NIST Research Library - Gaithersburg**
> Vertical File on Gaithersburg Campus
> Material Boards and Renderings for Interior Design
> Oral History
> Written History Documents
>
> **NIST Records Management - Gaithersburg**
> Photographs from the time of construction.

NIST Digital Archives
Textural records. Gaithersburg Campus Collection includes photographs, architectural renderings, technical publications, journal articles, and history publications.

NIST Facilities Drawings Database and Library - Gaithersburg
Relevant files include architectural drawings and specifications for the original construction and major maintenance

ROOM INDEX				
Room Number	Room Type	Building Number	Zone Type	Page Number Inventory
Exterior				
East Elevation	Façade	220	Preservation	C41
North Elevation	Façade	220	Preservation	C45
West Elevation	Façade	220	Preservation	C49
South Elevation	Façade	220	Preservation	C53
West Elevation	Façade	221	Preservation	C57
North Elevation	Façade	221	Preservation	C63
East Elevation	Façade	221	Preservation	C69
South Elevation	Façade	221	Preservation	C73
East Elevation	Façade	222	Preservation	C77
North Elevation	Façade	222	Preservation	C83
West Elevation	Façade	222	Preservation	C87
South Elevation	Façade	222	Preservation	C91
West Elevation	Façade	223	Preservation	C95
North Elevation	Façade	223	Preservation	C101
East Elevation	Façade	223	Preservation	C105
South Elevation	Façade	223	Preservation	C109
West Elevation	Façade	224	Preservation	C113
North Elevation	Façade	224	Preservation	C117
East Elevation	Façade	224	Preservation	C123
South Elevation	Façade	224	Preservation	C127
East Elevation	Façade	225	Preservation	C131
North Elevation	Façade	225	Preservation	C137
West Elevation	Façade	225	Preservation	C143
South Elevation	Façade	225	Preservation	C147
West Elevation	Façade	226	Preservation	C151
North Elevation	Façade	226	Preservation	C157
East Elevation	Façade	226	Preservation	C160
South Elevation	Façade	226	Preservation	C163
Lobbies				
LO-A-1	Lobby	220-226	Preservation	C169
Corridors & Concourses				
CO-A-1 -- CO-A-3	Corridor	220 / 221 / 223 / 224 / 225 / 226	Preservation	C175
CO-B-1 -- CO-B-3	Corridor	220 / 221 / 223 / 224 / 225	Preservation	C175
CO-C-1 -- CO-C-3	Corridor	220 / 221 / 223 / 224 / 225	Preservation	C175
CO-E-1 -- CO-E-3	Corridor	220 / 221 / 223 / 224 / 225 / 226	Preservation	C175
CO-W-1 -- CO-W-3	Corridor	220 / 221 / 223 / 224 / 225 / 226	Preservation	C175
CO-C-1 -- CO-C-2	Corridor	226	Preservation	C175
CO-C1-3 & CO-C2-3	Corridor	226	Preservation	C175
CO-B1-3 & CO-B2-3	Corridor	226	Preservation	C175
CO-A-1 -- CO-A-3	Special Corridor	222	Rehabilitation	C187
CO-B-1 -- CO-B-3	Special Corridor	222	Rehabilitation	C187
CO-C-1 -- CO-C-3	Special Corridor	222	Rehabilitation	C187
CO-E-1 -- CO-E-3	Special Corridor	222	Rehabilitation	C187
CO-W-1 -- CO-W-3	Special Corridor	222	Rehabilitation	C187
223-304	Corridor Tunnel	223 / 304	Rehabilitation	C193
101-223	Concourse	101 / 223	Preservation	C197
220-221	Concourse	220 / 221	Preservation	C197
221-222	Concourse	221 / 222	Preservation	C197
222-223	Concourse	222 / 223	Preservation	C197
223-304	Concourse	223 / 304	Preservation	C197
304-224	Concourse	304 / 224	Preservation	C197

ROOM INDEX				
Room Number	**Room Type**	**Building Number**	**Zone Type**	**Page Number Inventory**
224-225	Concourse	224 / 225	Preservation	C197
225-226	Concourse	225 / 226	Preservation	C197
Stair Halls				
ST-1-1 -- ST-1-3	Stair Hall	220-226	Preservation	C203
ST-2-1 -- ST-2-3	Stair Hall	220-226	Preservation	C203
ST-3-1 -- ST-3-3	Stair Hall	220-226	Preservation	C203
ST-4-1 -- ST-4-3	Stair Hall	220-226	Preservation	C203
Elevators				
EL-1-0 -- EL-1-3	Elevator	220-226	Rehabilitation	C207
EL-2-0 -- EL- 2-3	Elevator	220-226	Rehabilitation	C207
General Offices				
A303-A367* & B304-B370*	General Office	220	Rehabilitation	C211
A203-A267* & B204-B270*	General Office	220	Rehabilitation	C211
B104-B170* & A105-A167*	General Office	220	Rehabilitation	C211
A303-A367* & B304-B368*	General Office	221	Rehabilitation	C211
A203-A267* & B204-B268*	General Office	221	Rehabilitation	C211
B102-B168* & A103-A167*	General Office	221	Rehabilitation	C211
A03-A65* & B04-B68*	General Office	221	Rehabilitation	C211
A303-A367* & B304-B368*	General Office	222	Rehabilitation	C211
A203-A267* & B204-B268*	General Office	222	Rehabilitation	C211
B101-B102, A103-A167*, B106-B168*	General Office	222	Rehabilitation	C211
A303-A367* & B304-B370*	General Office	223	Rehabilitation	C211
A203-A267* & B204-B268*	General Office	223	Rehabilitation	C211
B106-B170* & A107-A167*	General Office	223	Rehabilitation	C211
A303-A359* & B304-B368*	General Office	224	Rehabilitation	C211
A203-A269* & B204-B268*	General Office	224	Rehabilitation	C211
A103-A167* & B108-B168*	General Office	224	Rehabilitation	C211
A303-A369* & B304-B370*	General Office	225	Rehabilitation	C211
A203-A267* & B204-B268*	General Office	225	Rehabilitation	C211
A03-A67* & B04-B68*	General Office	225	Rehabilitation	C211
B304-B370* & A303-A367*	General Office	226	Rehabilitation	C211
B204-B268* & A203	General Office	226	Rehabilitation	C211
B104-B168*	General Office	226	Rehabilitation	C211
Bathrooms				
B334-B338* & A337-A339*	Bathroom	220	Rehabilitation	C217
B236-B238* & A237-A239*	Bathroom	220	Rehabilitation	C217
B138-B140* & A137	Bathroom	220	Rehabilitation	C217
B34-B38* & A37-A39*	Bathroom	220	Rehabilitation	C217
A333-A337* & B338-B340*	Bathroom	221	Rehabilitation	C217
A233-A237* & B238-B240*	Bathroom	221	Rehabilitation	C217
138-B140* & A137	Bathroom	221	Rehabilitation	C217
A33-A37* & B38-B40*	Bathroom	221	Rehabilitation	C217
B338 & A333	Bathroom	222	Rehabilitation	C217
B238 & A235-A237*	Bathroom	222	Rehabilitation	C217
B334-B338* & A337-A339*	Bathroom	223	Rehabilitation	C217
B234-B238* & A237-A239*	Bathroom	223	Rehabilitation	C217
B134-B136* & A137	Bathroom	223	Rehabilitation	C217
B338-B340* & A337-A333*	Bathroom	224	Rehabilitation	C217
B238-B240* & A237-A233*	Bathroom	224	Rehabilitation	C217
B138-B140* & A137	Bathroom	224	Rehabilitation	C217
A337-A339* & B336-B338*	Bathroom	225	Rehabilitation	C217

ROOM INDEX				
				Page Number
Room Number	**Room Type**	**Building Number**	**Zone Type**	**Inventory**
A237-A239* & B236-B238*	Bathroom	225	Rehabilitation	C217
A37-A39* & B36-B38*	Bathroom	225	Rehabilitation	C217
B336 & B334	Bathroom	226	Rehabilitation	C217
B236 & B234	Bathroom	226	Rehabilitation	C217
B136 & B134	Bathroom	226	Rehabilitation	C217
B136	Dressing Room	220 / 221 / 224	Rehabilitation	C217
A235	Dressing Room	223	Rehabilitation	C217
(*) Numbers are listed in either even or odd pattern				

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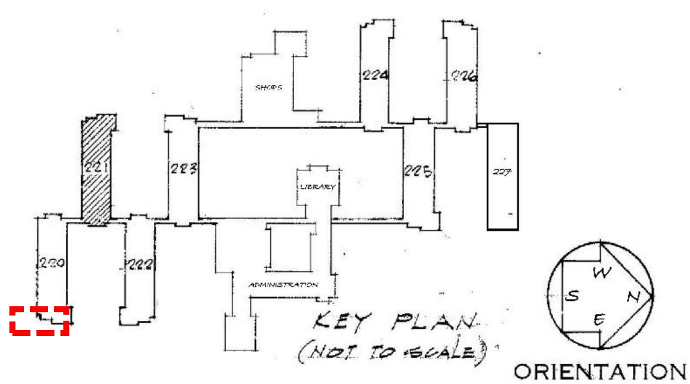
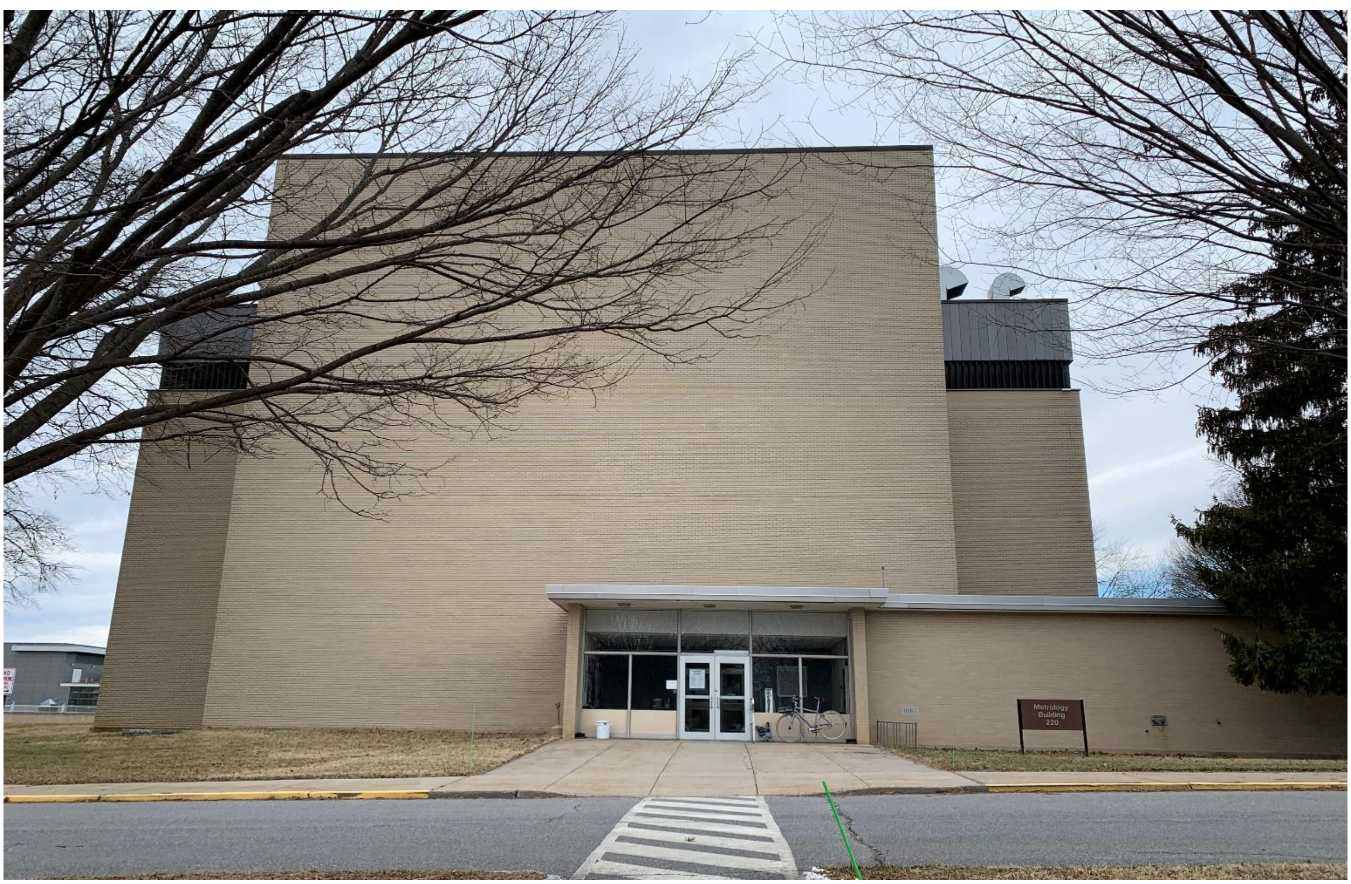
Building 220 – East Elevation

Building 220 is one of seven of the interconnected General Purpose Laboratories (GPL) and is located at the outer edge of the complex. The seven GPLs form the main core of the National Instituite of Standarads and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The east elevation is the principal elevation of Building 220, the Metrology Building at NIST. The main formal entrance is located on this elevation with a wide canopy, an aluminum fascia, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the three-story brick façade besides the main entrance on the first floor. Instead, the architectural interest is expressed in the projecting and recessed forms reflecting the interior function. The laboratory core is pushed forward in the center while the supporting corridors and offices are recessed to the left and right. The one-story entrance projects from the main body of the building and wraps around to indicate the service entrance on the north façade.

Location Plan (NTS)





Building 220 – East Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

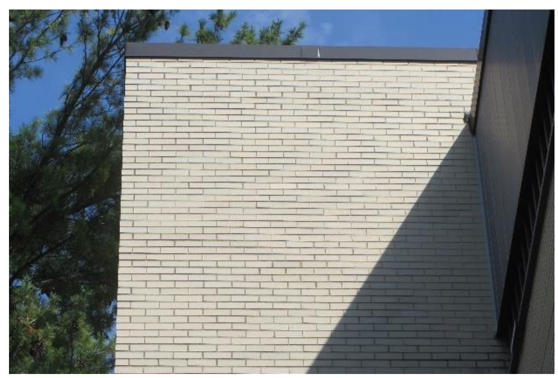
The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½”-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building’s overall feeling of horizontality.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the east exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa’s proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 220. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.



Building 220 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.				
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963	
Base/Platform	Granite	Shot Ground	1963	
Canopy	Concrete- Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963	
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
This storefront is found only on the east elevation of Building 220 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building’s design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.				
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963	
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
Hardware	Aluminum	Satin Finish	1963	
These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.				

Building 220 – East Elevation

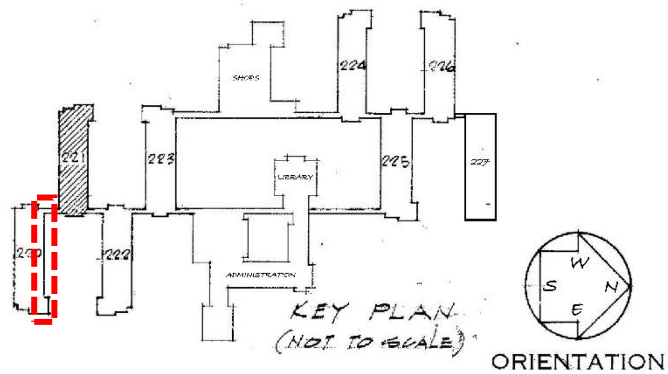
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.				
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963	
An original fire department connection standpipe, known as a “Siamese connection,” is found on the one-story portion of the west elevation.				
Date Stone	Granite	Shot Ground	1963	
An original, granite date stone is located to the north of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”				

Building 220 – North Elevation

The north elevation of Building 220 is a secondary facade and faces the concourse at Building 221’s east elevation and the south elevation of Building 222. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. At the east end of the elevation is a one-story storage room and loading dock. A secondary exterior entrance indicates the internal stair hall located toward the building’s midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 220 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

The ceiling of the loading dock at the east end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete. The mechanical level features Duranodic aluminum coping, likely installed during roof repairs ca. 2013, over the orginal limestone coping.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.

Building 220 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Concrete Platform	Concrete	Rubbed Smooth	1963
Curb	Steel	Smooth	1963

Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.

FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

FEATURE	MATERIAL	FINISH	DATE
Frame	Steel	Painted	1963

A singular door of this type is found at the west end of the north elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.

Building 220 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963

On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

FEATURE	MATERIAL	FINISH	DATE
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963

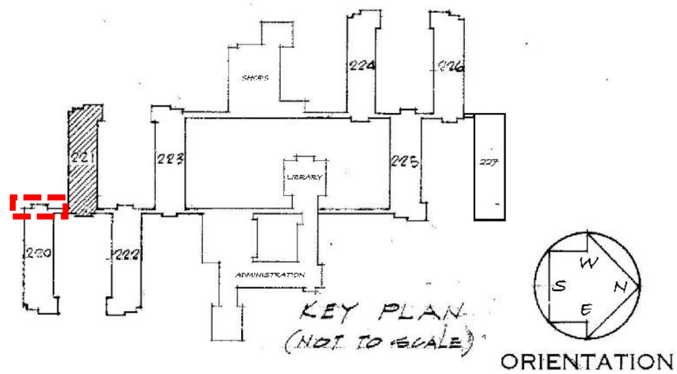
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.

Building 220 – West Elevation

The west elevation is secondary facade of Building 220 and directly abuts the concourse to Building 221. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

There are no original 1963 doors on the west elevation of Building 220.

Location Plan (NTS)



Building 220 – West Elevation

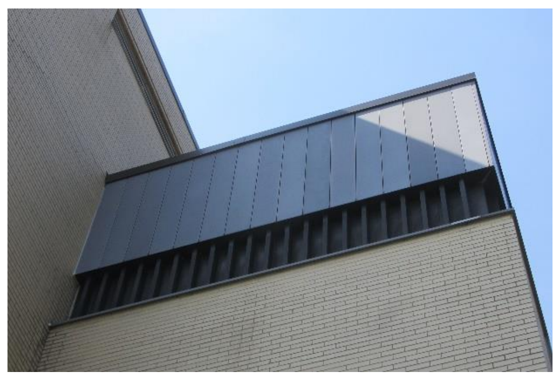
FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Banding	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

PHOTO

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless west elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible in select areas of the GPLs, such as the roof of Building 226, and likely exists below the aluminum coping of Building 220. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963



The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa’s duranodic medium black finish.

Building 220 – West Elevation

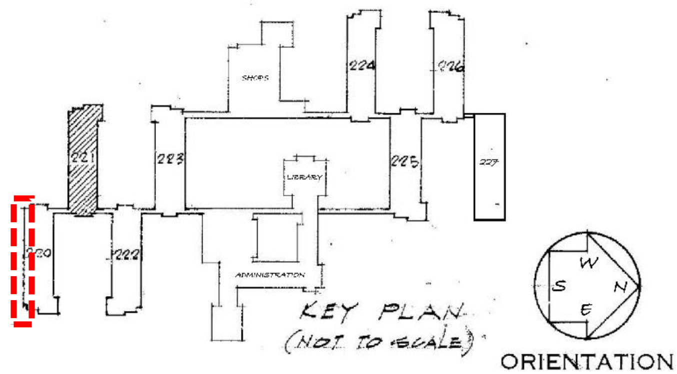
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Entrance Platform	Granite	Shot Ground	1963	
A singular entrance platform of this type is located at south end of the elevation and leads from the end stair hall to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.				
Door Frame	Pressed Steel	Polished	1963	
An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.				
Light – Surface Mounted	Aluminum/Glass	Anodized-Painted Finish/ Opaque	1963	
A surface-mounted light fixture is located above the entry door of the west elevation.				
Fire Department Connection Standpipe	Stainless Steel	Polished	1963	
An original fire department connection standpipe is located on the south end of the east elevation.				

Building 220 – South Elevation

The south elevation of Building 220 is a secondary facade and faces the Center for Nanoscale Science and Technology 216 buildings. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)

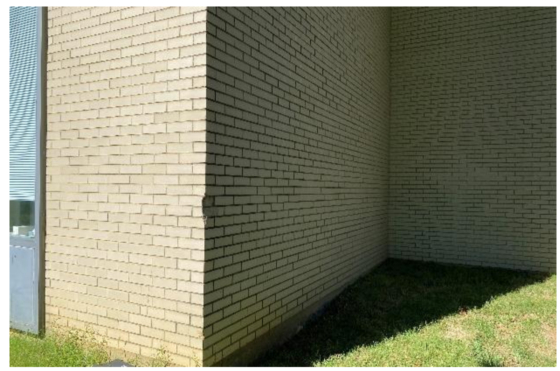


Building 220 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

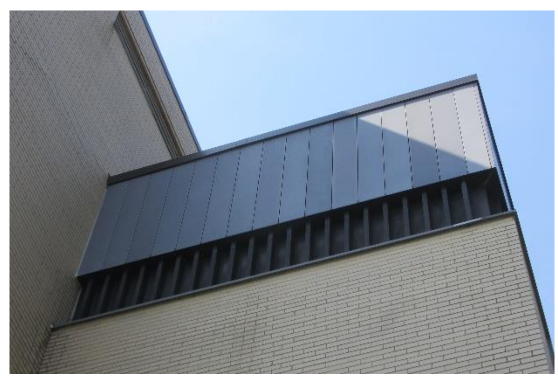
The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

PHOTO



FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.



FEATURE	MATERIAL	FINISH	DATE
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963

On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

Building 220 – South Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	

An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.

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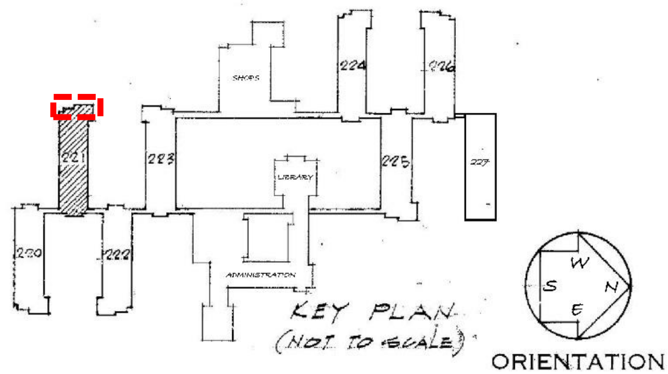
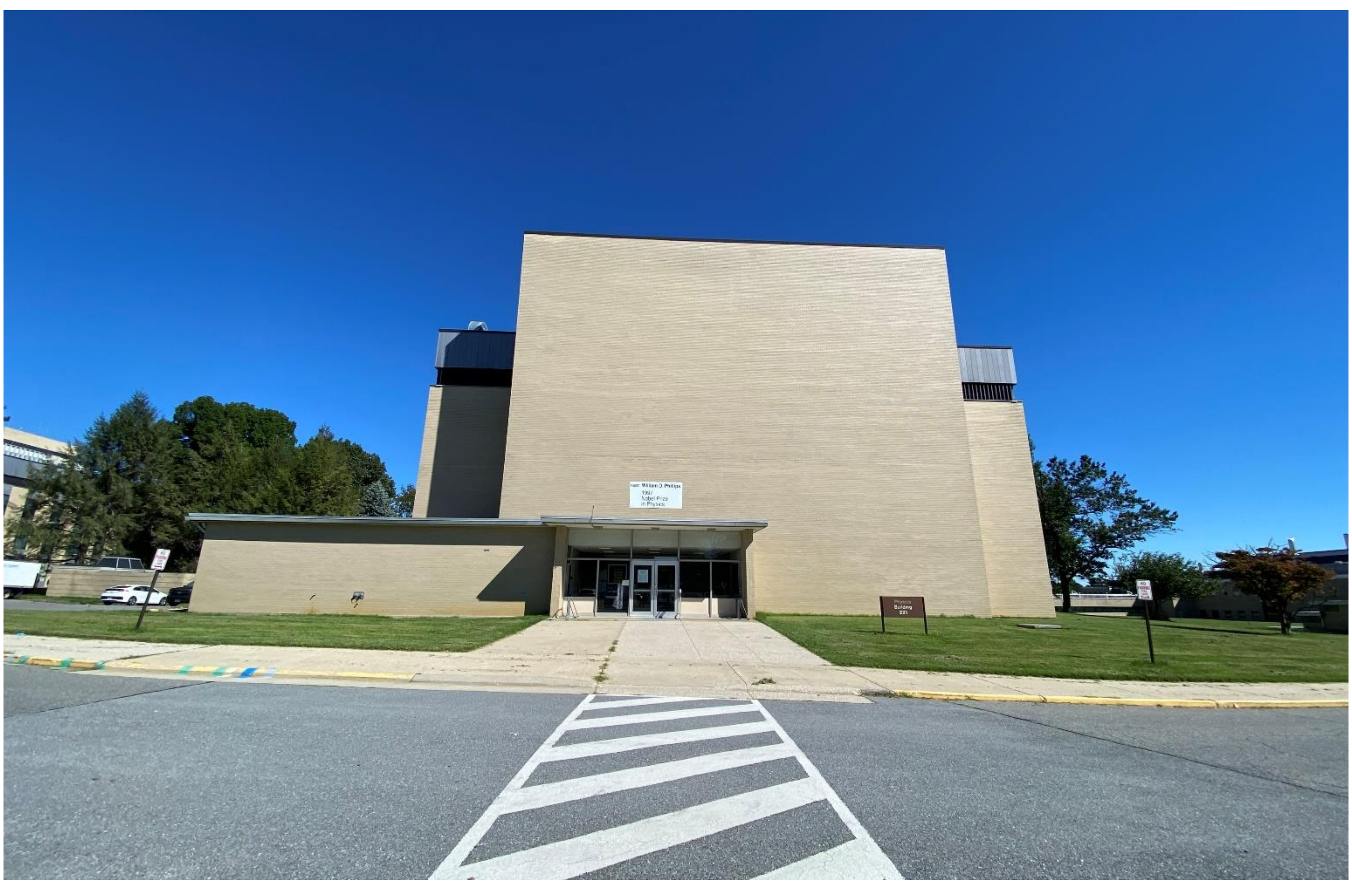
Building 221 – West Elevation

Building 221 is one of seven of the interconnected General Purpose Laboratories (GPL) and is located at the outer edge of the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The west elevation is the principal facade of Building 221, the Physics Building, at NIST. The main formal entrance is located on this elevation with a wide canopy, an aluminum fascia, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick façade besides the main entrance on the first floor. Instead, the architectural interest is expressed in the projecting and recessed forms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the main body of the building and wraps around to indicate the service entrance on the north façade. This horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)





Building 221 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963, Unknown

The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½"-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building's overall feeling of horizontality.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa's proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 221. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

Building 221 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

PHOTO

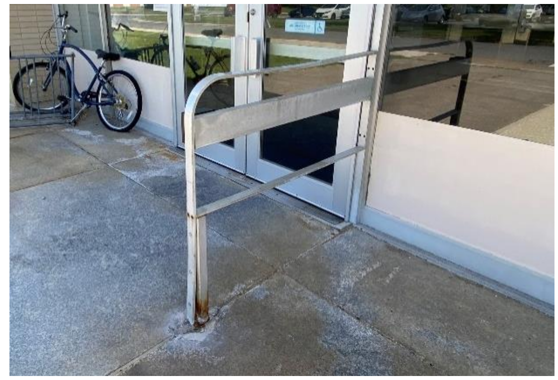
FEATURE	MATERIAL	FINISH	DATE
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Base/Platform	Granite	Shot Ground	1963
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963

This storefront is found only on the west elevation of Building 221 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building's design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963
Hardware	Aluminum	Satin Finish	1963

These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.

Building 221 – West Elevation

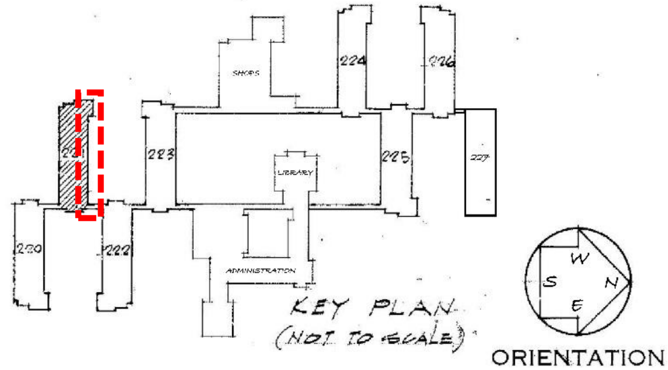
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.				
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963	
An original fire department connection standpipe, known as a “Siamese connection,” is found on the one-story portion of the west elevation.				
Date Stone	Granite	Shot Ground	1963	
An original, granite date stone is located to the north of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”				

Building 221 – North Elevation

The north elevation of Building 221 is a secondary facade and faces the concourse at Building 223's south elevation. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. At the west end of the elevation is a one-story storage room and loading dock. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 221 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963	

The ceiling of the loading dock at the west end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963	
Coping	Aluminum	Duranodic Medium Black	ca. 2013	
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
Wall	Brick	Gray PBS No. 36.797	1963	
Base	Concrete	Cement Stucco	1963	

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.

Building 221 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Concrete Platform	Concrete	Rubbed Smooth	1963
Curb	Steel	Smooth	1963

Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.

FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

FEATURE	MATERIAL	FINISH	DATE
Frame	Steel	Painted	1963

A singular door of this type is found at the west end of the north elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.

Building 221 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	

On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

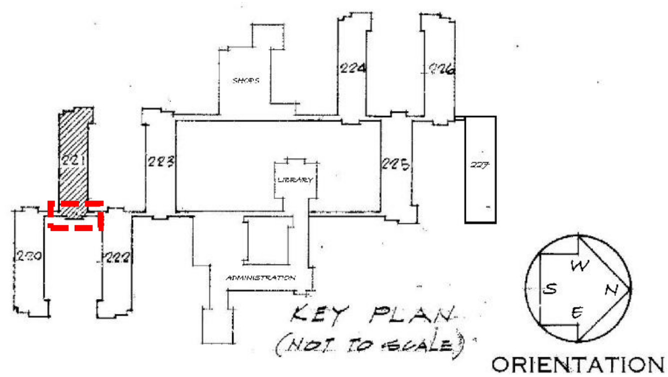
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	

An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.

Building 221 – East Elevation

The east elevation is a secondary facade of Building 221 and directly abuts the concourses to Buildings 220 and 222. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

Location Plan (NTS)



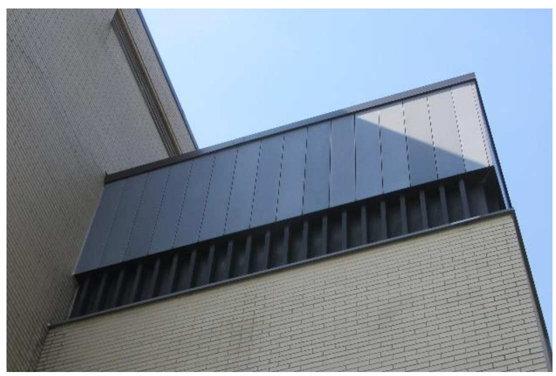
Building 221 – East Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Banding	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless east elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible in select areas of the GPLs, such as the roof of Building 226, and likely exists below the aluminum coping of Building 221. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963



The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa's duranodic medium black finish.

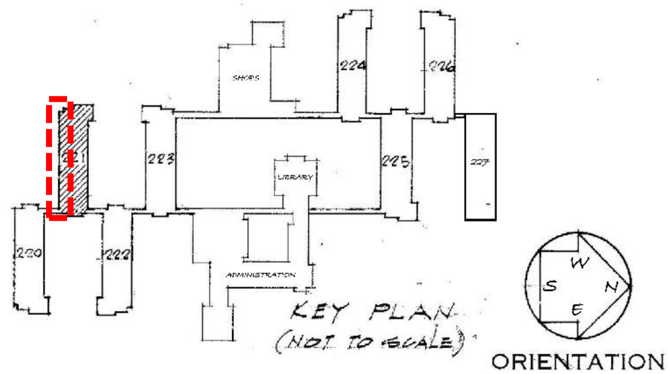
FEATURE	MATERIAL	FINISH	DATE
Fire Department Connection Standpipe	Stainless Steel	Polished	1963

An original fire department connection standpipe is located on the south end of the east elevation.

Building 221 – South Elevation

The south elevation of Building 221 is a secondary facade and faces the concourse between the General Purpose Laboratories (GPL) and Advanced Measurement Laboratory (AML) 217's north elevation. The south elevation features a large expanse with regularly alternating glazed beige brick and plate glass windows with insulated aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of louvered panels and aluminum cladding. A secondary entrance at the building's midpoint indicatesthe location of the interior stair hall.

Location Plan (NTS)



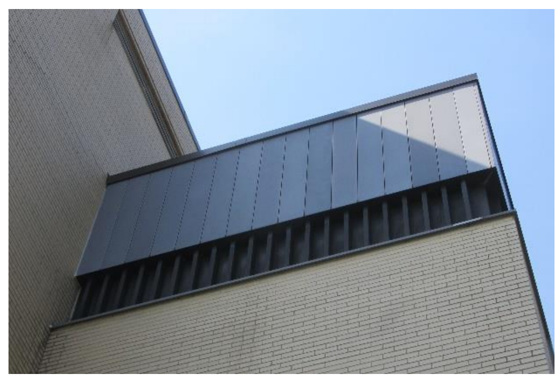
Building 221 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Parging	1963

The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.



FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the south elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

Building 221 – South Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Single-Leaf	Hollow Metal	Painted	1963	
Frame	Pressed Steel	Painted	1963	
Hardware	Aluminum	Satin Finish	1963	

One door of this type is found at the midpoint of the south elevation, leading from the internal stair to the exterior of the buildng. The door frame is painted pressed steel with a painted hollow metal door. Original hardware includes a dead bolt and lever handle. Many of the these original door assemblies have been replaced but this one remains intact. Note the color and simplicity is meant to continue the visual appearance of the curtain wall.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Window – Fixed	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Film	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	

On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Alumium – Type 1	Anodized Natural Fine Finish	1963	

An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the south elevation of the mechanical penthouse.

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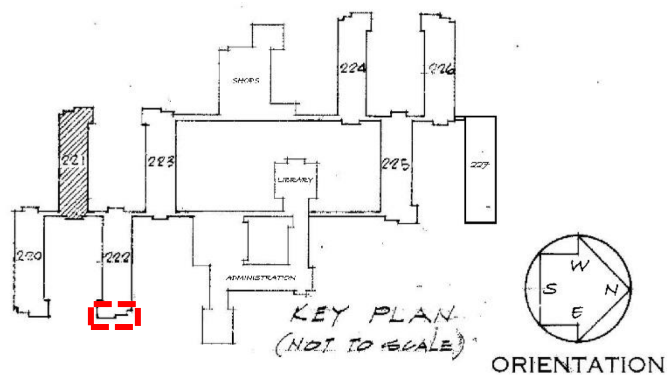
Building 222 – East Elevation

Building 222 is one of seven of the interconnected General Puspose Laboratoies (GPL) and is located at the outer edge fo the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The east elevation is the principal facade of Building 222, the Chemistry Building at NIST. The main formal entrance is located on this elevation with a wide canopy, aluminium fascia, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick facade besides the main entrance on the first floor. Instead, architectural interest is expressed in projecting and recesed foerms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the ain body fo the building and wraps around to indicate the service entrance on the south facade. The horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)



Building 222 – East Elevation

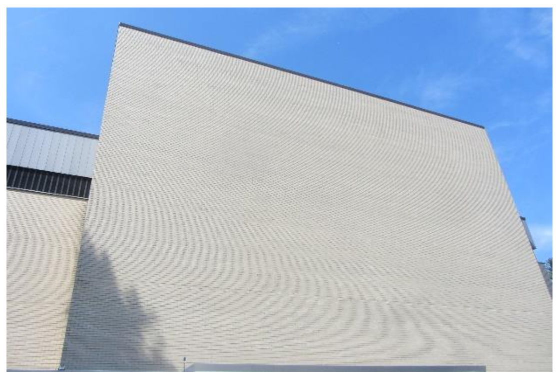
FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½"-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building's overall feeling of horizontality.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2004-2005
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa's proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 222. The original coping was most likely covered by the modern aluminum ca. 2004-2005 when roof repairs occurred.



Building 222 – East Elevation

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

PHOTO

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Base/Platform	Granite	Shot Ground	1963
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963

This storefront is found only on the east elevation of Building 222 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building’s design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

Building 222 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963	
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
Hardware	Aluminum	Satin Finish	1963	
These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.				
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.				
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963	
An original fire department connection standpipe, known as a "Siamese connection," is found on the one-story portion of the west elevation.				

Building 222 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Date Stone	Granite	Shot Ground	1963	

An original, granite date stone is located to the north of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”

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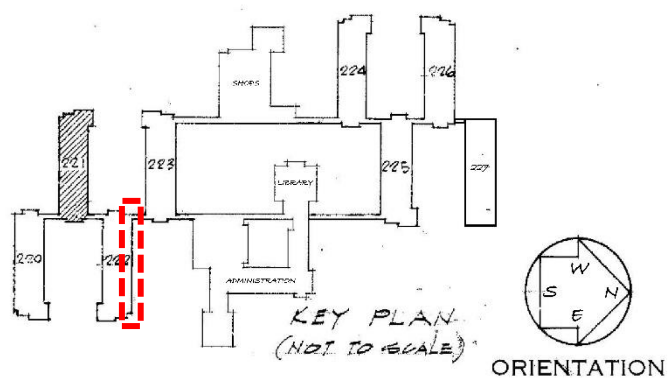
Building 222 – North Elevation

The north elevation of Building 222 is a secondary facade and faces the concourse at Building 223's east elevation. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones. Between 1998 and 2002, insulation was installed and portions of the window assemblies were replaced in kind. It remains unclear if the entire window assembly or specific elements were replaced at that time.

Location Plan (NTS)



Building 223 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2004-2005
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

PHOTO

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.

Building 223 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Entrance Platform	Granite	Shot Ground	1963	
A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.				
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	
On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.				

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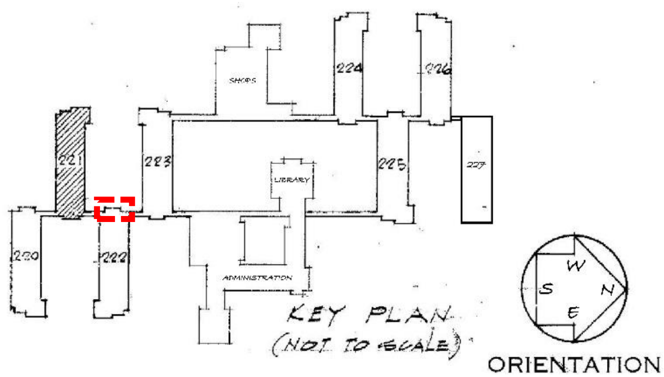
Building 222 – West Elevation

The west elevation is a secondary facade of Building 222 and directly abuts the concourses to Buildings 221 and 223. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

There are no original 1963 doors on the west elevation of Building 222.

Location Plan (NTS)



Building 222 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Banding	Aluminum	Duranodic Medium Black	ca. 2004-2005
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

PHOTO

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless west elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible in select areas of the GPLs, such as the roof of Building 226, and likely exists below the aluminum coping of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa's duranodic medium black finish.

Building 222 – West Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door Frame	Pressed Steel	Polished	1963	
An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.				
Light – Surface Mounted	Aluminum/Glass	Anodized-Painted Finish/ Opaque	1963	
A surface-mounted light fixture is located above the entry door of the west elevation.				
Fire Department Connection Standpipe	Stainless Steel	Polished	1963	
An original fire department connection standpipe is located on the south end of the east elevation.				

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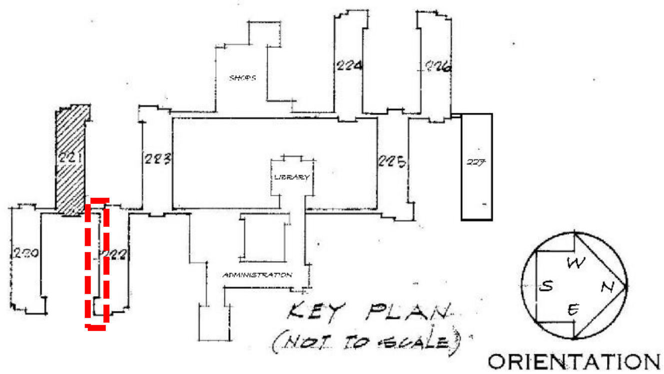
Building 222 – South Elevation

The south elevation of Building 222 is a secondary facade and directly abuts the concourse to Building 221. The south elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. At the east end of the elevation is a one-story storage room and loading dock. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the south elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 222 – South Elevation

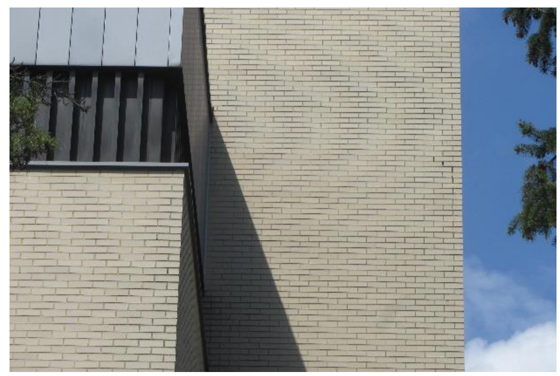
FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

The ceiling of the loading dock at the east end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	Ca. 2004-2005
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.



Building 222 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Concrete Platform	Concrete	Rubbed Smooth	1963
Curb	Steel	Satin	1963

Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.

FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the south elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

FEATURE	MATERIAL	FINISH	DATE
Frame	Steel	Painted	1963

A singular door of this type is found at the west end of the south elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.

Building 222 – South Elevation

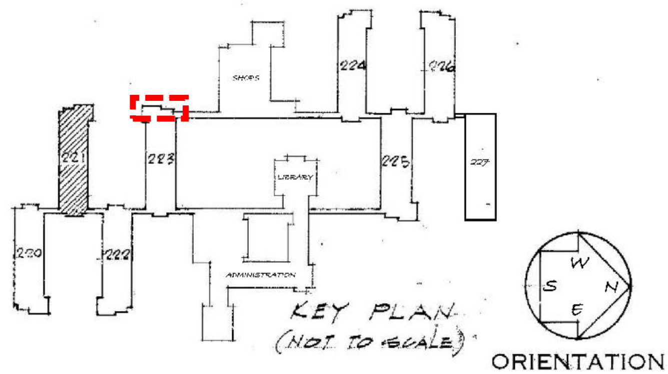
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	
On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.				

Building 223 – West Elevation

Building 223 is one of seven of the interconnected General Purpose Laboratories (GPL) and is located at the outer edge fo the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The west elevation is the principal facade of Building 223, the Materials Building, at NIST. The main formal entrance is located on this elevation with a wide canopy, an aluminum fasica, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick facade besides the main entrance on the first floor. Instead, the architectural interest is expressed in the projecting and recessed forms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the main body of the building and wraps around to indicate the service entrance on the south facade. This horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)



Building 223 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

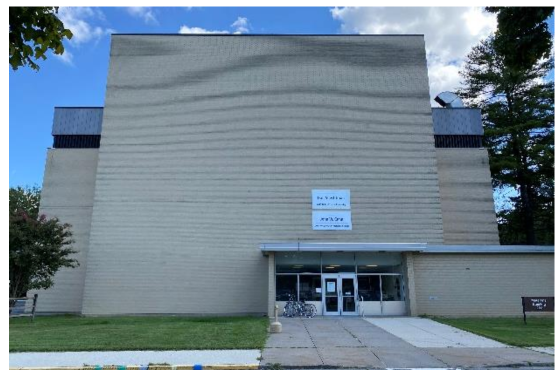
The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½”-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building’s overall feeling of horizontality.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the west exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa’s proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 223. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.



Building 223 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Base/Platform	Granite	Shot Ground	1963
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963

This storefront is found only on the west elevation of Building 223 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building’s design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

Building 223 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963
Hardware	Aluminum	Satin Finish	1963

These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.

FEATURE	MATERIAL	FINISH	DATE
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963

A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.

FEATURE	MATERIAL	FINISH	DATE
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963

An original fire department connection standpipe, known as a “Siamese connection,” is found on the one-story portion of the west elevation.

FEATURE	MATERIAL	FINISH	DATE
Date Stone	Granite	Shot Ground	1963

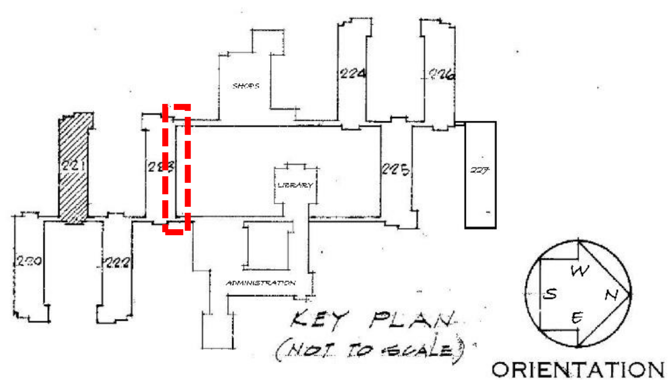
An original, granite date stone is located to the south of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”

Building 223 – North Elevation

The north elevation of Building 223 is a secondary facade and faces the concourse at Building 101's west elevation and the concourse running north to the Machine Shop and Building 226. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones. Additional changes occurred in the early twenty-first century when a solar tint was applied to the first-floor windows to prevent deer from charging their own reflections in the glass.

Location Plan (NTS)



Building 223 – North Elevation

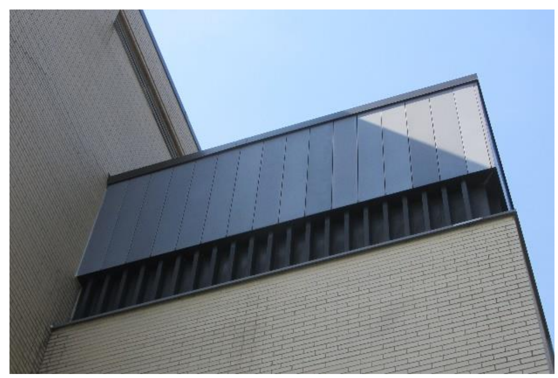
FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

PHOTO

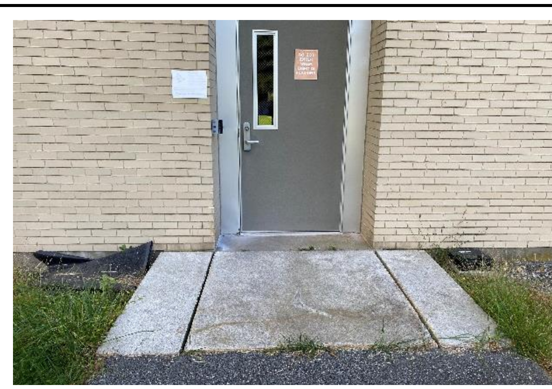
FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.



FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.



Building 223 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963, ca. 2000	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	

On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

In the early twenty-first century, a solar tint was applied to the first-floor windows to prevent deer from charging their own reflections in the glass.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	

An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.

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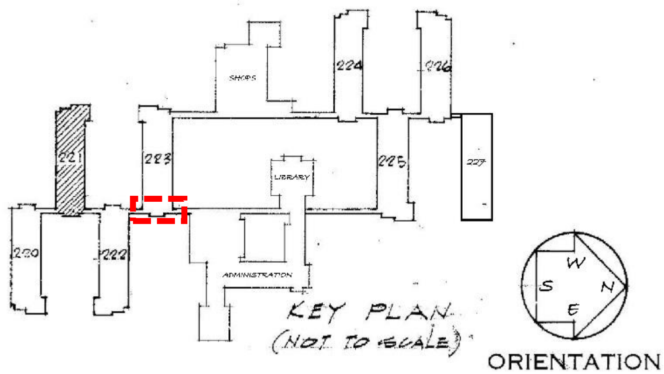
Building 223 – East Elevation

The east elevation is secondary facade of Building 223 and directly abuts the concourses to Building 101 and Building 222. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

There are no original 1963 doors on the east elevation of Building 223.

Location Plan (NTS)

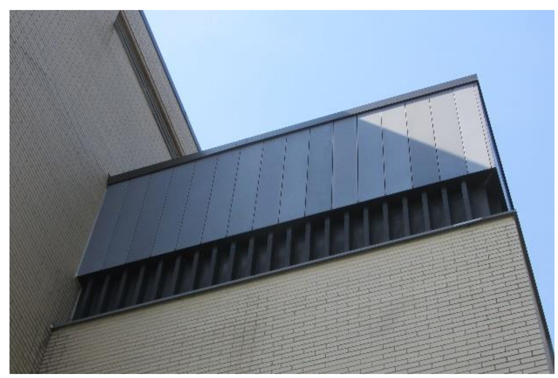


Building 223 – East Elevation

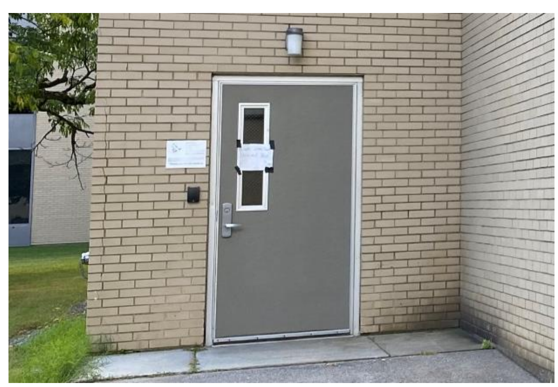
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963	
Coping	Limestone	Sand Rubbed	1963	
Banding	Aluminum	Duranodic Medium Black	ca. 2013	
Wall	Brick	Gray PBS No. 36.797	1963	
Base	Concrete	Cement Stucco	1963	

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless east elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible in select areas of the GPLs, such as the roof of Building 226, and likely exists below the aluminum coping of Building 223. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	

The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa's duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door Frame	Pressed Steel	Polished	1963	

An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.

Building 223 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Light – Surface Mounted	Aluminum/Glass	Anodized-Painted Finish/ Opaque	1963	
A surface-mounted light fixture is located above the entry door of the west elevation.				
Fire Department Connection Standpipe	Stainless Steel	Polished	1963	
An original fire department connection standpipe is located on the south end of the east elevation.				

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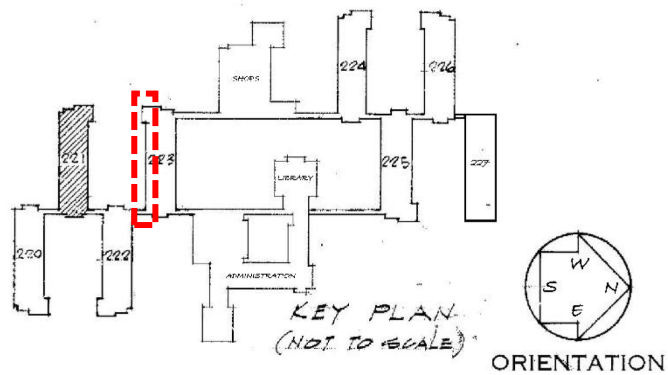
Building 223 – South Elevation

The south elevation of Building 223 is a secondary facade and directly abuts the concourse to Building 222. The south elevation features a large expanse with regularly alternating glazed beige brick and plate glass windows with insulated aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of louvered panels and aluminum cladding. A secondary entrance at the building's midpoint indicates the location of the interior stair hall.

There are no original 1963 doors on the south elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 223 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

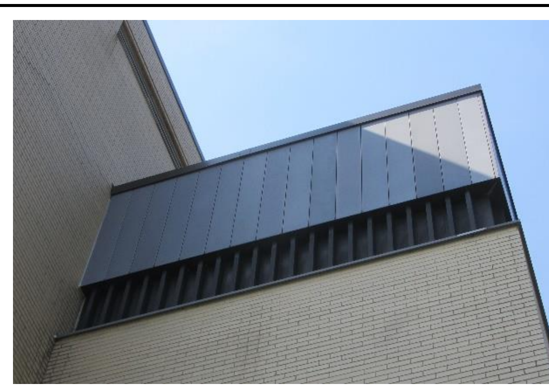
The ceiling of the loading dock at the west end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

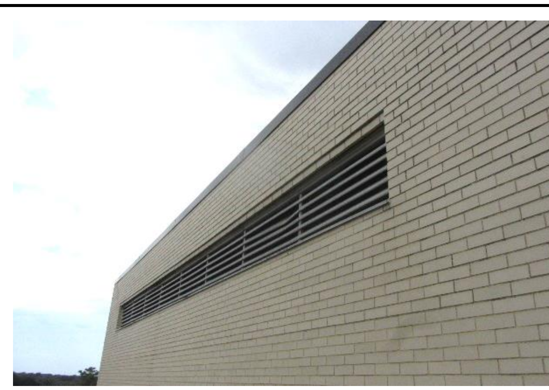
The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.



Building 221 – South Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Entrance Platform	Granite	Shot Ground	1963	
A singular entrance platform of this type is located at the midpoint of the south elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.				
Frame	Steel	Painted	1963	
A singular door of this type is found at the west end of the south elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.				
Window – Fixed	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Film	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	
On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the souh elevation of the mechanical penthouse.				

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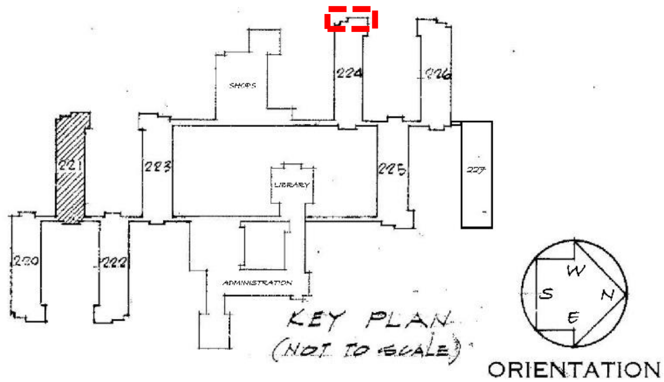
Building 224 – West Elevation

Building 224 is one of seven of the interconnected General Purpose Laboratories (GPL) and is located at the outer edge fo the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The west elevation is the principal facade of Building 224, the Polymer Building, at NIST. The main formal entrance is located on this elevation with a wide canopy, an aluminum fasica, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick facade besides the main entrance on the first floor. Instead, the architectural interest is expressed in the projecting and recessed forms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the main body of the building and wraps around to indicate the service entrance on the north facade. This horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)



Building 224 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½”-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building’s overall feeling of horizontality.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the west exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa’s proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 224. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

Building 224 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

PHOTO

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Base/Platform	Granite	Shot Ground	1963
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963

This storefront is found only on the west elevation of Building 224 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building's design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

Building 224 – West Elevation

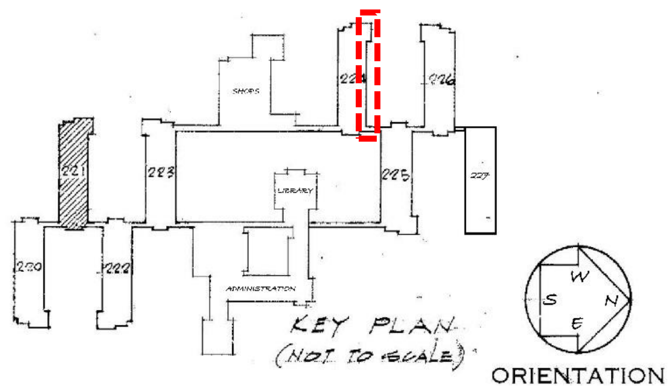
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963	
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
Hardware	Aluminum	Satin Finish	1963	
These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.				
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963	
A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.				
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963	
An original fire department connection standpipe, known as a "Siamese connection," is found on the one-story portion of the west elevation.				
Date Stone	Granite	Shot Ground	1963	
An original, granite date stone is located to the north of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with "1963."				

Building 224 – North Elevation

The north elevation of Building 224 is a secondary facade and faces the concourse at Building 226's south elevation. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. At the west end of the elevation is a one-story storage room and loading dock. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 224 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

The ceiling of the loading dock at the west end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.

Building 224 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.

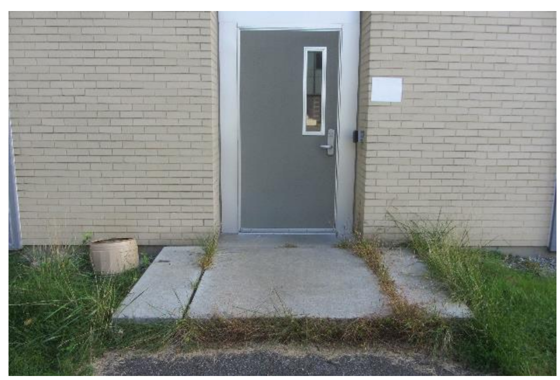
PHOTO

FEATURE	MATERIAL	FINISH	DATE
Concrete Platform	Concrete	Rubbed Smooth	1963
Curb	Steel	Satin	1963

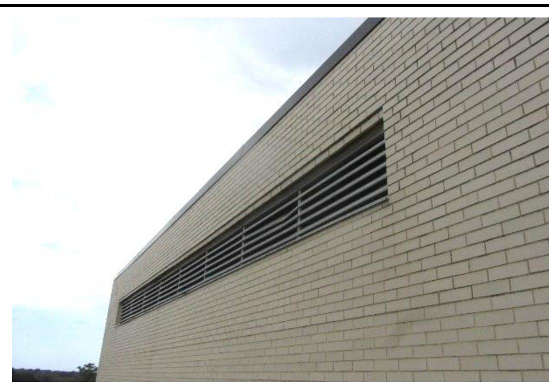
Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.

FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.



Building 224 – North Elevation

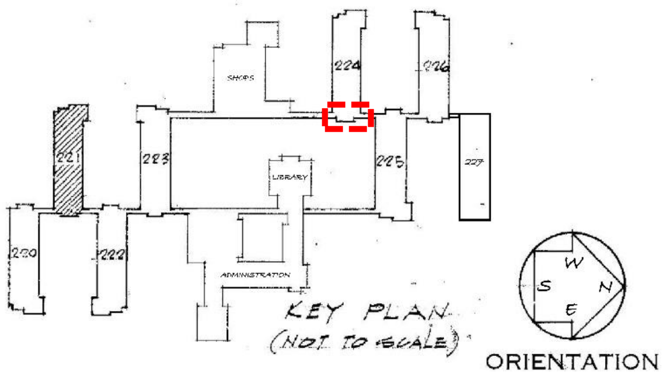
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Frame	Steel	Painted	1963	
A singular door of this type is found at the west end of the north elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.				
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963	 
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	
On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.				

Building 224 – East Elevation

The east elevation is a secondary facade of Building 224 and directly abuts the concourses to the Machine Shops and Building 225. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

There are no original 1963 doors or hardware on the east elevation.

Location Plan (NTS)



Building 224 – East Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

PHOTO

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless east elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible at the roof of Building 224. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa’s duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Floor	Granite	Shot Ground	1963

Three granite treads lead to a 5’-0” x 9’-1” granite platform.

Building 224 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door Frame	Pressed Steel	Polished	1963	
An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.				
Railing	Stainless Steel	Polished	1963	
A stainless steel handrail is located on the granite treads and platform.				

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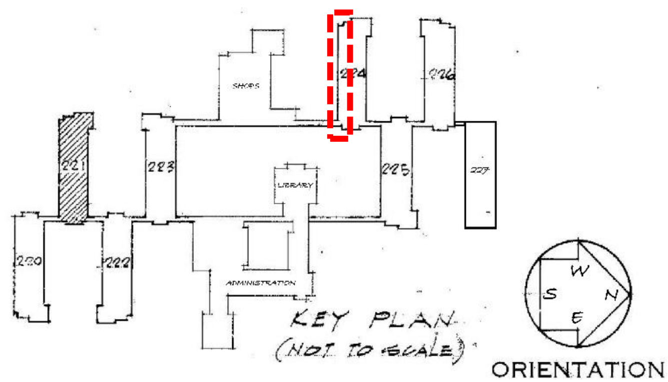
Building 224 – South Elevation

The south elevation of Building 224 is a secondary facade and faces the concourse between the Machine Shops and the General Purpose Laboratories (GPLs). The south elevation features a large expanse with regularly alternating glazed beige brick and plate glass windows with insulated aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of louvered panels and aluminum cladding. A secondary entrance at the building's midpoint indicates the location of the interior stair hall.

There are no original 1963 doors on the south elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



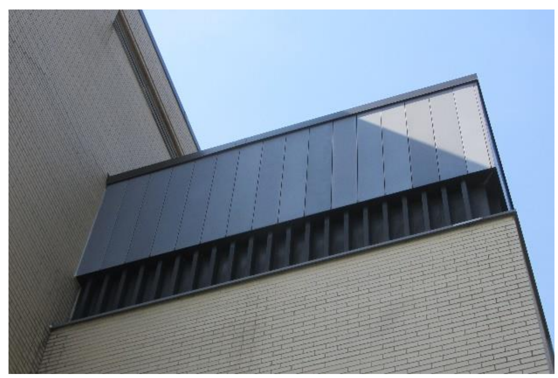
Building 224 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Parging	1963

PHOTO

The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement parging.

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963



The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the south elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

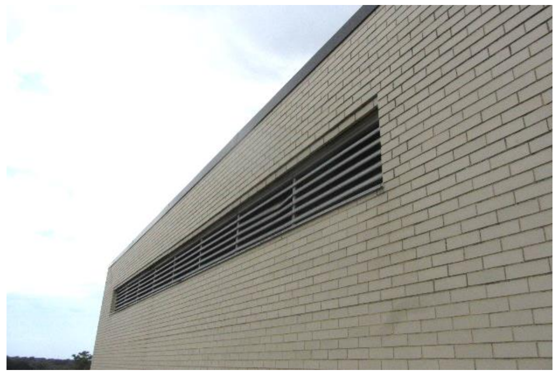
Building 224 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Window – Fixed	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Film	1963
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963

On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

FEATURE	MATERIAL	FINISH	DATE
Opening - Louvered	Alumium – Type 1	Anodized Natural Fine Finish	1963

An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the south elevation of the mechanical penthouse.



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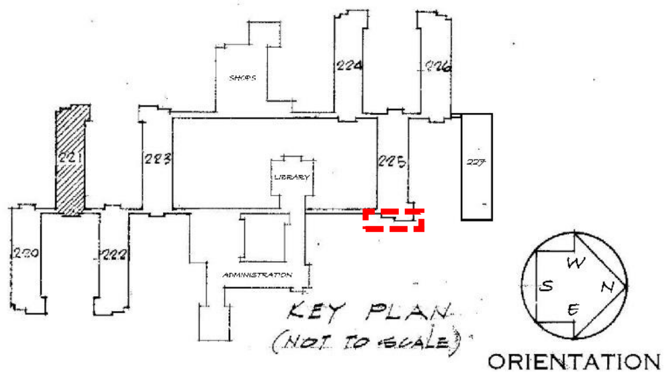
Building 225 – East Elevation

Building 225 is one of seven of the interconnected General Puspose Laboratoies (GPL) and is located at the outer edge fo the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The east elevation is the principal facade of Building 225, the Technology Building at NIST. The main formal entrance is located on this elevation with a wide canopy, aluminium fascia, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick facade besides the main entrance on the first floor. Instead, architectural interest is expressed in projecting and recesed foerms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the ain body fo the building and wraps around to indicate the service entrance on the north facade. The horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)



Building 225 – East Elevation

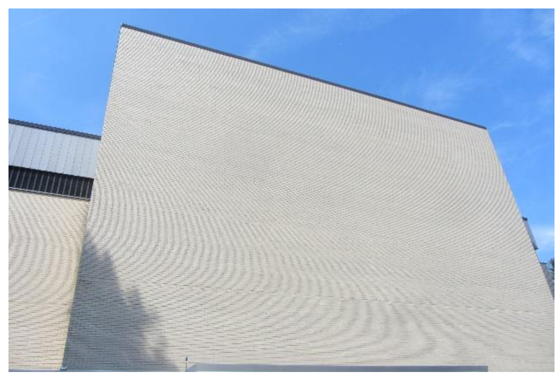
FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½"-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building's overall feeling of horizontality.

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa's proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 222. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.



Building 225 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963	
Base/Platform	Granite	Shot Ground	1963	
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963	
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963	

This storefront is found only on the east elevation of Building 225 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building's design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

Building 225 – East Elevation

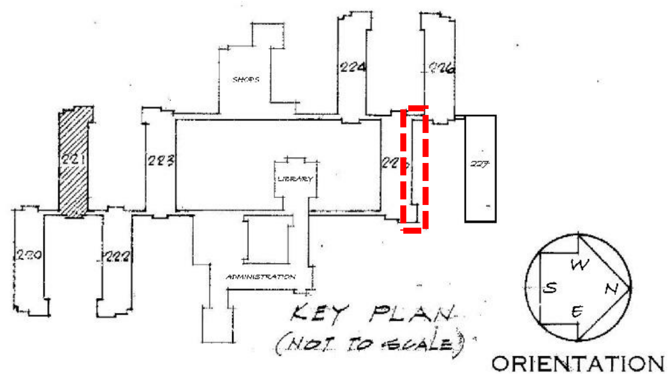
<table>
<tr><th>FEATURE</th><th>MATERIAL</th><th>FINISH</th><th>DATE</th><th>PHOTO</th></tr>
<tr><td>Door – Double-Leaf</td><td>Aluminum - Type 1/Glass</td><td>Anodized Natural Fine Satin /Clear</td><td>1963</td><td rowspan="4"></td></tr>
<tr><td>Frame</td><td>Aluminum - Type 1</td><td>Anodized Natural Fine Satin</td><td>1963</td></tr>
<tr><td>Hardware</td><td>Aluminum</td><td>Satin Finish</td><td>1963</td></tr>
<tr><td colspan="4">These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.</td></tr>
<tr><td>Rail</td><td>Aluminum - Type 1</td><td>Anodized Natural Fine Satin</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.</td></tr>
<tr><td>Fire Department Connection Standpipe</td><td>Stainless Steel</td><td>Clear Satin Finish</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">An original fire department connection standpipe, known as a “Siamese connection,” is found on the one-story portion of the west elevation.</td></tr>
<tr><td>Date Stone</td><td>Granite</td><td>Shot Ground</td><td>1963</td><td rowspan="2">
</td></tr>
<tr><td colspan="4">An original, granite date stone is located to the north of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”</td></tr>
</table>

Building 225 – North Elevation

The north elevation of Building 224 is a secondary facade and faces the concourse at Building 226's south elevation. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. At the east end of the elevation is a one-story storage room and loading dock. A secondary exterior entrance indicates the internal stair hall located toward the building's midpoint.

There are no original 1963 doors on the north elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 225 – North Elevation

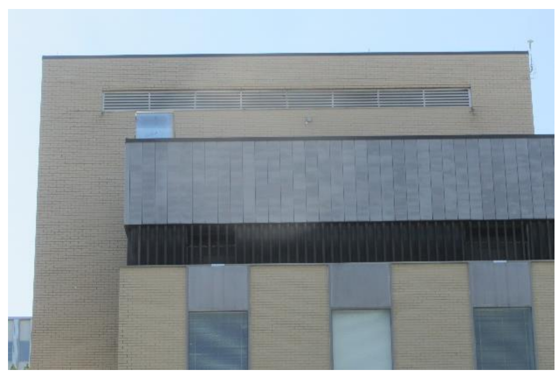
FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

The ceiling of the loading dock at the east end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

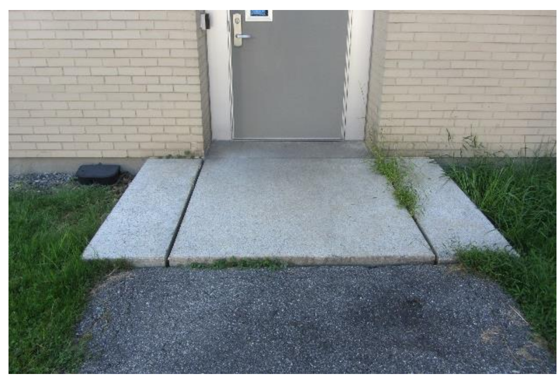
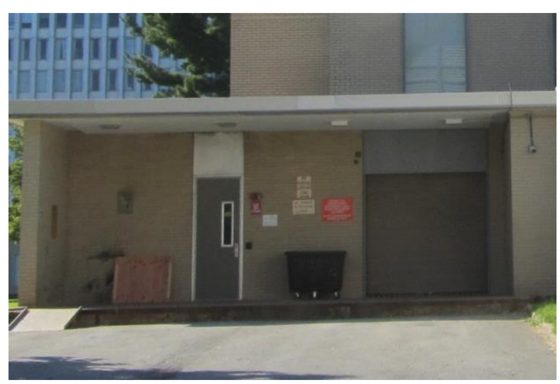
FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.



Building 225 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.				
Concrete Platform	Concrete	Rubbed Smooth	1963	
Curb	Steel	Satin	1963	
Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.				
Entrance Platform	Granite	Shot Ground	1963	
A singular entrance platform of this type is located at the midpoint of the north elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.				
Frame	Steel	Painted	1963	
A singular door of this type is found at the west end of the north elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.				

Building 225 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	

On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	 

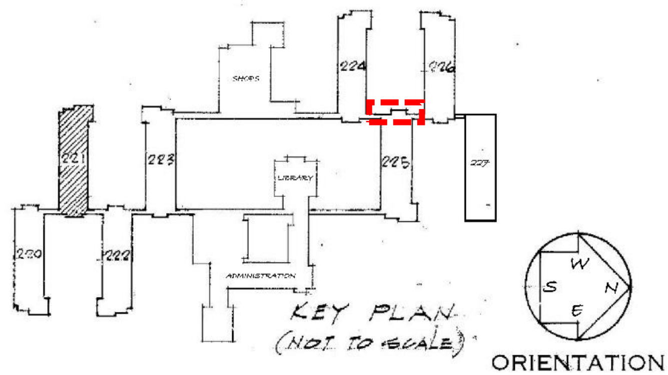
Extruded aluminum grilles with louvered blades and an adonized natural fine finish are located on the north elevation of the mechanical penthouse and the first-floor loading dock.

Building 225 – West Elevation

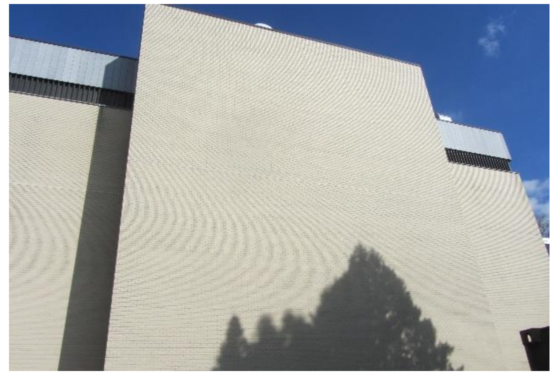
The west elevation is a secondary facade of Building 225 and directly abuts the concourses to Buildings 224 and 226. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding. A one-story portion used for outdoor cylinder storage is located on the north end of the west elevation.

There are no original 1963 doors or hardware on the west elevation.

Location Plan (NTS)



Building 225 – West Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963	
Coping	Limestone	Sand Rubbed	1963	
Coping	Aluminum	Duranodic Medium Black	ca. 2013	
Wall	Brick	Gray PBS No. 36.797	1963	
Base	Concrete	Cement Stucco	1963	

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless east elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement stucco parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible in select areas of the General Purpose Laboratories, such as the roof of Building 226, and likely exists below the aluminum coping of Building 225. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	

The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa’s duranodic medium black finish.

Building 225 – West Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Fascia	Aluminum – Type 1	Anodized Natural Fine Satin	1963	 
Wall	Plate Glass/Wire Fence	Clear/ N/A	1963	
Wall	Concrete	Smooth	1963	
Base	Concrete Slab	N/A	1963	

The outdoor cylinder storage is articulated with an aluminum fascia and plate glass with wire fencing walls. The plate glass walls are surrounded by aluminum frames and concrete masonry walls.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door Frame	Pressed Steel	Polished	1963	

An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.

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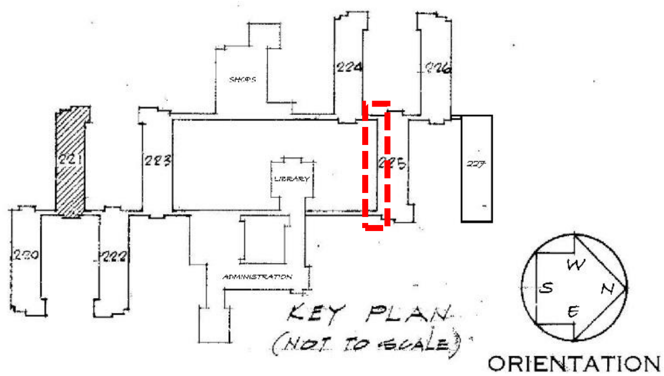
Building 225 – South Elevation

The south elevation of Building 225 is a secondary facade and faces the concourses between Building 226 and Building 101. The south elevation features a large expanse with regularly alternating glazed beige brick and plate glass windows with insulated aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of louvered panels and aluminum cladding. A secondary entrance at the building's midpoint indicates the location of the interior stair hall.

There are no original 1963 doors on the south elevation as all doors and their associated frames and hardware are replacement ones.

Location Plan (NTS)



Building 225 – South Elevation

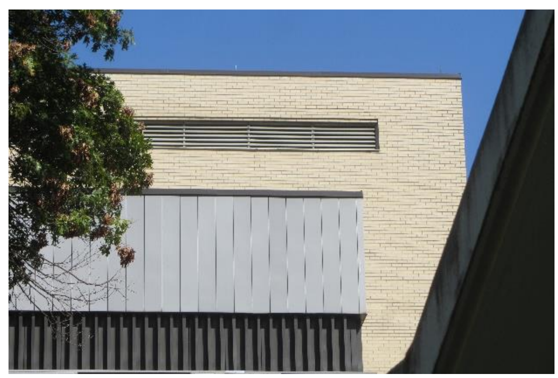
FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Parging	1963

The primary cladding of the south exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement parging.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

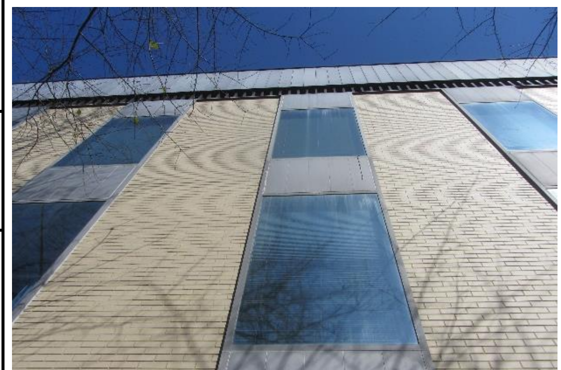
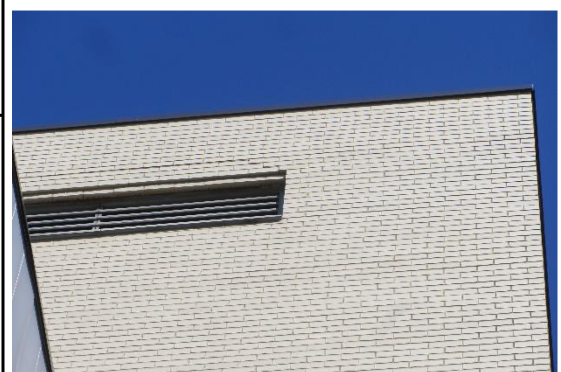
The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.



FEATURE	MATERIAL	FINISH	DATE
Entrance Platform	Granite	Shot Ground	1963

A singular entrance platform of this type is located at the midpoint of the south elevation leading from the internal stair to the exterior of the building. The platform is comprised of three pieces of granite including one large square flanked by two rectangular parts.

Building 225 – South Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Window – Fixed	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Film	1963	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	
On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Alumium – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the south elevation of the mechanical penthouse.				

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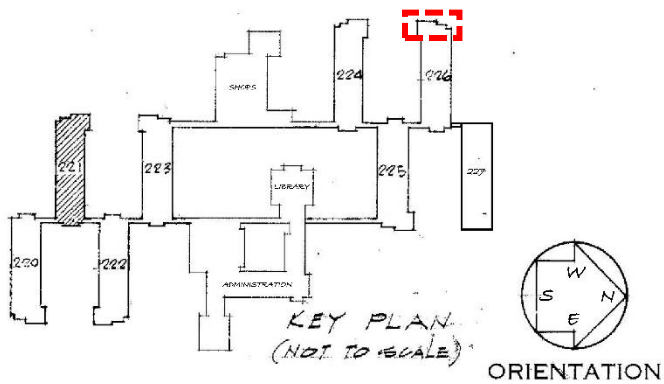
Building 226 – West Elevation

Building 226 is one of seven of the interconnected General Purpose Laboratories (GPL) and is located at the outer edge fo the complex. The seven GPLs form the main core of the National Institute of Standards and Technology (NIST) research campus in Gaithersburg, MD. The GPLs are significant as excellent examples of modernist International Style.

The west elevation is the principal facade of Building 226, the Building Research Building, at NIST. The main formal entrance is located on this elevation with a wide canopy, an aluminum fasica, and aluminum curtain wall demarcating the vestibule. There are no punched openings in the four-story brick facade besides the main entrance on the first floor. Instead, the architectural interest is expressed in the projecting and recessed forms reflecting the interior function. The laboratory core is pushed forward in the center while the circulation corridors and office cores are recessed to the left and right. The one-story entrance projects from the main body of the building and wraps around to indicate the service entrance on the south facade. This horizontal element offsets the verticality of the blank brick walls.

Location Plan (NTS)



Building 226 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Rubbed Smooth, Stucco Concrete	1963

The ceiling of the entrance vestibule consists of a concrete slab with a rubbed smooth finish and ½”-deep v-joints. The ceiling was recently finished with a concrete stucco at an unknown date. The wide ceiling depth further enhances the building’s overall feeling of horizontality.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete Parging	Smooth	1963

The primary cladding of the west exterior elevation is beige face brick (Gray PBS No. 36.797). The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of concrete parging.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern Duranodic aluminum coping. Duranodic is Alcoa’s proprietary name for an electrochemical treatment that protects aluminum from oxidation. The original limestone coping is visible in select areas of the roof of Building 226. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

Building 226 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE
Storefront	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Base/Platform	Granite	Shot Ground	1963
Canopy	Concrete-Integral/ Aluminum Type 1	Rubbed Smooth, Stucco Concrete/ Anodized Natural Fine Satin	1963
Fascia	Aluminum - Type 1	Anodized Natural Fine Satin	1963

This storefront is found only on the west elevation of Building 226 and designates the formal entrance vestibule. The aluminum-and-glass wall spans between structural walls clad in beige brick veneer. The storefront is divided into three symmetrical bays with an entrance door in the center. Each bay has a horizontal lite over two vertical lites. The bottom third of the vertical lites have an opaque film which is not original to the building's design and was installed at an unknown date. Above, the storefront terminates into a cantilevered concrete canopy with an aluminum fascia. There is an aluminum frame at the bottom of the storefront and granite pavers to mark the entrance. The granite pavers extend two rows out from the building to meet the concrete sidewalk.

Building 226 – West Elevation

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Aluminum - Type 1/Glass	Anodized Natural Fine Satin /Clear	1963
Frame	Aluminum - Type 1	Anodized Natural Fine Satin	1963
Hardware	Aluminum	Satin Finish	1963

These single-lite aluminum doors are the original exterior door type. Original hardware includes dead bolts and pull plates on the exterior and a simple push bar on the interior. The door frame is aluminum with a steel lintel plate above.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Rail	Aluminum - Type 1	Anodized Natural Fine Satin	1963

A simple, extruded aluminum hand rail is located at the double-leaf door of the entrance vestibule. Like its surrounding materials, the aluminum features an anodized natural fine satin finish.

FEATURE	MATERIAL	FINISH	DATE
Fire Department Connection Standpipe	Stainless Steel	Clear Satin Finish	1963

An original fire department connection standpipe, known as a “Siamese connection,” is found on the one-story portion of the west elevation.

FEATURE	MATERIAL	FINISH	DATE
Date Stone	Granite	Shot Ground	1963

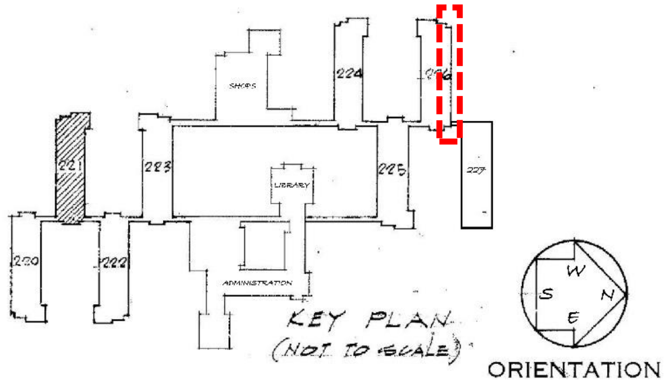
An original, granite date stone is located to the south of the entrance vestibnule. The granite stone features a shot ground finish and is inscribed with “1963.”

Building 226 – North Elevation

The north elevation of Building 226 is a secondary facade and faces the concourse at Building 227's west elevation. The north elevation features a large expanse with regularly alternating beige face brick with insulated aluminum curtain walls with plate glass windows and aluminum spandrel panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of insulated aluminum cladding. A secondary exterior entrance indicates the internal stair hall located towards the building's midpoint. The north elevation of Building 226 is one of the few GPLs that retains an original exterior door.

In 2009, all windows on the north elevation were replaced in kind.

Location Plan (NTS)



Building 226 – North Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping Cap	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Aluminum	Duranodic Medium Black	ca. 2013
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Stucco	1963

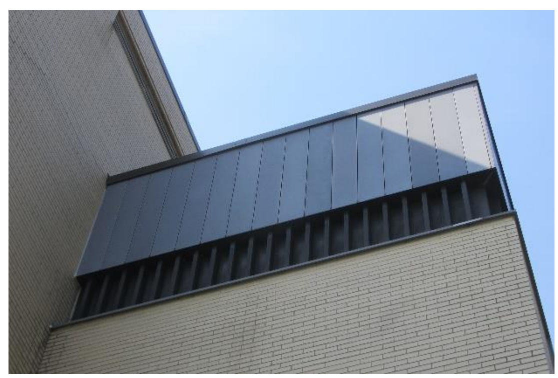
The primary cladding of the north exterior elevation is beige face brick (Gray PBS No. 36.797) alternating between bands of plate glass and insulated aluminum window assemblies. The use of brick cladding on the first three floors of the building identifies these as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Below, a one-story loading dock is similarly clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.

PHOTO

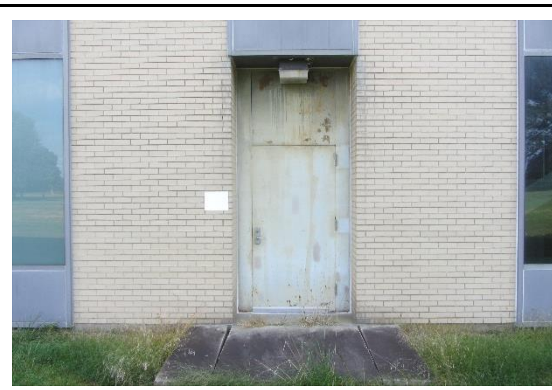
FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa duranodic medium black finish.



FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf, One-Lite	Hollow Metal	Painted	1963
Frame	Pressed Steel	Painted	1963
Hardware	Aluminum	Satin Finish	1963

One original door type is found at the midpoint of the north elevation, leading from the internal stair to the exterior of the buildng. The hollow metal door is surrounded by its original pressed steel frame and includes its original aluminum hardware.



Building 226 – North Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Curtain Wall	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Finish	1963, ca. 1998-2002	
Spandrel Panel	Aluminum – Type 2	Alcoa #2020 Grey	1963	

On the north elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.

Between 1998 and 2002, new insulation and components of the window assemblies were replaced in Building 226. It remains unclear which portions or if the entire window assembly was replaced.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Opening - Louvered	Alumium – Type 1	Anodized Natural Fine Finish	1963	

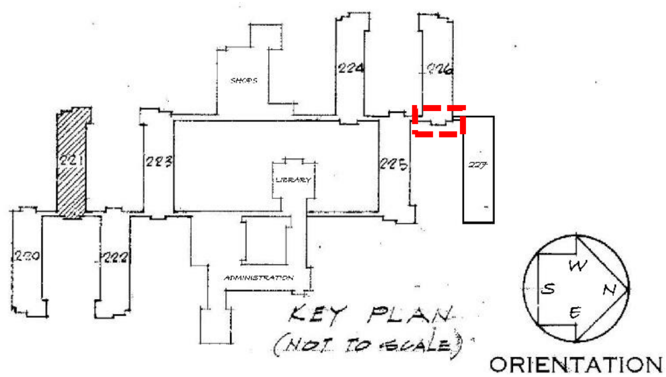
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the north elevation of the mechanical penthouse.

Building 226 – East Elevation

The east elevation is a secondary facade of Building 226 and directly abuts the concourses to Building 225 and 227. The elevation features beige face brick and is devoid of any openings. Above the first three stories, the attic level is articulated by heavy horizontal banding consisting of insulated aluminum cladding.

There are no original 1963 doors or hardware on the east elevation.

Location Plan (NTS)

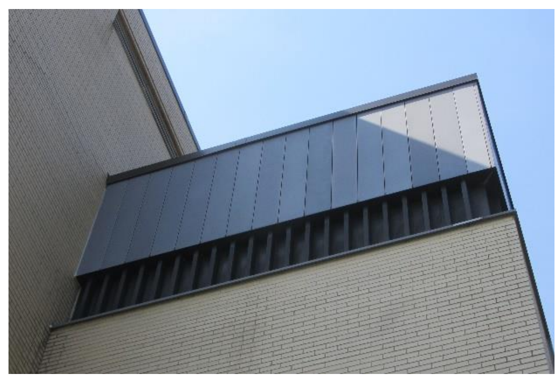


Building 226 – East Elevation

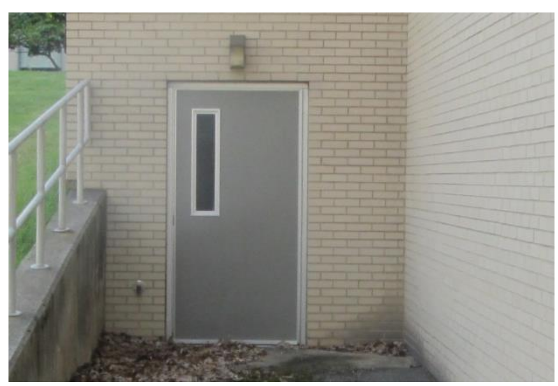
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping Cap	Aluminum - Type 2	Alcoa #2020 Grey	1963	 
Coping	Limestone	Sand Rubbed	1963	
Coping	Aluminum	Duranodic Medium Black	ca. 2013	
Wall	Brick	Gray PBS No. 36.797	1963	
Base	Concrete	Cement Stucco	1963	

Beige face brick (Gray PBS No. 36.797) extends along the entire windowless east elevation. The use of brick cladding on the first three floors of the building identifies these as occupied floors, whereas the aluminum banding above it indicates mechanical and utility spaces. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cast-in-place concrete.

Above, the mechanical penthouse has a similar material palette with beige brick cladding and modern aluminum coping. The original limestone coping is visible at the roof of Building 226. The original coping was most likely covered by the modern aluminum ca. 2013 when roof repairs occurred.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963	

The attic/mechanical level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building's long, low-rise profile. The aluminum-clad walls are capped with an extruded aluminum cornice with a matching Alcoa's duranodic medium black finish.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door Frame	Pressed Steel	Polished	1963	

An original door frame is located on the north end of the elevation. The door is a modern replacement of the original hollow metal one.

Building 226 – East Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Fire Department Connection Standpipe	Stainless Steel	Polished	1963	

An original fire department connection standpipe is located on the north end of the east elevation.

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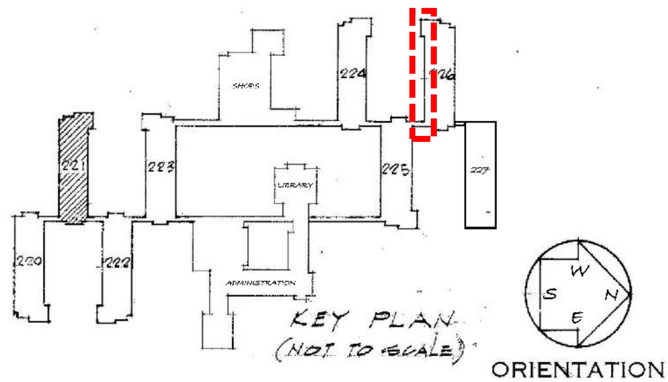
Building 226 – South Elevation

The south elevation of Building 226 is a secondary facade and faces the concourse between Buildings 225 and 226. The south elevation features a large expanse of fixed glass and porcelainized steel panels on the second and third floors. Below, the first floor is articulated by vertically oriented, anodized aluminum insulated wall panels. Above, the attic level of the building is defined by heavy horizontal banding consisting of louvered panels and aluminum cladding.

Location Plan (NTS)



Building 226 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete – Integral	Monolithic with Surface Rubbed Smooth	1963

The ceiling of the loading dock at the west end of the elevation consists of a concrete slab with a monolithic and smooth surface finish. The ceiling is original though modifications have occurred near new conduit and light installations.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Coping	Limestone	Sand Rubbed	1963
Cornice	Aluminum – Type 1	Anodized Natural Fine Finish	1963
Wall	Brick	Gray PBS No. 36.797	1963
Base	Concrete	Cement Parging	1963

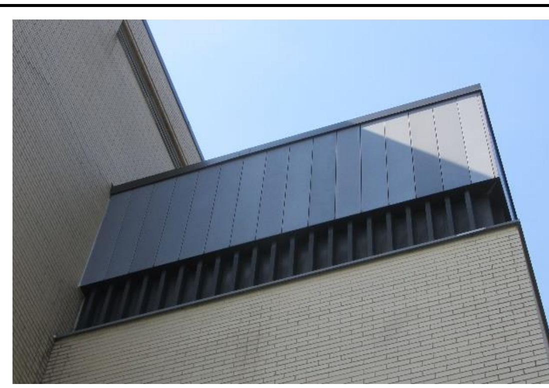
The ends of the south exterior elevation are clad in beige face brick (Gray PBS No. 36.797). The brick cladding is a continuation from the east and west elevations and identifies the first three floors of the building as occupied floors. The third floor is capped with an extruded aluminum cornice with an Alcoa #2020 Grey finish and the base consists of cement parging.

Below, a one-story loading dock is similar clad in beige brick cladding and features an extruded aluminum cornice with an anodized natural fine finish.

To the east, another one-and-a-half-story portion of the building is clad in beige brick cladding and a limestone coping.

FEATURE	MATERIAL	FINISH	DATE
Wall - Attic	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963
Coping	Aluminum – Type 3	Alcoa Duranodic Medium (Black)	1963

The attic level of the building is articulated with insulated aluminum cladding which creates a heavy horizonal banding to further emphasize the building’s long, low-rise profile. The aluminum clad walls are capped with an extruded aluminum cornice with a matching Alcoa Duranodic medium black finish.



Building 226 – South Elevation

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall – Second and Third Floor	Porcelainized Steel Panels	Light Blue/ Alcoa #2020 Grey	1963

The second and third levels of the building are articulated with porcelainized steel panels which, similar to the building's north elevation, creates a heavy horizontal banding to further emphasize the building's long, low-rise profile. The light blue porcelain panels are held within anodized steel frames. The panels are capped with an anodized aluminum cornice with a matching Alcoa #2020 Grey finish.

PHOTO

FEATURE	MATERIAL	FINISH	DATE
Coping	Aluminum – Type 2	Alcoa #2020 Grey	1963
Wall – First Floor	Aluminum – Type 2	Alcoa #2020 Grey	1963
Base	Concrete	Cement Parging	1963

The first level of the south elevation is defined by vertically oriented, anodized aluminum insulated wall panels.

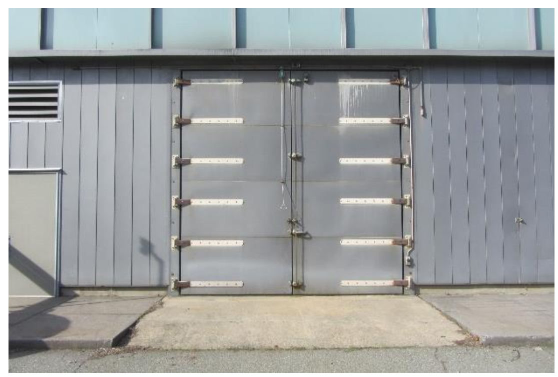
FEATURE	MATERIAL	FINISH	DATE
Concrete Platform	Concrete	Rubbed Smooth	1963
Curb	Steel	Satin	1963

Cast-in-place concrete platform with pieces of blue and gray aggregate. The edge of the platform features a steel curb that is likely original but the date is unconfirmed.

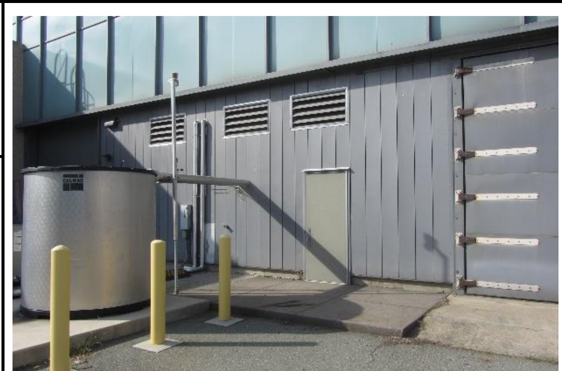
FEATURE	MATERIAL	FINISH	DATE
Frame	Steel	Painted	1963

A singular door of this type is found at the west end of the south elevation at the loading dock. The door frame is original and painted steel, however, the door and its associated hardware are replacements of the original, painted aluminum one.

Building 226 – South Elevation

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Roll-Up	Steel	Alcoa #2020 Grey	1963	
Frame	Steel	Alcoa #2020 Grey	1963	
Hardware	Stainless Steel	Satin	1963	
Three doors of this type are found along the south elevation. The door frame, door, and hardware are all original and provide access to the structural labs on the interior of the building.				
Door – Double-Leaf, Double-Height	Steel	Alcoa #2020 Grey	1963	
Frame	Steel	Alcoa #2020 Grey	1963	
Hardware	Stainless Steel	Satin	1963	
This door type is found near the midpoint of the south elevation. The door frame, door, and hardware are all original and provide access to the structural labs on the interior of the building.				
Door – Single-Leaf	Hollow Metal	Painted	1963	
Frame	Pressed Steel	Satin	1963	
Hardware	Aluminum	Satin	1963	
A singular door of this type is at the west end of the elevation and consists of a hollow metal and single leaf door, pressed steel frame, and aluminum hardware.				
Door – Single-Leaf, One-Lite	Hollow Metal/Glass	Painted/Clear	1963	
Frame	Stainless Steel	Satin	1963	
One door type is found at the one-story portion of the south elevation, The door frame, door, and hardware are all original and provide access to the structural labs on the interior of the building.				

Building 226 – South Elevation

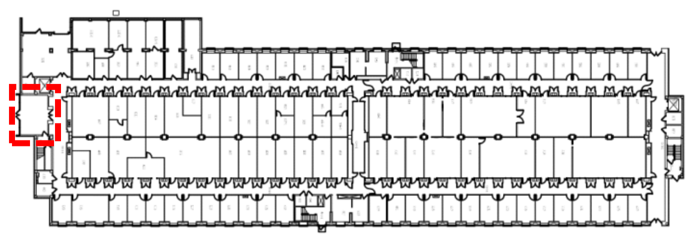
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Double-Leaf, One-Lite	Hollow Metal/Glass	Painted/Clear	1963	
Frame	Stainless Steel	Satin	1963	
One door type is found at the one-story portion of the south elevation. The door frame, door, and hardware are all original and provide access to the structural labs on the interior of the building.				
Window – Fixed	Aluminum – Type 2/Glass	Alcoa #2020 Grey /Clear with Solar Film	1963	
On the south elevation, columns of brick panels alternate regularly with vertical window assemblies of plate glass windows and insulated aluminum spandrel panels. All metal parts of the window assembly are finished with Alcoa #2020 Grey.				
Opening - Louvered	Aluminum – Type 1	Anodized Natural Fine Finish	1963	
An extruded aluminum grille with louvered blades and an adonized natural fine finish is located on the south elevation of the mechanical penthouse.				
Opening - Louvered	Aluminum – Type 2	Alcoa #2020 Grey	1963	
Extruded steel grilles with louvered blades and an adonized natural fine finish are located on the first floor of the south elevation.				

Lobbies: Buildings 220, 221, 222, 223, 224, 225, 226

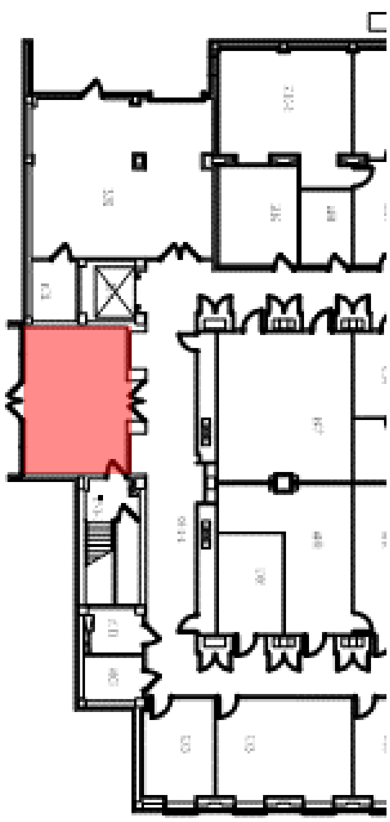
The lobby of each General Purpose Laboratory (GPL) is located at either the east or west end of the first floor, whichever is opposite the concourses. These lobbies are the formal entrances to each building, though secondary entrances are found at the internal stair halls located toward the buildings' midpoint along the north and south facades. Lobbies demonstrate a common material palette and configuration. Aluminum-and-glass construction distinguishes this entrance apart from other portions of the exterior façade. Other walls are clad in glazed brick or plaster-and-lath, and terrazzo is used as the primary floor and wall base material. Other original finishes include the steel doors and aluminum registers. Most lobbies contain nearly all of the original finishes, though some materials have been altered or covered at certain locations.

Lobbies for each GPL include LO-A-1.

Location Plan (NTS)



Key Plan (NTS)



Lobbies: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling Tiles	Mineral Plaster	Smooth	1963

Ceiling tiles in all lobbies are comprised of smooth mineral plaster within a concealed grid system. Original ceiling tiles are 12" x 12".

PHOTO

Ceiling at Building 224.

FEATURE	MATERIAL	FINISH	DATE
Curtain Wall	Anodized Aluminum/ Polished Plate Glass	Natural Fine Satin/ Clear	1963

The exterior wall at lobbies is defined by an aluminum-and-glass curtain wall system. The curtain wall construction currently includes two large rectangular sidelites at either side of the exterior entrance door with a five-lite transom above the door assembly. The original drawings show only a three-lite transom, which indicates possible alteration to the wall's construction. The curtain wall at some lobbies has a vinyl material covering at the lower third of the glass panel which is not original to the building's construction.

The exterior doors at each lobby are full-lite double leaf doors with aluminum hardware. Exterior doors and hardware are original to the buildings' construction.

Curtain Wall at Building 224.

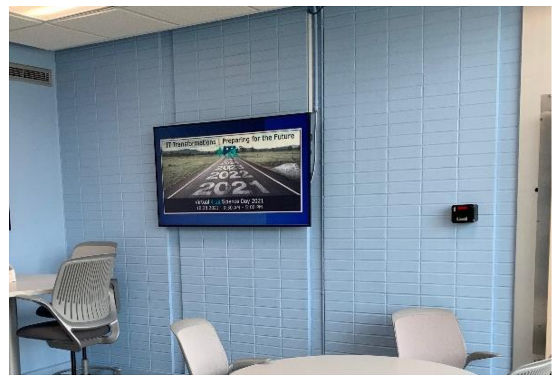
Curtain Wall at Building 222.

Lobbies: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Wall	Glazed Brick	Painted	1963	

The north and south walls of each lobby are clad in grey glazed brick. The original construction drawings indicate that these walls were originally exposed, but have since been painted an ivory color. This is the case for all lobbies, except Building 225 in which these walls are painted a light blue. In the lobby of Building 226, a fabric wall covering is installed over part of these walls.

Wall at Building 223.



Wall at Building 225.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Wall	Plaster	Painted	ca. late 20th/ early 21st century	

The wall adjacent to the corridor is clad with plaster-and-lathe construction. . Like the brick walls at this building, the plaster wall is painted a light blue at Building 225. These walls were originally covered in a vinyl material. In Buildings 220 and 224, a concrete-like material is installed over the plaster-and-lath construction. It is unclear when this material was added, though material types suggest this occurred in the late 20th or early 21st century.

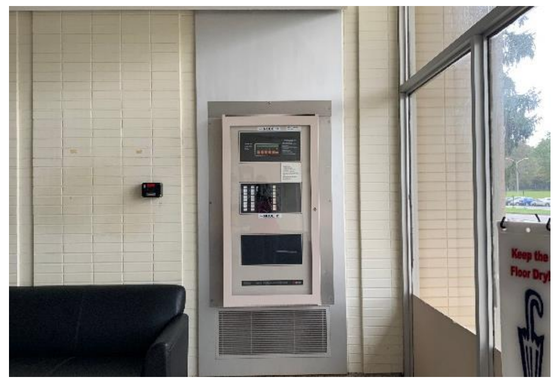
Wall at Building 223.

Lobbies: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Wall Panel	Steel	Stainless	1963
Grille	Steel - Extruded	Stainless	1963

The brick walls at all lobbies contain an aluminum panel at either side: one which frames an aluminum door to the stairwell, and the other upon which a fire indicator panel is mounted with an extruded aluminum grille below. In some locations, this panel is painted the same color as the brick wall.

Wall panel with door at Building 224.



Wall panel with grille at Building 220.

FEATURE	MATERIAL	FINISH	DATE
Floor	Terrazzo	Polished	1963
Base	Terrazzo	Polished	1963
Divider Strips	Metal	N/A	1963

The original floor material of lobbies is terrazzo consisting of black and white chips in gray cement set within metal divider strips. This is still present in all lobbies, though it is covered by carpet in Building 226. It is unclear when this was installed.

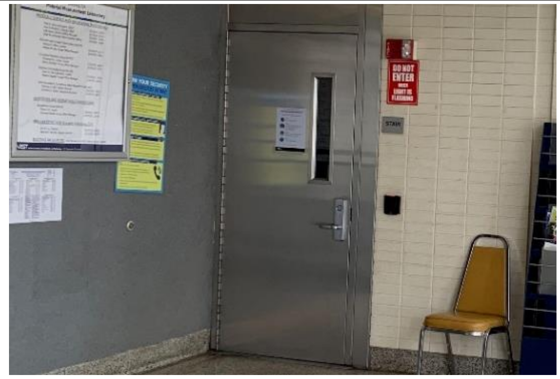
At all lobbies, a terrazzo base which matches the terrazzo floor runs the entirety of the space’s perimeter.

Floor and base at Building 222.

Lobbies: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Door – Single Leaf	Steel	Stainless	1963
Hardware	Steel	Stainless	1963

A stainless-steel door is installed within one of the steel panels in each lobby.



Door at Building 224.

FEATURE	MATERIAL	FINISH	DATE
Door – Double Leaf	Anodized Aluminum/ Polished Plate Glass	Natural Fine Satin/ Clear	1963
Hardware	Anodized Aluminum	Natural Fine Satin	1963

The exterior doors at each lobby are full-lite double leaf doors with aluminum hardware, centered at the curtain wall. Both the doors and the hardware are original to the buildings' construction.

Door at Building 222.

FEATURE	MATERIAL	FINISH	DATE
Lighting	TBD	TBD	1963

Original lighting in lobbies is a 24" x 24" recessed fixture set within a 12" x 12" ceiling grid.

Light at Building 226.

FEATURE	MATERIAL	FINISH	DATE
Grille	Extruded Anodized Aluminum	Natural Fine Satin	1963

An extruded aluminum grille is set above the door along the wall which is adjacent to the corridor.

Grille at Building 222.

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General Corridors: Buildings 220, 221, 223, 224, 225, 226

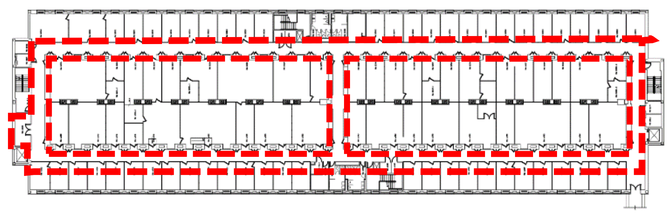
The corridors allow circulation among the offices, laboratories, kitchen, mail room, and break room of each floor of the General Purpose Laboratories (GPL). Two long corridors divide the interior laboratory spaces from the offices located on either side. Additionally, three short passages connect the two main corridors—one at the west end, one at the east, and one at the center of the building. All corridor walls are moveable panels of baked enamel steel, allowing for reconfiguration depending on the department's current programmatic needs. Other original finish materials are utilitarian including perforated aluminum acoustical tiles, vinyl asbestos floors, steel doors, and glazed structural facing tile. Such materials could easily be replaced one-by-one in the event of damage, rather than a system-wide replacement.

Perhaps the most ingenious use of interior finishes is in the original wayfinding methods, as seen in Buildings 220 and 221. While it streamlined the design and construction processes, the repetitive modular design and long corridors could be disorienting, especially to visitors or newer staff members. The original design intent of the corridors employs colorful finish materials to improve wayfinding without reverting to cumbersome signage. Contrasting colors of structural facing tile at either end of the long main corridors distinguish the concourse end of the building from the external end. However, not all GPL buildings have retained their original wayfinding color schemes and have since been repainted to match nearby steel partitions.

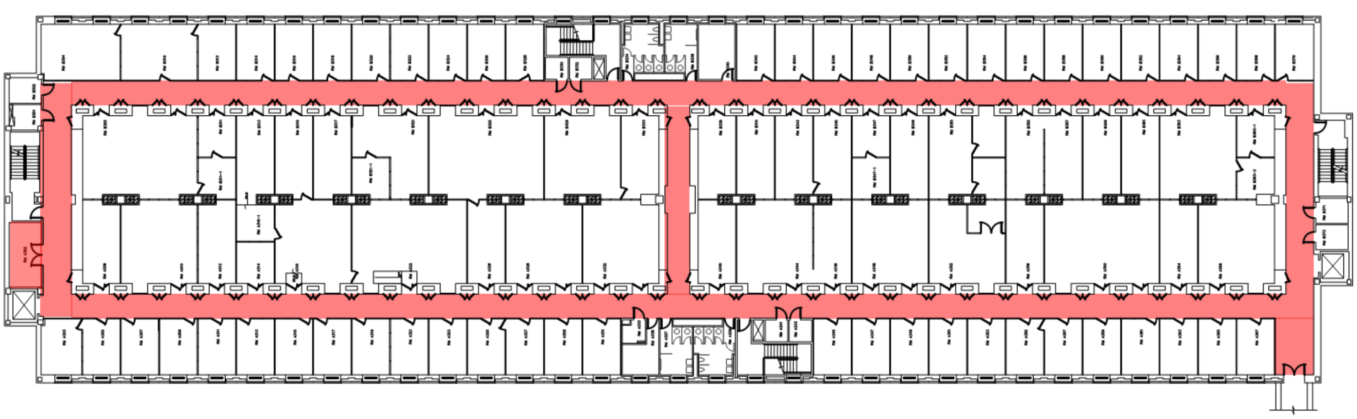
Corridor spaces for GPL Buildings 220-225 include CO-A-0, CO-B-0, CO-C-0, CO-E-0, CO-W-0, CO-A-1, CO-B-1, CO-C-1, CO-E-1, CO-W-1, CO-A-2, CO-B-2, CO-C-2, CO-E-2, CO-W-2, CO-A-3, CO-B-3, CO-C-3, CO-E-3, and CO-W-3. Corridor spaces for GPL Building 226 include CO-A-1, CO-C-1, CO-E-1, CO-W-1, CO-A-2, CO-C-2, CO-E-2, CO-W-2, CO-A-3, CO-B1-3, CO-B2-3, CO-C1-3, CO-C2-3, CO-E-3, and CO-W-3.

First-floor corridor of Building 220.

Location Plan (NTS)



Key Plan (NTS)



General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling Tiles	Perforated Aluminum	Factory Finish	1963

The entirety of the corridor’s ceiling consists of perforated aluminum acoustical tiles within a concealed, metal-pan system. A majority of the ceiling tiles are 9 “x 12” with 6” x 12” tiles in select areas. The aluminum acoustical tiles have a factory finish and round holes.

First-floor corridor of Building 223.

FEATURE	MATERIAL	FINISH	DATE
Wall	Steel	Baked Enamel	1963
Base	Steel	Baked Enamel	1963

Corridor walls at offices, laboratories, kitchens, and mailrooms consist of panels of baked enamel steel with baked enamel steel bases. The modular partitions enable flexible spaces as programming needs of the department change. Entrances to labs are recessed from the corridor and are articulated via alcoves clad in baked enamel steel partitions. In contrast, the offices, closets, and other utilitarian spaces are flush with the corridor walls.

Buildings 220 and 221 retain a majority of their original design intent with variations of a warm white wall color paired with a gray base. Others, such as Buildings 223, 224, 225, and 226 feature baked enamel steel walls with a modern, textured finish applied to select portions, particularly at the end of the long corridors.

First-floor corridor of Building 221.

Building 223: The partition to the right features modern, textured finish applied to the steel wall panel.

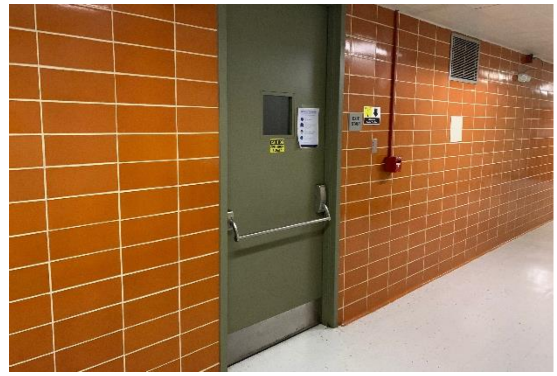
General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Wall	Structural Facing Tile	Glazed	1963
Base	Structural Facing Tile - Coved	Glazed	1963

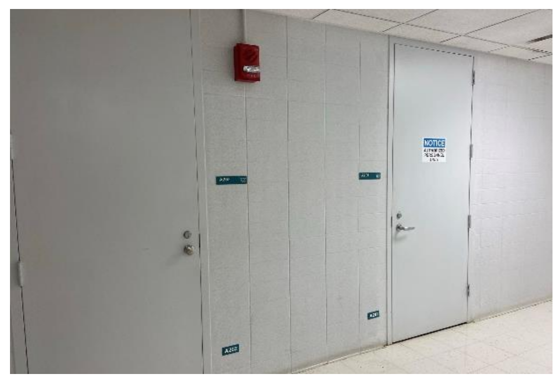
Structural facing tiles are located at either end of the long main corridors and feature matching, coved base tiles. In select buildings, like 220 and 221, the original contrasting colors of structural facing tile distinguish the concourse end of the building from the external end. The other GPLS retain their original structural facing tile, however, all were painted with a textured finish to coordinate with the adjacent steel partitions.

The breakrooms are similarly clad with structural facing tile. The space matches the corridor in finishes as it functions as an extension of the building's circulatory structure. Like the tiles in the corridors, Buildings 223, 224, 225, and 226 were painted with a textured finish and no longer convey their original design intent.

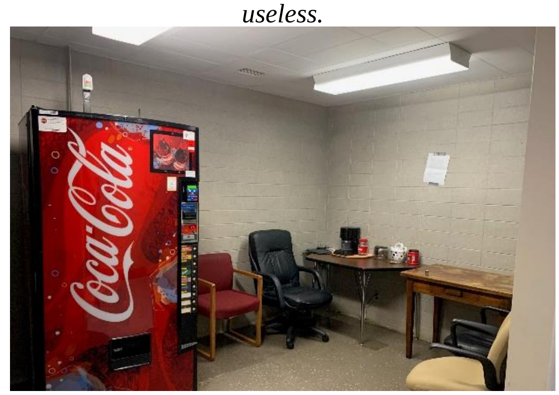
PHOTO



Third-floor corridor of Building 220.



Textured spray finishes have been applied to the structural facing tile, rendering the wayfinding aid useless.



Structural facing tile continues into the breakrooms of each floor.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Floor	Vinyl Asbestos Tile	N/A	1963

The corridor's floor is clad in vinyl asbestos tiles measuring 9" x 9" 1/8". Repaired areas have been replaced with a mix of 9" x 9" and 12" x 12" vinyl tile. Modern, replacement tile can be found most frequently at the door thresholds to the labs and offices, access panels, basement levels, and at the concourse entrances. These replacement tiles do not match the original VAT tile in color, pattern, or size.

Areas with the highest level of replacement include the first floor of Building 226 and basement of Building 225 with approximately 15% - 30% new tile. Areas with a 5-10% replacement tile (limited to thresholds, access panels, and select damaged areas) are the basement of Building 220, the first and second floor of Building 223, and second and third floors of Building 226. Areas with the smallest amount of replacement tile range from 1%-5% and are located on the first through third floors of Building 220, first through third floors of Building 221, third floor of Building 223, first through third floors of Building 224, and first through third floors of Building 225.

PHOTO

First-floor corridor of Building 224.

Basement corridor of Building 226.

Basement corridor of Building 226.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, hollow metal doors lead from the corridor to utilitarian spaces, such as the original janitor's and storage closets. Hollow metal doors feature steel frames and aluminum deadbolt and knob hardware.

Third-floor corridor of Building 220.

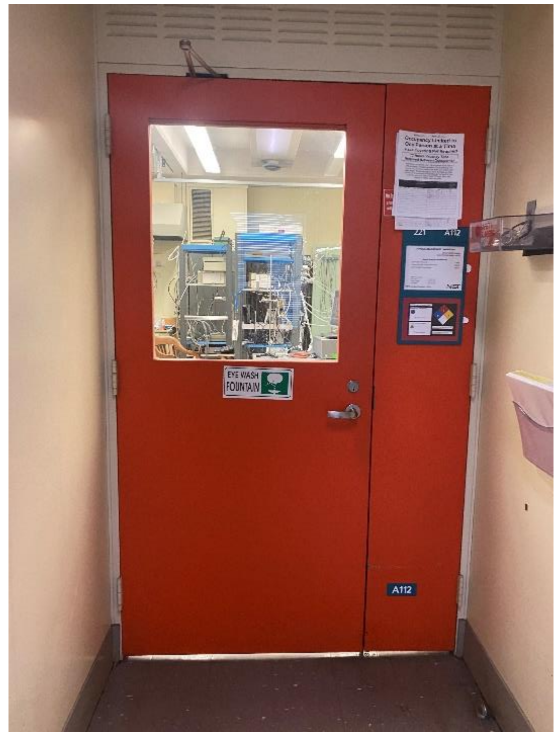
General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf with Lite	Steel	Baked Enamel	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

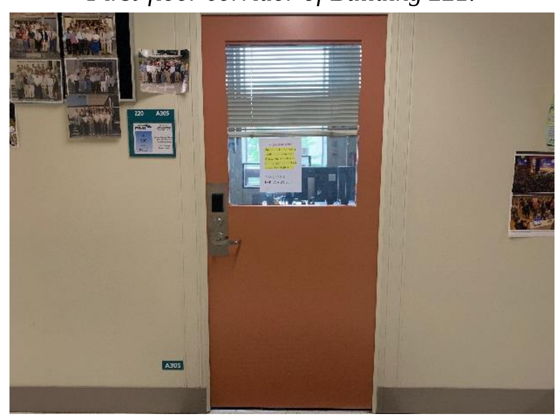
Single-leaf, baked-enamel steel doors with a lite are located on both the laboratory and office sides of the corridor. Doors on the laboratory side of the corridor feature an additional steel partition with a baked enamel finish which opens to create a larger doorway. All doors of this type are finished in an orange paint color, though only those in Building 221 have the original bright orange paint finish.

Hardware varies for this door type depending on the use and security measures. A majority of the doors retain their original aluminum deadbolt and lever hardware, however, there are examples within each building where modern, keypad deadbolts and levers have been installed.

PHOTO



First-floor corridor of Building 221.



Third-floor corridor of Building 220.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf with Lite	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, hollow metal doors lead into the two stairwells of each floor. The single square lite is set with wire glass and accompanied with an aluminum push bar and kick plate.

Third-floor corridor of Building 220.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Single-Leaf with Louvers	Hollow Metal	Painted	1963	 *Second-floor corridor of Building 220.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Satin	1963	
Hollow metal doors with louvered vents are found at the original telephone and mechanical closets adjacent the men and women's restrooms. The louvered openings are set below the door's midline. Original hardware includes aluminum door knobs, deadbolts, and butt hinges. Door knobs have been replaced with lever handles on some doors.				
Door – Single-Leaf with Louvers	Hollow Metal	Baked Enamel	1963	 *Third-floor corridor of Building 223.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Satin	1963	
Hollow metal doors with full-length louvered vents are found at select laboratories. Original hardware includes aluminum door knobs, deadbolts, and butt hinges. Door knobs have been replaced with lever handles on some doors.				
Door – Double-Leaf with Lite	Hollow Metal	Painted	1963	 *First-floor corridor of Building 221.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Satin	1963	
This door type is located in all buildings and leads to the concourse between GPLs. The double-leaf door is comprised of hollow metal, a steel frame, aluminum pulls, and a small, rectangular lite.				

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf	Steel	Baked Enamel	1963
Frame	Steel	Baked Enamel	1963
Hardware	Aluminum	Satin	1963

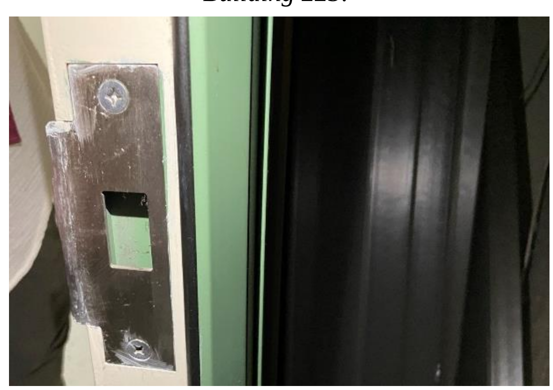
This single-leaf door type is found exclusively at the interior laboratory walls along the corridors. The baked enamel steel doors are integrated into the moveable partitions and are used to house ventilation and filtration mechanisms associated with the nearby laboratories. Some doors of this type, particularly in Building 221, are preserved in their original paint colors, whereas others retain hints of their original color scheme only visible at the hinges and door jambs.

Original hardware includes aluminum round latches and butt hinges.

PHOTO

First-floor corridor of Building 221.

Door hardware of third-floor corridor closet in Building 223.



Evidence of the door's original paint color in Building 223.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Steel	Baked Enamel	1963
Frame	Steel	Baked Enamel	1963
Hardware	Aluminum	Satin	1963

This double-leaf door type is found exclusively at the interior laboratory walls along the corridors. The baked enamel steel doors are integrated into the movable partitions and are used for storage.

The double-leaf closets retain their original hardware of round latches and butt hinges.

Third-floor corridor of Building 224.

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Aluminum	Polished	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

This door type is found at the Receiving Room entrance on the first floor of the GPLS. The polished aluminum double doors have simple push plates and a steel frame.

First-floor corridor of Building 223.

FEATURE	MATERIAL	FINISH	DATE
Lighting	Steel/Aluminum/ Glass	Painted/Satin/ Clear	1963

Original “in use” lights are wall mounted to the corner of the laboratory alcoves in the corridor.

First-floor corridor of Building 221.

FEATURE	MATERIAL	FINISH	DATE
Lighting	Aluminum/ Plastic	Painted/Textured	1963

Original, rectangular aluminum lighting frames are mounted within the pan ceiling system. The ballasts and bulbs are all modern replacements.

First-floor corridor of Building 220.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Grille	Anodized Aluminum	Satin	1963

Extruded aluminum grilles are located at the narrow-end corridors of each GPL, specifically in the structural facing tile walls. The aluminum frame is proud of the plaster wall.

Third-floor corridor of Building 220.

FEATURE	MATERIAL	FINISH	DATE
Grille	Steel	Baked Enamel	1963

Steel grilles are located above all office and laboratory doors along the corridor.

Third-floor corridor of Building 224.

FEATURE	MATERIAL	FINISH	DATE
Ceiling Diffuser	Anodized Aluminum	Satin	1963

Aluminum ceiling diffusers are located within the pan ceiling system.

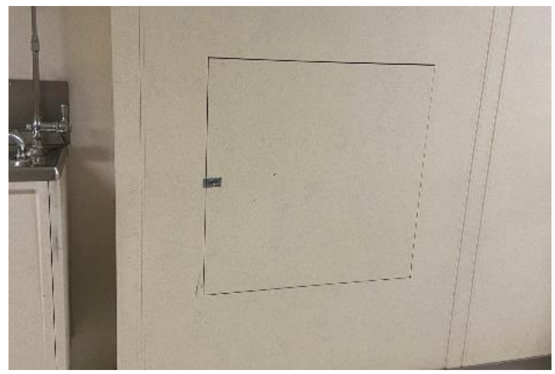
Third-floor corridor of Building 223.

FEATURE	MATERIAL	FINISH	DATE
Ceiling Diffuser	Aluminum	Painted	1963

Perforated aluminum ceiling diffusers are located within the pan ceiling system.

Third-floor corridor of Building 220.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Fire Extinguisher Cabinet	Steel/Glass	Baked Enamel/Clear	1963	 *Third-floor corridor of Building 223.*
Baked enamel steel extinguisher cabinets are recessed into the matching backed enamel steel partitions of the corridors. Original lettering has been removed and replaced with high-visibility signage.				
Utility Cabinet	Steel	Baked Enamel	1963	 *Third-floor corridor of Building 223.*
Utility cabinets are flush within the baked enamel steel partitions.				
Safety Shower	Steel	Satin	1963	 *Third-floor corridor of Building 224.*
Original vertical safety stations with drench shower heads and hand activation handles are located outside of laboratory spaces. Select stations have had original shower heads replaced with orange plastic versions.				

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Drinking Fountain	Aluminum/ Stainless Steel	Satin/Satin	1963

Original drinking fountains and cabinets are mounted within alcoves at the narrow ends of the corridors. The manufacturer is Halsey Taylor.

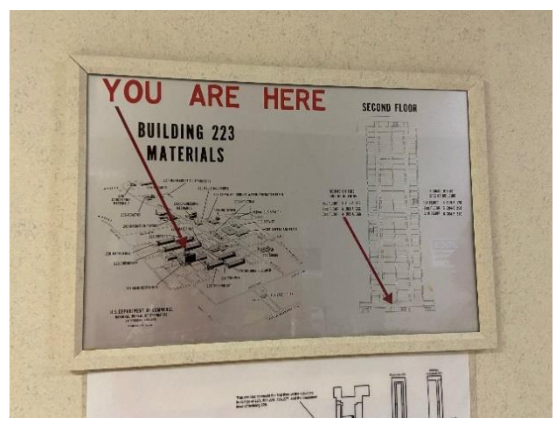
PHOTO

Third-floor corridor of Building 221.

FEATURE	MATERIAL	FINISH	DATE
Signage	Steel/Glass	Painted/Clear	1963

Original, steel-framed signage is located across from the stairwell and elevators of the corridors. The locator map retains NIST’s original name, the National Bureau of Standards.

All corridors in GPL buildings 220, 223, and 226 retain their original signage.



Second-floor corridor of Building 223.

Special Corridors: Building 222

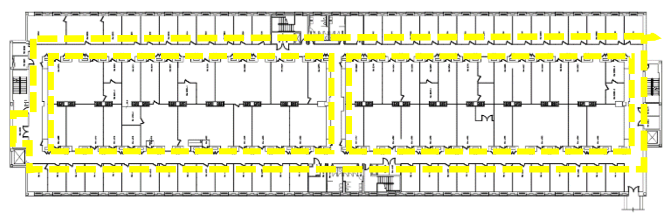
The corridors allow circulation among the offices, laboratories, kitchen, mail room, and break room of each floor of the General Purpose Laboratories (GPL). Two long corridors divide the interior laboratory spaces from the offices located on either side. Additionally, three short passages connect the two main corridors—one at the west end, one at the east, and one at the center of the building.

Building 222 is an exception to all other GPLs in that a majority of its original corridor walls were replaced with gypsum board. Nearly all of the corridors' original baked enamel steel panels with baked enamel steel bases have been removed in recent modernizations. The modular partitions enabled flexible spaces as programming needs of the department changed. Entrances to the labs remain recessed from the corridor and are articulated via alcoves clad in baked enamel steel partitions. Though a majority of the corridor walls feature non-historic materials, the replacement gypsum board walls were installed within the original design footprint. Other original finish materials include steel doors and lab safety equipment, structural facing tile, and smaller aluminum or steel vents.

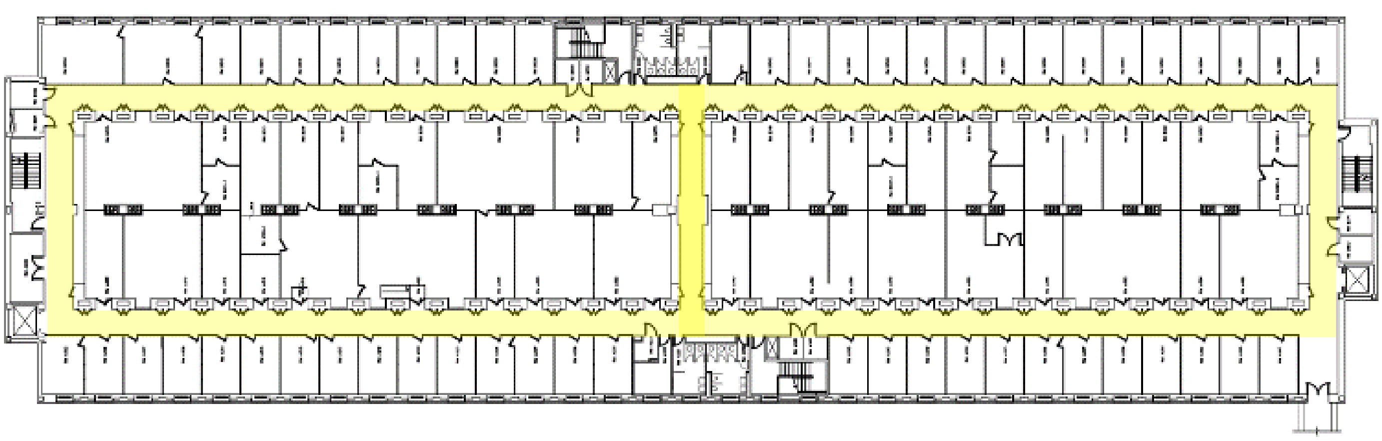
Corridor spaces in Building 222 include C0-A-1, C0-B-1, C0-C-1, C0-E-1, C0-W-1, C0-A-2, C0-B-2, C0-C-2, C0-E-2, C0-W-2, C0-A-3, C0-B-3, C0-C-3, C0-E-3, and C0-W-3.

Second-floor corridor of Building 222.

Location Plan (NTS)



Key Plan (NTS)



Special Corridors: Building 222

FEATURE	MATERIAL	FINISH	DATE
Wall	Structural Facing Tile	Glazed	1963
Base	Structural Facing Tile - Coved	Glazed	1963

Structural facing tiles are located at either end of the long main corridors and feature matching, coved base tiles. The original structural facing tile was painted with a textured finish.

The breakrooms are similarly clad with structural facing tile. The space matches the corridor in finishes as it functions as an extension of the building's circulatory structure. Like the tiles in the corridors, they were painted with a textured finish and no longer convey their original design intent.

PHOTO

First-floor corridor of Building 222.

First-floor corridor of Building 222. All original structural tiles have been coated with a modern, textured finish.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf with Lite	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, hollow metal doors lead into the two stairwells of each floor. The single square lite is set with wire glass and accompanied with an aluminum push bar and kick plate.

First-floor corridor of Building 222.

Special Corridors: Building 222

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, hollow metal doors lead from the corridor to utilitarian spaces, such as the original janitor's and storage closets. Hollow metal doors feature steel frames and aluminum deadbolt and knob hardware.

PHOTO

Second-floor corridor of Building 222.

Second-floor corridor of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf with Louvers	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Hollow metal doors with louvered vents are found at the original telephone and mechanical closets adjacent the men and women's restrooms. The louvered openings are set below the door's midline. Original hardware includes aluminum door knobs, deadbolts, and butt hinges. Door knobs have been replaced with lever handles on some doors.

Second-floor corridor of Building 222

Special Corridors: Building 222

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf with Lite	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

This door type is located in all buildings and leads to the concourse between GPLs. The double-leaf door is comprised of hollow metal, a steel frame, aluminum pulls, and a small, rectangular lite.

First-floor corridor of Building 222.

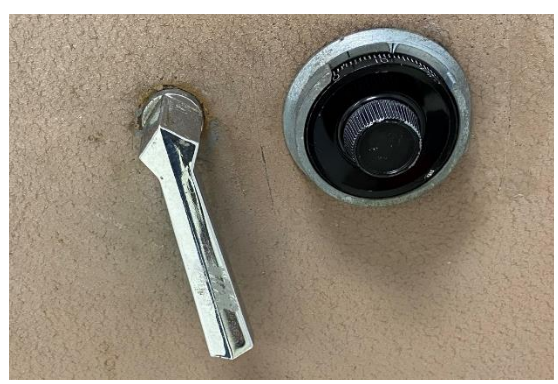
FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Aluminum	Polished	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

This door type is found at the Receiving Room entrance on the first floor of the GPLs. The polished aluminum double doors have simple push plates and a steel frame.

First-floor corridor of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Steel	Textured Baked Enamel	1963
Frame	Steel	Textured Baked Enamel	1963
Hardware	Steel	Chrome	1963

A double-leaf, steel insulated vault door is located on the first-floor corridor of Building 222. The manufacturer of the vault door is Schwab Corporation and bears the label Underwriters' Laboratories, Inc, 2 HR Fire Classification, No. 74845.



First-floor corridor of Building 222.

General Corridors: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Wall-Mounted Light Fixture	Steel/Aluminum/ Glass	Painted/Satin/ Clear	1963

Original “in use” lights are mounted to the corner of the laboratory alcoves in the corridor.

First-floor corridor of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Grille	Anodized Aluminum	Satin	1963

Extruded aluminum grilles are located at the narrow-end corridors of each GPL, specifically in the structural facing tile walls. The aluminum frame is proud of the plaster wall.

Third-floor corridor of Building 222.

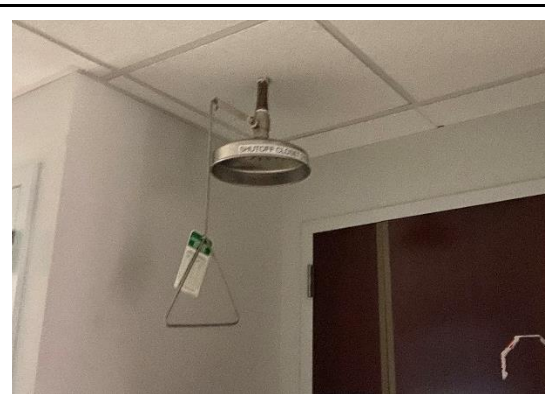
FEATURE	MATERIAL	FINISH	DATE
Grille	Steel	Baked Enamel	1963

Steel grilles are located at either ends of the long corridors within the walls clad in structural facing tile.

First-floor corridor of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Safety Shower	Steel	Satin	1963

Original vertical safety stations with drench shower heads and hand activation handles are located outside of laboratory spaces. Select stations have had original shower heads replaced with orange plastic versions.



First-floor corridor of Building 222.

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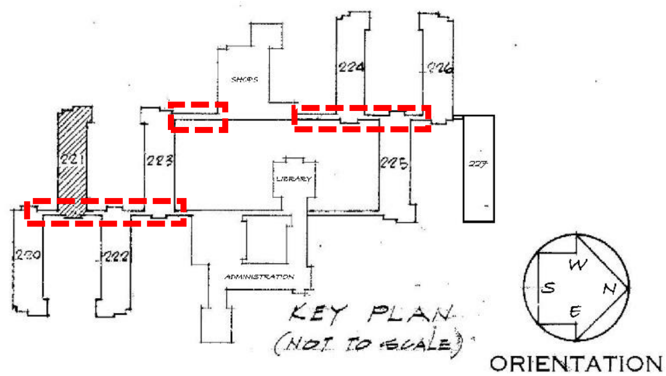
General Concourses: Buildings 220, 221, 223, 224, 225, 226

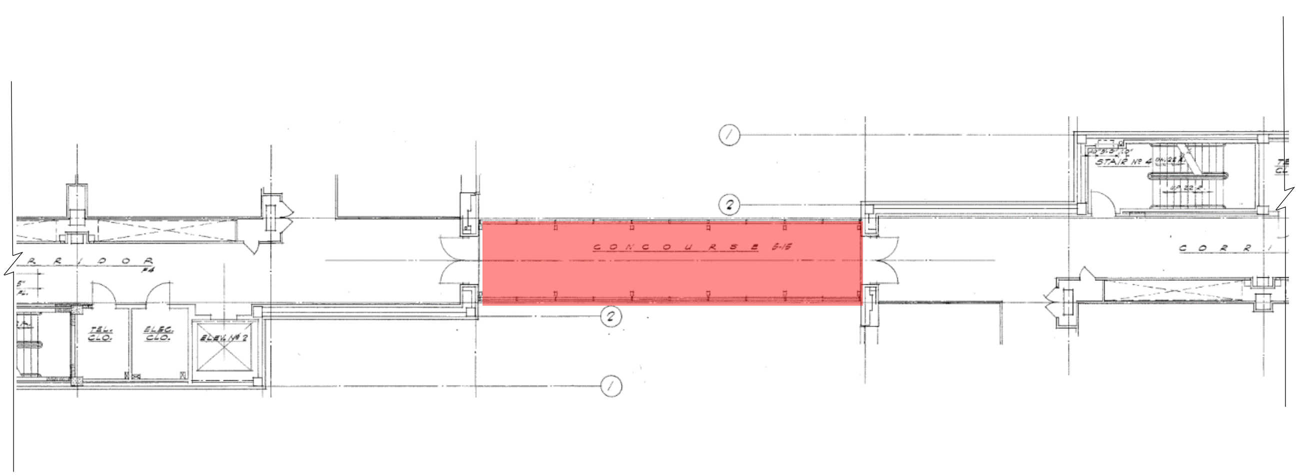
The concourses allow circulation between each building of the General Purpose Laboratories (GPL). Some concourses consist of multiple levels, while others only have one. The concourse which connects Buildings 220, 221, 222, 223, and 101 runs continuously at the second level, and the concourse which connects Buildings 224, 225, and 226 is continuous at the first, second, and third levels. Aluminum-and-glass curtain walls are typical at the east and west walls of concourses. At ground level, aluminum double-leaf doors are installed within the curtain wall construction. Where concourses have a basement level, one or both walls may be clad in structural facing tile or glazed brick. Glazed brick also spans the east and west walls of concourses with steel double-leaf doors at either end. Other original interior finish materials are utilitarian and hardwearing, including perforated aluminum acoustical tiles and vinyl asbestos floors. Finish materials at all concourses are original, excluding the concourse between Buildings 225 and 226.

Concourses include: 101-223, 220-221, 221-222, 222-223, 223-304, 304-224, 224-225, 225-226

Location Plan (NTS)



Key Plan (NTS)



General Concourses: Buildings 220, 221, 223, 224, 225, 226

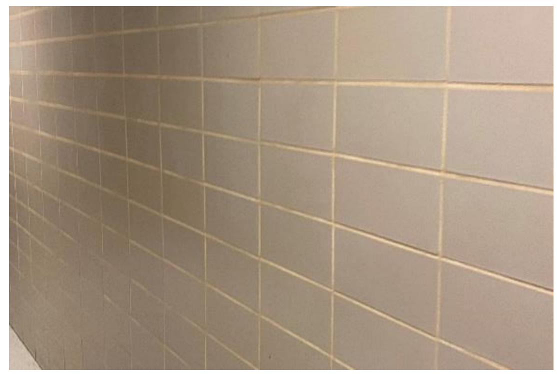
FEATURE	MATERIAL	FINISH	DATE
Ceiling Tiles	Perforated Aluminum	Painted	1963

The entirety of the concourse’s ceiling consists of perforated aluminum acoustical tiles within a concealed, metal-pan system. Square aluminum acoustical tiles are either 12” x 12” or 24” x 12” and have a factory finish with round holes. Some tiles within the ceiling are discolored and indicate where a tile may have been replaced. Corrosion is present at some locations.

Ceiling at Concourse 220-221.

FEATURE	MATERIAL	FINISH	DATE
Wall	Structural Facing Tile	Glazed	1963

Only the concourse between the basement levels of Buildings 220 and 221 features structural facing tile in “grey twilight satin” opaque glaze. This is illustrated in the original construction drawings.

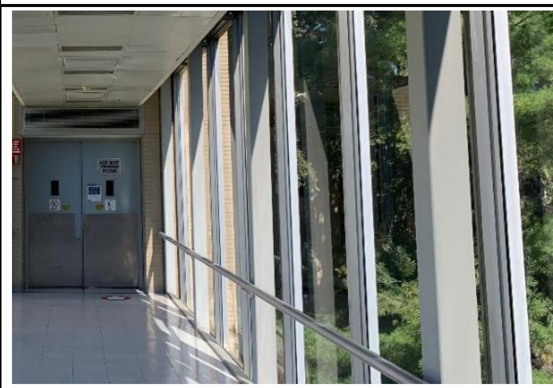


Wall at Concourse 220-221.

FEATURE	MATERIAL	FINISH	DATE
Curtain Wall	Glass/Anodized Aluminum	Tinted Plate/ Natural Fine Satin	1963
Curtain Wall	Glass/Aluminum	Tinted/ Dark	2003
Column	Tubular Steel	Painted	1963
Handrail	Anodized Aluminum	Natural Fine Satin	1963

Exterior walls at concourses are typically aluminum-and-glass curtain walls. Where curtain walls extend to ground level, a double-leaf exit door is installed at the center of the wall (see doors). The aluminum mullions are natural fine satin finish, except for the concourse running between Buildings 225 and 226, which features a renovated curtain wall with dark-finished aluminum and panels covering the lower third of each floor.

Concourses are structurally supported by tubular steel columns placed every 10 feet along the north and south edges. An aluminum railing is connected to the columns and runs the entirety of each concourse.



Curtain Wall at Concourse 224-225.

Curtain Wall at Concourse 225-226.

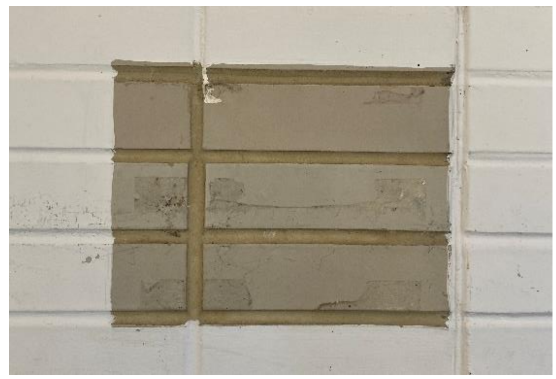
General Concourses: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Wall	Face Brick	Exposed	1963
Wall	Brick	Glazed	1963

Face brick is present along all east and west walls of corridors. The original exposed finish is present in the concourse between Buildings 304 and 224 but has since been painted at all other locations. At the ground level of this concourse, the east wall is clad in glazed brick. Though this material is original, it has since been painted.

PHOTO

Face Brick at Concourse 304-224.



Glazed Brick at Concourse 304-224.

FEATURE	MATERIAL	FINISH	DATE
Floor	Vinyl Tile	N/A	1963
Base	Vinyl	N/A	1963

The floor material at all concourses is 9x9 vinyl asbestos tile. Black vinyl wall base surrounds the perimeter of concourses. There is minimal evidence of replacement and the design retains its original intent.

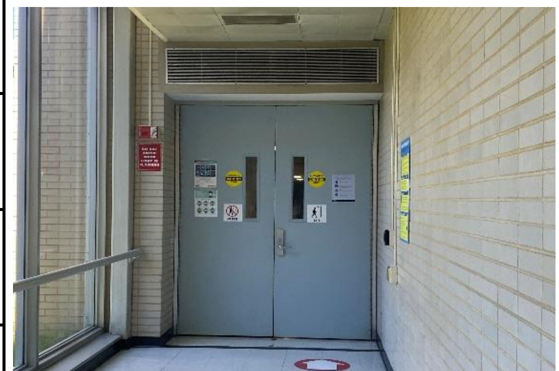
Floor and Base at Concourse 223-304.

General Concourses: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Door - Double Leaf with Lite	Steel/ Glass	Baked Enamel/ Clear	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Baked-enamel double-leaf doors with a single lite are consistently found at either end of each concourse Door lites vary in dimension. A steel plate is covers the bottom half of some of these doors. Door frame and hardware are also original.

PHOTO



Original Door at Concourse 304-224.

Original Door at Concourse 221-222.

FEATURE	MATERIAL	FINISH	DATE
Lighting	Aluminum/ Plastic	Painted/Smooth	1963

Original lighting frames in most concourses are a square, recessed fixture which is installed into the 12” x 12” ceiling grid. The bulbs, ballasts, and plastic enclosures are modern replacements.

Light fixture at Concourse 222-223.

FEATURE	MATERIAL	FINISH	DATE
Lighting	Aluminum/ Plastic	Painted/ Textured	1963

Light fixtures in the concourse between Buildings 304 and 224 follow the dimensions outlined in the original construction drawings, yet are identical in style to those in the concourse between 101 and 223, suggesting that these may be replacements. It is likely that the lighting frames are original and the bulbs, ballasts, and plastic enclosures are modern replacements.

Light fixture at Concourse 304-224.

General Concourses: Buildings 220, 221, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Grille	Anodized Aluminum	Natural Fine Satin	1963

An extruded aluminum grille is set above each door, though in some instances it has been removed.

Grille at Concourse 221-222.

FEATURE	MATERIAL	FINISH	DATE
Radiator Enclosure	Anodized Aluminum	Natural Fine Satin	1963

Aluminum radiator enclosures are installed between the curtain wall and steel columns and run the entire length of each concourse.

Radiator enclosure at Concourse 223-304.

FEATURE	MATERIAL	FINISH	DATE
Perforated Air Diffuser	Aluminum	Painted	1963

Original construction drawings illustrate the perforated aluminum diffuser grilles which are installed within the ceiling grid. Corrosion is present at some locations.

Air Diffuser at Concourse 220-221.

FEATURE	MATERIAL	FINISH	DATE
Thermostat	Aluminum	Satin	1963

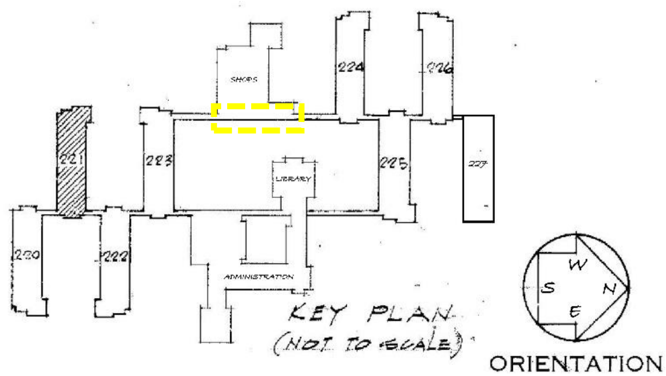
Original thermostats are present in many concourses. Evidence of corrosion is visible.

Thermostat at Concourse 101-223.

Enclosed Concourse: 223-Shops 304

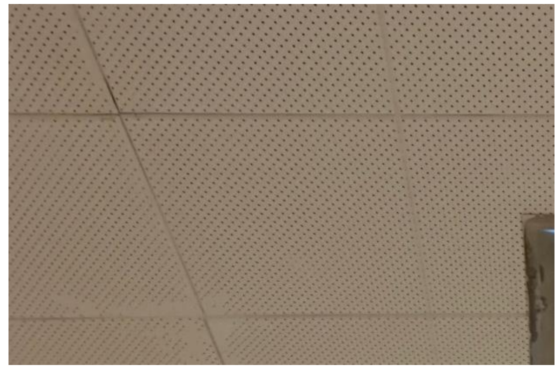
The enclosed concourse is a continuation of the glass curtain wall concourse which allow circulation between each building of the General Purpose Laboratories (GPL). The enclosed concourse connects GPL Building 223 to the Shops 304 Building and consists of similar materials found in the corridors. The materials are utilitarian and hard-wearing, including structural facing tile, perforated aluminum acoustical tiles, and vinyl asbestos tile.

Location Plan (NTS)



Key Plan (NTS)

Corridor Tunnel: 223-Shops 304

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Ceiling Tiles	Perforated Aluminum	Factory Finish	1963	

The entirety of the enclosed concourse’s ceiling consists of perforated aluminum acoustical tiles within a concealed, metal-pan system. A majority of the ceiling tiles are 9 “x 12” with 6” x 12” tiles in select areas. The aluminum acoustical tiles have a factory finish and round holes.

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Wall	Structural Facing Tile	Glazed	1963	
Base	Structural Facing Tile-Coved	Glazed	1963	

Arketex structural facing tiles in Twilight Gray Satin are located along the entirety of the enclosed concourse with matching, coved base tiles.

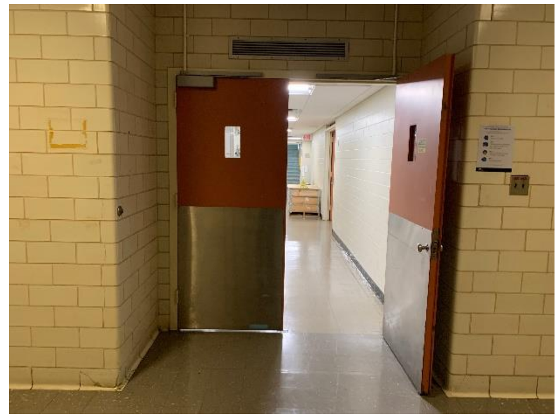
FEATURE	MATERIAL	FINISH	DATE	PHOTO
Floor	Vinyl Asbestos Tile	N/A	1963	

The enclosed concourse’s floor is clad in vinyl asbestos tiles measuring 9” x 9” x 1/8”.

Corridor Tunnel: 223-Shops 304

FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf, Single-Lite	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Double-leaf, single-lite doors are located at the midpoints of the enclosed concourse. Original hardware includes aluminum door knobs, pulls, butt hinges, double-action spring-loaded hinges, and large kick plates.

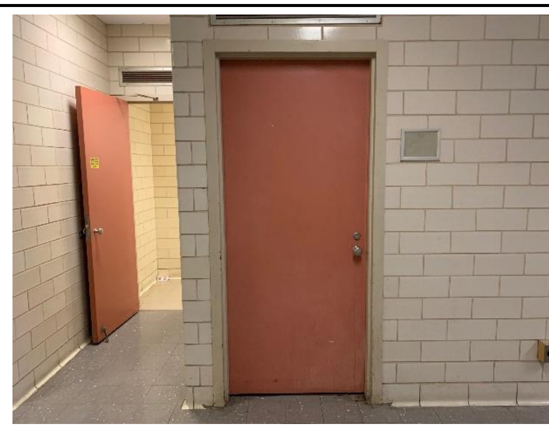


FEATURE	MATERIAL	FINISH	DATE
Door – Double-Leaf	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Double-leaf doors are located at the midpoints of the enclosed concourse. Original hardware includes aluminum door knobs, deadbolts, and butt hinges.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf	Hollow Metal	Painted	1963
Frame	Steel	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, hollow metal doors lead from the corridor tunnel to restrooms and private office spaces. The hollow metal doors feature steel frames and aluminum knobs, deadbolts, and butt hinges.



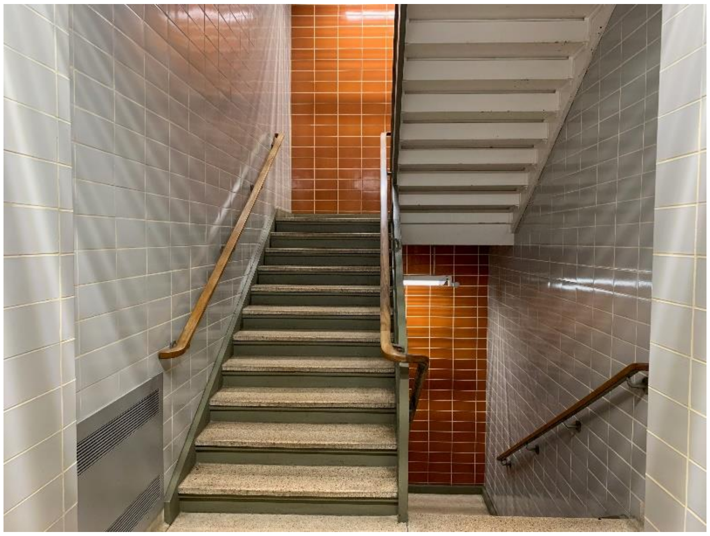
Corridor Tunnel: 223-Shops 304

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Lighting	Aluminum/ Plastic	Painted/Textured	1963	
Original, rectangular and recessed florescent lighting is mounted within the pan ceiling system.				
Ceiling Diffuser	Anodized Aluminum	Satin	1963	
Anodized aluminum ceiling diffusers regularly punctuate the ceiling, alternating between lighting fixtures.				
Grille	Anodized Aluminum	Satin	1963	
Extruded aluminum grilles are located above select doors throughout the enclosed concourse. The aluminum frame is proud of the structural facing tile wall.				

Stair Halls: 220, 221, 222, 223, 224, 225, 226

The stair halls of the General Purpose Laboratory (GPL) are located at each of the narrow ends of the buildings and two at the midpoints of the building. These enclosed stair halls run all the way from the basement level to the attic level and provide circulation between floors, concourses, and the exterior of the buildings at select areas. The typical layout of the building includes one stair hall at each end of the building where one provides access directly from the lobby to the upper floors. The stair hall at the opposite end provides access directly from the exterior to the upper floors and concourses between the GPLs. All stairs demonstrate a uniform configuration and are united by a common material palette. All walls are clad with the original structural facing tiles in orange and blue-grey, and the floors feature terrazzo in a similar color palette with a terrazzo base and steel base at the stair treads and risers. Other original finishes include the oak handrails, steel railing and balustrade, and steel registers and fire extinguisher cabinets.

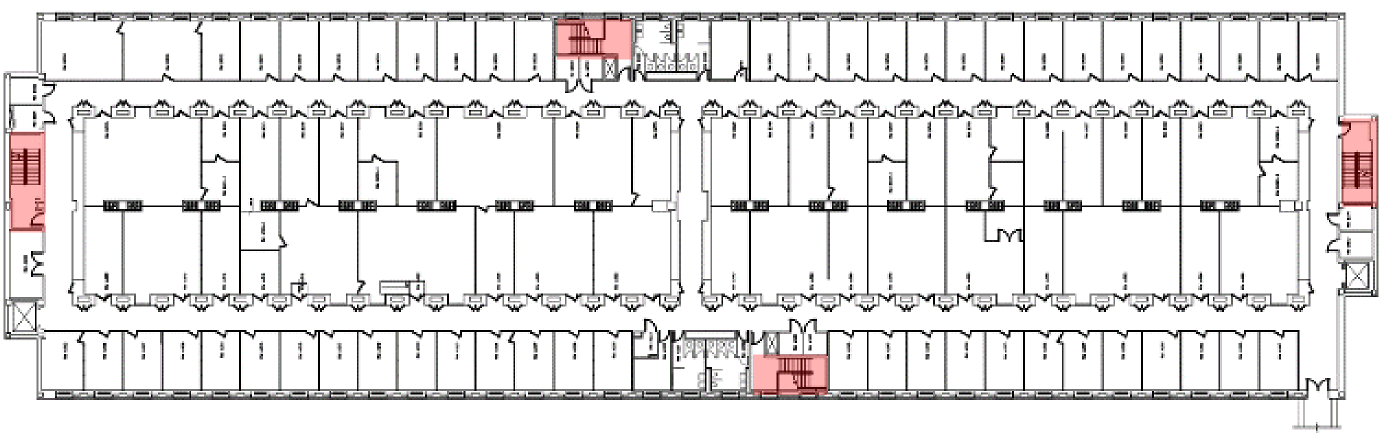
Stair hall rooms include ST-1-1, ST-2-1, ST-3-1, ST-4-1, ST-1-2, ST-2-2, ST-3-2, ST-4-2, ST-1-3, ST-2-3, ST-3-3, and ST-4-3 of each GPL.



Third-floor stair hall of Building 226.

Location Plan (NTS)

Key Plan (NTS)

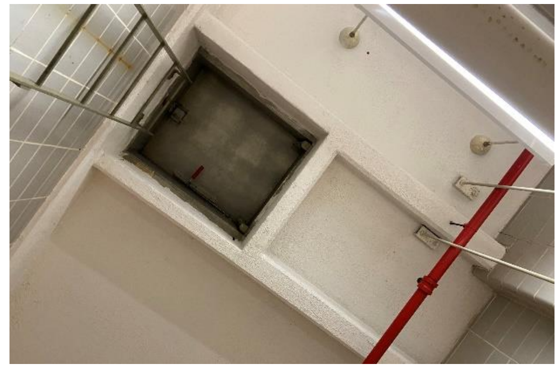


Stair Halls: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Plaster	Painted	1963

Ceilings in all stair halls are painted plaster. This occasionally, but not always, includes stringers and soffits of the stairs themselves.

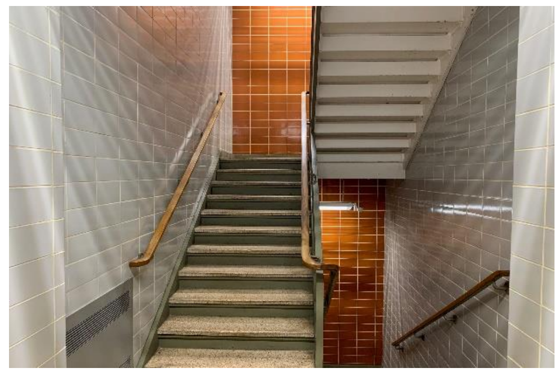
PHOTO



Third-floor stair hall of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Walls	Structural Facing Tile	Glazed	1963
Base	Terrazzo	Polished	1963
Base	Steel	Painted	1963

The wall finish for all stair halls is structural facing tile with a terrazzo base. At the stair treads and risers the base is painted steel.



Third-floor stair hall of Building 226.

Third-floor stair hall of Building 226.

FEATURE	MATERIAL	FINISH	DATE
Floor	Terrazzo	Polished	1963

Polished terrazzo flooring consists of red, pink, yellow, cream, gray, and gray-green chips in off-white cement.

Second-floor stair hall of Building 220.

Stair Halls: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Single-Leaf	Hollow Metal	Painted	1963	 *Third-floor stair hall of Building 224.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Satin	1963	
Single-leaf, hollow metal doors lead from the top of the stair hall to the attic. The simple door features original aluminum hardware with a satin finish.				
Door – Single-Leaf with Lite	Hollow Metal	Painted	1963	 *Corridor entrance to third-floor stair hall of Building 220.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Satin	1963	
Single-leaf, hollow metal doors lead into the two stairwells of each floor. The single square lite is set with wire glass and accompanied with an aluminum push bar and kick plate.				
Radiator Cover	Aluminum	Satin	1963	 *Third-floor stair hall of Building 220.*
Extruded aluminum radiator covers are located at each level of the stair halls. The aluminum is proud of the structural-facing-tile-clad wall.				
Utility Cabinet	Aluminum	Satin	1963	 *Third-floor stair hall of Building 221.*
Utility cabinets are located above the fire hydrant alcoves and are proud of the structural-facing-tile-clad wall.				

Stair Halls: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Railing	Oak/Steel	Clear Lacquer/Painted	1963
Handrail	Oak/Steel	Clear Lacquer/Painted	1963
Tread	Terrazzo	Polished	1963
Riser	Steel	Painted	1963

The staircase railing is oak with a clear lacquered finish. Steel arms attach the wood railing to a steel railing with steel, square balusters. At the foot of the bottom flight and the head of the top flight, the single wood piece doubles back and terminates at one of the steel balusters.

The handrail is oak with a clear lacquered finish. The oak handrail is mounted on a steel rail with three evenly-spaced arms that attach to the wall at circular steel plates.

The treads and risers of the staircase consist of polished terrazzo with painted steel.

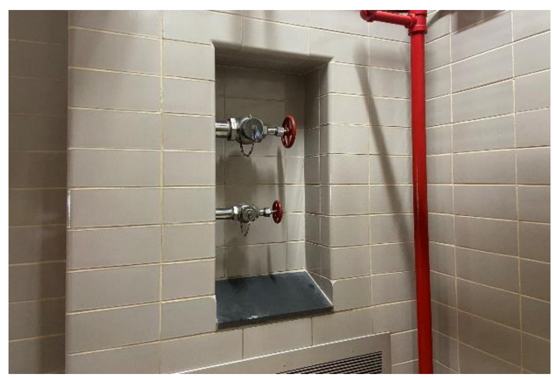
PHOTO

Second-floor stair hall of Building 222.

Second-floor stair hall of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Alcove	Structural Facing Tile	Glazed	1963
Base	Slate	Honed	1963

Fire hydrant alcoves are located on each level of the stair halls and includes walls clad similarly in structural facing tile. The bottom of the alcove has a sloped slate floor.



Third-floor of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Thermostat	Aluminum	Satin	1963

Original thermostats are mounted within the stair halls. The manufacturer is Honeywell.

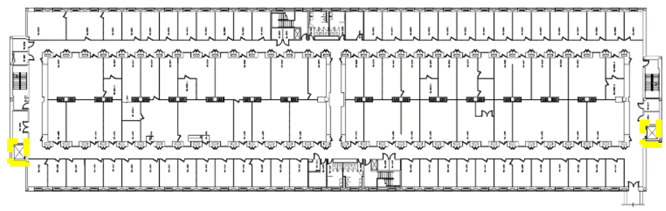
Third-floor of Building 222.

Elevators: Buildings 220, 221, 222, 223, 224, 225, 226

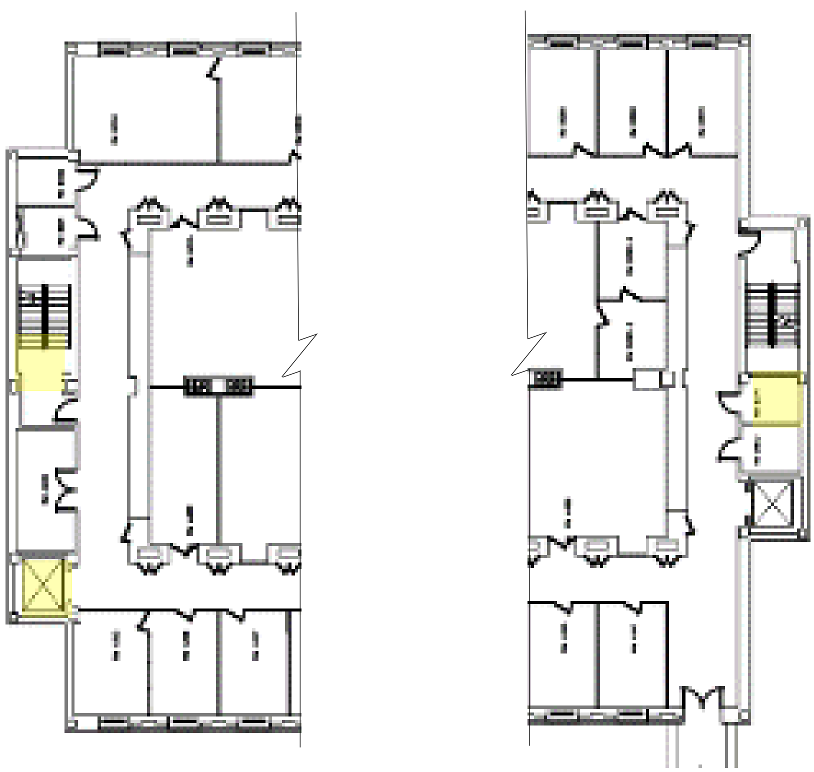
All General Purpose Laboratory (GPL) buildings have two elevators per floor, one located at each end of the corridor. Most elevators run from the lowest basement level to the upper-most attic or penthouse level. Elevator doors are all automatic, but range from center-opening doors to two-speed center-opening telescopic doors. Each have a variety of finishes but have remained mostly unchanged. Installation of the elevators at either end of the building assists in the circulation between floors.

Elevator spaces include: EL-1-0—EL-4-0; EL-1-1—EL-2-1; EL-1-2—EL-2-2, EL-1-3— EL-2-3 in all of the GPL Buildings,

Location Plan (NTS)



Key Plan (NTS)



Elevators: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Stainless Steel Panels	Satin	1963

Elevator ceilings are clad in satin, stainless steel panels.

FEATURE	MATERIAL	FINISH	DATE
Walls	Porcelain Enamel	Smooth	1963
Walls	Stainless Steel	Satin	1963
Base	Stainless Steel	Satin	1963

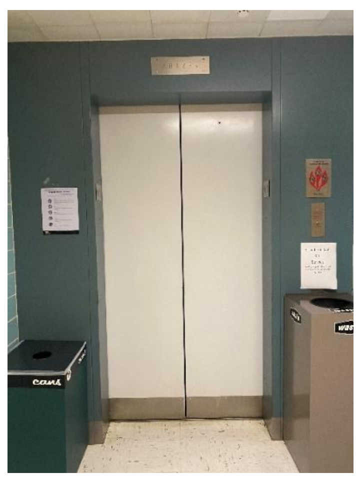
Elevator cabs walls are clad in porcelain enamel which exists beneath later laminate finishes. Panels are sealed with stainless steel battens. About midway down the walls is a stainless steel handrail. The base of the walls are stainless steel vents.

FEATURE	MATERIAL	FINISH	DATE
Floor	Vinyl Asbestos Tile	Smooth	1963

The floors of the original cabs are clad in a vinyl asbestos tile.

FEATURE	MATERIAL	FINISH	DATE
Door	Stainless Steel	Painted	1963

Although all elevators are automatic, door configurations vary. Some elevator doors are center-opening doors. These doors have two panels that meet in the middle and slide open laterally. These center-opening doors also have a variety of finishes including painted and satin metal.



Elevators: Buildings 220, 221, 222, 223, 224, 225, 226

<table>
<tr><th>FEATURE</th><th>MATERIAL</th><th>FINISH</th><th>DATE</th><th>PHOTO</th></tr>
<tr><td>Door</td><td>Stainless Steel</td><td>Painted</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">The disadvantage to the center opening doors is the inability to use the opening to the fullest. To combat this, some of the elevator doors are two-speed, center-opening telescopic doors. With this kind of door, the panels run on independent tracks so they can tuck behind one another allowing for a larger opening. Like the center opening doors, these have a variety of finishes which include painted and satin metal.</td></tr>
<tr><td>Door Frame</td><td>Stainless Steel</td><td>Painted</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">Regardless of the door configuration, each elevator opening is framed with a stainless steel frame that is painted to match either the color of the wall that surrounds the elevator, or the elevator doors.</td></tr>
<tr><td>Lighting</td><td>Lateral Perimeter</td><td>Aluminum Frame</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">Skyward-facing, lateral lighting tracks the perimeter of the interior of the cab approximately 10 inches below the ceiling. This lowered placement allows for light to reflect off of the stainless steel above it.</td></tr>
<tr><td>Floor Medallion</td><td>Stainless Steel</td><td>Polished</td><td>1963</td><td rowspan="2"></td></tr>
<tr><td colspan="4">In the center of the cab is a stainless steel medallion with the Haughton Elevator Company’s logo.</td></tr>
</table>

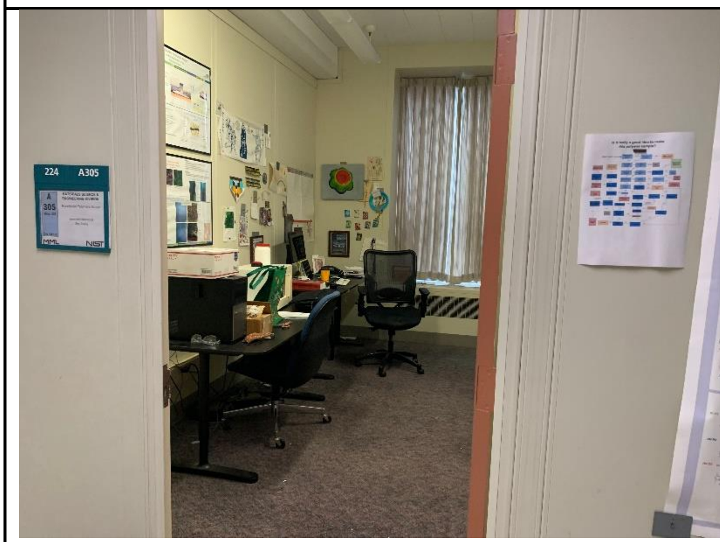
Elevators: Buildings 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Floor Indicators	Aluminum	Satin	1963	
Corridor-facing floor indicators are aluminum plates located above the elevator door. These indicators display the current location of the cab by lighting up the stenciled cut numbers that have been cut into the plate.				
Floor Signs	Aluminum	Satin	1963	
Aluminum floor signs are installed on the inside of the elevator door frames so riders are assured they are exiting the elevator on the correct floor.				

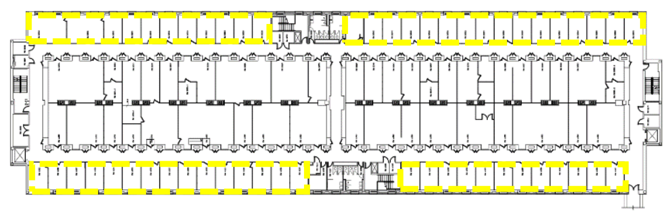
General Offices: 220, 221, 222, 223, 224, 225, 226

General office spaces are predominantly located around the perimeter of each floor, whereas the lab spaces are located in the center. Office and lab doors are staggered to control the light exposure from windows in the office space. The walls are baked enamel modular partitions that slide on ceiling tracks and can be adjusted to meet the needs of a particular office. There are offices that have had minor changes made since their original appearance, but several fixtures remain in their original state like the acoustic tile ceilings, suspended lighting, window and window sills, and the baked enamel steel panel walls.

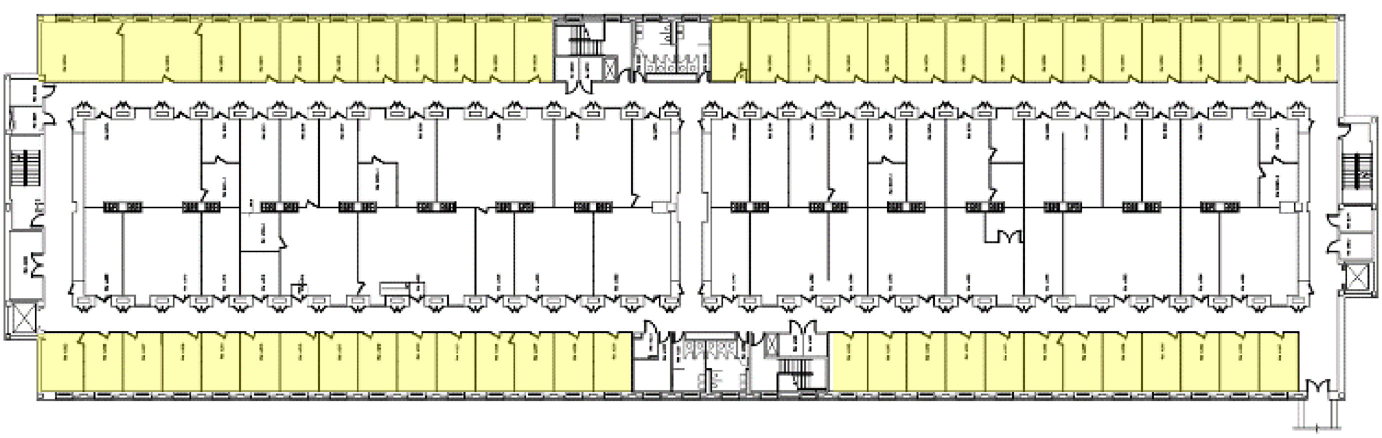
Offices spaces include: Building 220: A303 - A367 (odd), B304 - B370 (even), A203 - A267 (odd), B204 - B270 (even), B104 - B170 (even), A105 - A167 (odd); Building 221: A303 - A367 (odd), B304 - B368 (even), A203 - A267 (odd), B204 - B268 (even), B102 - B168 (even), A103 - A167 (odd), A03 - A65 (odd), B04 - B68 (even); Building 222: A303 - A367 (odd), B304 - B368 (even), A203 - A267 (odd), B204 - B268 (even), B101 - B102, A103 - A167 (odd), B106 - B168 (even); Building 223: A303 - A367 (odd), B304 - B370 (even), A203 - A267 (odd), B204 - B268 (even), B106 - B170 (even), A107 - A167 (odd); Building 224: A303 - A359 (odd), B304 - B368 (even), A203 - A269 (odd), B204 - B268 (even), A103 - A167 (odd), B108 - B168 (even); Building 225: A303 - A369 (odd), B304 - B370 (even), A203 - A267 (odd), B204 - B268 (even); A03-A67 (odd); B04-B68 (even); Building 226: B304-B370 (even), A303-A367 (odd), B204-B268 (even), A203, B104-B168 (even).



Location Plan (NTS)



Key Plan (NTS)



General Offices: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Perforated Aluminum	Factory Finish	1963

The office ceilings consist of perforated aluminum acoustical tiles within a concealed, metal-pan system. A majority of the ceiling tiles are 9 “x 12” with 6” x 12” tiles in select areas. The aluminum acoustical tiles have a factory finish and round holes.

Select areas, such as the kitchenettes, mailrooms, or department offices, have replaced these with older tiles with drop ceilings.

Third-floor office of Building 226.

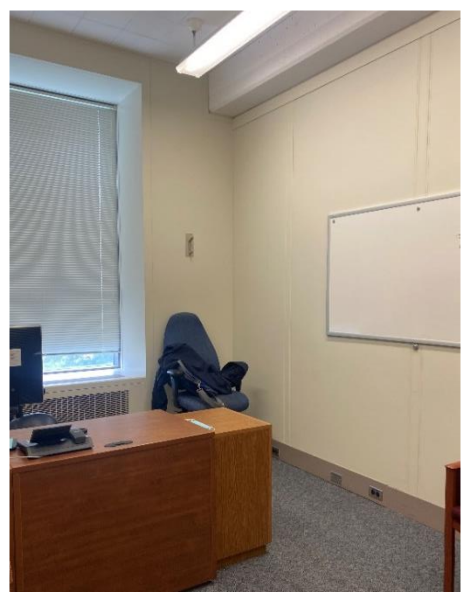
FEATURE	MATERIAL	FINISH	DATE
Ceiling	Concrete	Painted	1963

Around the perimeter of the room are structural beams that are fitted with tracks for the baked enamel walls that can be Adjusted to meet office needs.

Third-floor office of Building 221.

FEATURE	MATERIAL	FINISH	DATE
Wall	Baked Enamel	Painted	1963
Base	Rubber Baseboard	Colored	1963

Corridor walls at offices consist of panels of baked enamel steel with baked enamel steel bases. The modular partitions enable flexible spaces as programming needs of the department change. Entrances to labs are recessed from the corridor and are articulated via alcoves clad in baked enamel steel partitions. In contrast, the offices, closets, and other utilitarian spaces are flush with the corridor walls.



Third-floor office of Building 221.

General Offices: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Floor	Vinyl Asbestos Tiles	Smooth	1963

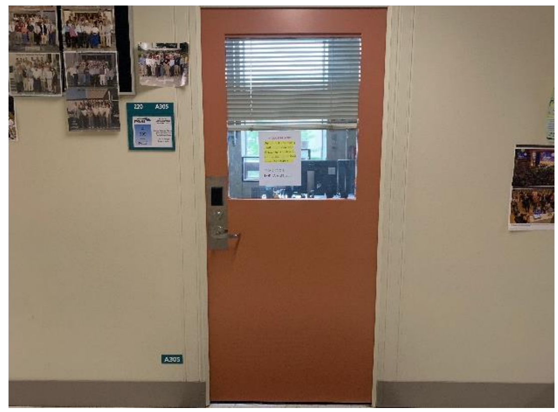
Original floors in the office spaces are clad in a vinyl asbestos tile in a variety of different colors. Some office floors have since been covered with carpeting.

Building 223 Third Floor

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf with Lite	Baked Enamel Steel	Painted	1963
Frame	Aluminum	Painted	1963
Hardware	Aluminum	Satin	1963

Single-leaf, baked-enamel steel doors with a lite are located on both the laboratory and office sides of the corridor. All doors of this type are painted a shade of orange, though only those in Building 221 have the original bright orange paint finish.

Hardware varies for this door type depending on the use and security measures. A majority of the doors retain their original aluminum deadbolt and lever hardware, however, there are examples within each building where modern, keypad deadbolts and levers have been installed.

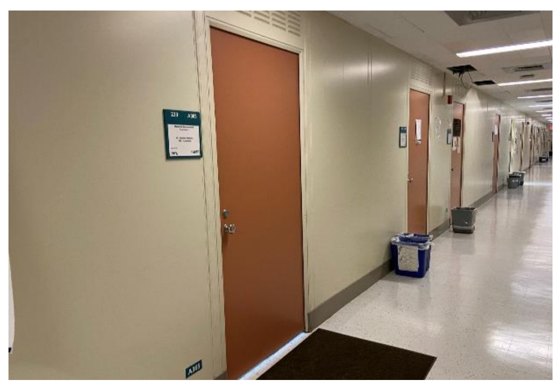


Third-floor office of Building 220.

FEATURE	MATERIAL	FINISH	DATE
Door – Single-Leaf	Baked Enamel Steel	Painted	1963
Frame	Aluminum	Painted	1963
Hardware	Aluminum	Satin	1963

Although most office doors are a single-leaf with lite, baked-enamel steel there are doors that exist without the lite. All doors of this type have retained a paint color in the shade of orange, though only those in Building 221 have the original bright orange paint finish.

Hardware varies for this door type depending on the use and security measures. A majority of the doors retain their original aluminum deadbolt and lever hardware, however, there are examples within each building where modern, keypad deadbolts and levers have been installed.



Third-floor office of Building 223.

General Offices: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Window	Glass	Clear	1963

Windows are single paned in a fixed aluminum frame.

Third-floor office of Building 223.

FEATURE	MATERIAL	FINISH	DATE
Grille	Baked Enamel	Painted	1963

Vent grilles are located above the doors in the baked enamel paneling. These vents were installed as part of the original mechanical system to control the air pressure. Outside air from the radiator cabinets would vent through the offices to the corridors which had a negative air pressure. Then, the fresh air would travel into the labs which also had negative pressure. The intent was to control the airflow so the fumes from the labs never circulated into the offices.

Third-floor office of Building 223.

FEATURE	MATERIAL	FINISH	DATE
Radiator Cabinet	Baked Enamel	Painted	1963

At the sill of the windows are painted radiator cabinets.

Third-floor office of Building 224.

FEATURE	MATERIAL	FINISH	DATE
Analog Clock	Plastic	Painted	1963

Wall-mounted wall clocks made by Standard are in every office just above the door transom vents. The plastic framing is painted gray.

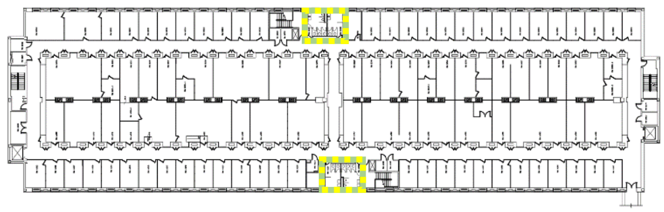
Third-floor office of Building 223.

Bathrooms: 220, 221, 222, 223, 224, 225, 226

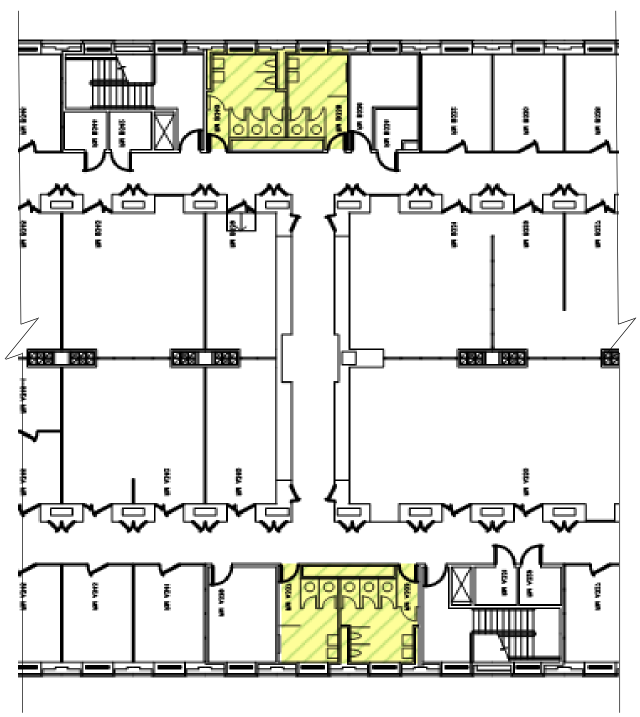
Bathroom entrances are located midway down the corridors facing the middle passage. Most buildings have two bathrooms per floor unless space was eliminated to accommodate additional lab space. Each maintain a consistent appearance, and have remained mostly unchanged since 1963. Although not common, a few bathroom spaces feature a separate dressing room such as B136 (220/221/224) and A235 (223).

Bathroom spaces include: Building 220: B334-B338 (even), A337-A339 (odd), B236-B238 (even), A237-A239 (odd), B136 (dressing room), 138-B140 (even), A137, B34-B38 (even), A37-A39 (odd); Building 221: A333-A337 (odd), B338-B340 (even), A233-A237 (odd); B238-B240 (even), B136 (dressing room), 138-B140 (even), A137, A33-A37 (odd), B38-B40 (even); Building 222: B338, A333, B238, A235-A237 (odd); Building 223: B334-B338 (even), A337-A339 (odd), B234-B238 (even), A237-A239 (odd), A235 (dressing room), B134-B136 (even), A137; Building 224: B338-B340 (even); A337-A333 (odd), B238-B240 (even); A237-A233 (odd); B138-B140 (even); A137; B136 (dressing room); Building 225: A337-A339 (odd), B336-B338 (even), A237-A239 (odd), B236-B238 (even), A37-A39 (even), B36-B38 (even); Building 226: B336, B334, B236, B234, B136, B134

Location Plan (NTS)



Key Plan (NTS)



Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Ceiling	Plaster	Painted	1963

The entirety of the bathroom ceiling is plastered with a white paint finish.

Third-floor bathroom of Building 222.

FEATURE	MATERIAL	FINISH	DATE
Walls	Ceramic Tile	Glazed	1963
Base	Ceramic Tile	Glazed	1963

Ceramic tiles clad the bathroom walls as well as make up the wall base.

Third-floor bathroom of Building 224.

FEATURE	MATERIAL	FINISH	DATE
Walls	Plaster	Painted	1963
Base	Rubber Baseboard	Smooth	1963

Some of the bathrooms feature a dressing room. Walls in the dressing rooms are plastered and painted from floor to ceiling. Around the base is a black rubber baseboard.

First-floor dressing room of Building 221.

Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Floor	Ceramic Tile	Unglazed	1963	 *Third-floor bathroom of Building 224.*
The floors of the bathrooms are clad in small unglazed ceramic mosaic tile.				
Floor	Vinyl Asbestos Tiles	Smooth	1963	 *First-floor dressing room of Building 221.*
The floors of the dressing rooms are clad in a vinyl asbestos tile.				
Door – Single-Leaf	Hollow Metal	Painted	1963	 *Second-floor bathroom of Building 220.*
Frame	Steel	Painted	1963	
Hardware	Aluminum	Painted	1963	
Corridor-facing bathroom doors are painted, single-leaf hollow metal framed in painted steel and accompanied with an aluminum push and kick plate.				

Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Door – Single-Leaf	Baked Enamel	Painted	1963	 *Second-floor bathroom of Building 220.*
Frame	Baked Enamel	Painted	1963	
Hardware	Steel	Polished	1963	
Stall doors are painted baked enamel, supported by a baked enamel frame that is attached at the ceiling. Doors and frames are assembled and connected with polished steel hinges and stall latches.				
Window	Glass	Clear	1963	 *Third-floor bathroom of Building 226.*
Windows are single paned in a fixed aluminum frame that extends beyond the ceiling line. The window aligns with the exterior fenestration pattern rather than the interior ceiling heights.				
Lighting	Aluminum	Painted	1963	 *Third-floor bathroom of Building 222.*
Lighting in the bathrooms are recessed with an original, painted frame around the opening.				
Lighting	Glass	Clear	1963	 *Third-floor bathroom of Building 222.*
Surface mounted linear at mirror.				

Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Return Vent	Aluminum	Painted	1963	 Third-floor bathroom of Building 222.
Aluminum return vents are mostly located on the ceiling with a painted frame.				
Grille	Aluminum	Painted	1963	 Third-floor bathroom of Building 222.
Painted aluminum grilles are located on the ceiling adjacent to the window opening.				
Grille	Aluminum	Satin	1963	 Third-floor bathroom of Building 222.
Unpainted aluminum grilles are located on the window sill and at the base of the wall below the window.				

Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE
Radiator Cabinet	Baked Enamel	Painted	1963

At the sill of the windows in the dressing rooms are painted baked enamel radiator cabinets.

First-floor dressing room of Building 224.

FEATURE	MATERIAL	FINISH	DATE
Mirror	Glass	Clear	1963

Mirrors are attached to the walls. Most are in a chrome frame with a shelf and are frequently located above the sinks.

Third-floor bathroom of Building 226.

FEATURE	MATERIAL	FINISH	DATE
Wall Mounted Receptacle	Chrome	Smooth	1963

Long rectangular trash receptacles are mounted into the wall and usually located next to the sink(s).

Third-floor bathroom of Building 226.

Bathrooms: 220, 221, 222, 223, 224, 225, 226

FEATURE	MATERIAL	FINISH	DATE	PHOTO
Utility Access Hatch	Aluminum	Satin	1963	 Third-floor bathroom of Building 222.
Rectangular aluminum utility access hatches are located higher up on the walls.				
Stall Receptacle	Steel	Chrome	1963	 *Third-floor bathroom stall of Building 223.*
In most stalls in women's bathrooms there are steel receptacles attached to the stall wall units.				
Stall Shelf	Steel	Chrome	1963	 *Third-floor bathroom stall of Building 223.*
In most stalls in women's bathrooms there are steel pull-down shelving units attached to the stall wall units.				

SECTION D:

PRESERVATION CHALLENGES

MTFA architecture

PRESERVATION CHALLENGES AND RECOMMENDATIONS

This section summarizes existing conditions for each of the General Purpose Laboratories (GPL) that represent preservation challenges. MTFA's preservation architects and architectural conservators reviewed the existing conditions of the historic building materials to identify deficiencies common and unique across the seven buildings. The team gathered information from the historic record to understand the original architect's design intent. Then, the buildings were assessed for their condition against that design intent.

Features and materials which date to the original construction period of significance (1961-1969) provide the buildings with their character, and contribute both to their sense of history and the overall architectural experience. These elements are accordingly referred to as "character-defining features." Features and materials which are not considered significant are those that were installed after the 1963 construction or those that are neither consistent with, nor sympathetic to, their precedents.

The treatment of significant character defining features and materials, whether it be for maintenance, repair, removal, or replacement, should be carefully considered during the planning process and should focus on the preservation of the original building fabric. The treatments for features and materials that are not significant can have more flexibility because the alteration or replacement of these features and materials will not affect the building's original fabric or character. Major renovations are anticipated for the GPL interiors in the near future. MTFA intends this part of the document to help with decision making in balancing preservation needs against needs for laboratory modernization and system upgrades.

During the survey for the Inventory of Significant Features and Materials in Section C, the project team identified the following character-defining features for consideration:

- Exterior Masonry: Brick, Limestone, and Granite
- Glazing: Storefront, Concourse Curtain Walls, and Elevation Curtain Walls
- Doors and Hardware
- Interior Finishes: Metal Ceiling Tiles, Plaster, Ceramic Tiles, Wood, Terrazzo, Baked Enamel Partitions
- Architectural Metals: Aluminum and Stainless Steel,

There are two main challenges in protecting the character-defining features of an architecturally significant building: 1) the treatment of the materials themselves, and 2) inappropriate alterations or replacements that affect the original design intent. The building materials are in fair condition with the masonry in better shape than the interior finishes. Typical treatment recommendations include partial repairs for broken original materials, replacement for materials that have served beyond their life expectancy, and maintenance to remediate water infiltration or refinish degraded materials.

The following section outlines specific conditions for the main preservation challenges at the GPL. Treatment recommendations and priority levels are provided for each condition. High-priority items are those that are best treated within the next two years as conditions will continue to deteriorate and could cause more costly damage if not addressed. Medium-priority items are those that are best treated within two to five years. Conditions of these items will continue to deteriorate and, if not corrected within that period, will lead to more serious damage and costly repair of historic fabric. Low-priority items are those features that are cosmetic in nature and affect the aesthetic of the building. These items can be addressed on a more long-term basis without compromising the safety of those using the building and should be evaluated on a five- to ten-year cycle. At the end of this section is a photographic catalog of the identified conditions.

All GPLs – Exterior Materials Conditions and Treatment

Exterior Masonry –Cleaning

The exterior brick masonry of the GPL does not exhibit significant staining and specific stains are limited to metallic stains, calcium crust, biological growth and general soiling. Isolated metallic staining occurs around corroding penetrations and louvers. Similar to other buildings on the campus, there is metallic staining on the granite pavers at the main entrances of each of the GPL. Since the wall construction does not include a cavity, moisture escapes through the brick joints. Where there is chronic moisture, calcium buildup forms at the point of leaking. This is occurring in spot locations across the east and west elevations. There are also some isolated areas of biological growth on shaded elevations. The massing of the main brick elevations without significant overhangs have allowed the rain water to evenly wash the brick surfaces. However, there are some areas where concentrated water run-off has led to general soiling. These staining conditions are strictly aesthetic and are not damaging the underlying masonry.

Recommendations:

Priority: Low

- *Remove metallic stains from granite and brick with acidic cleaner.*
- *Remove biological growth with a pH neutral architectural biocide.*
- *Perform general cleaning of exterior masonry with a heated pressure wash at 400 psi.*

Exterior Masonry – Granite Repairs

There are granite pavers used at both the primary and secondary entrances to the buildings. At the primary entrances, the handrail footer has corroded and damaged the surrounding granite. The pavers show signs of erosion due to frequent use of de-icing salts. Typical at all the GPL, the granite landings at the secondary entrances in the middle of the long elevations are displaced. The landings usually consist of three stones and it appears the support base of the landings has been compromised. All the stones are out of plane and the grass is growing through the open joints.

Recommendations

Priority: Medium

- *Replace the footer of the handrail with stainless steel to prevent future corrosion.*
- *Replace damaged pavers at main entrances.*
- *Salvage granite landings, repair concrete footings for the landings, and reinstall the stones set in mortar.*

Exterior Masonry – Brick

The exterior brick and mortar joints are in generally good condition with only about 5% open joints. There are no expansion joints on the building and step cracking is common on the east and west ends where the form changes plane. Similarly, the exposed corners in those locations also exhibit vertical cracking through the bricks and the mortar joints, particularly at the first story level. The cracking has been documented before, as indicated in the 2013 Facility Audit, but it is not clear if it has ever been investigated. Step cracking and brick displacement is occurring above the linear vents in the penthouse level. This cracking is likely related to corroding steel lintels at the masonry openings. Further discussion about the brick conditions at the steel shelf angles connected to the concrete structure is found in the next section. Further discussion about the step cracking at the steel lintels can be found in the “Louvers” paragraph later in this section.

Recommendations

Priority: Low

- *Spot repoint open joints in areas outside of step-cracking and shelf-angle displacement. Assume 5% repointing.*

Priority: High

- *Consult a structural engineer to examine the vertical cracking and step cracking in the brick and provide recommendations for remediation. Examine the entire elevation with a lift to understand the full extent of the problem.*
- *Replace all cracked bricks with new bricks that match the existing in color, texture, and size. Do not replace bricks until underlying condition is repaired.*
- *Examine the condition of the louvered opening steel lintel. If the lintel is beyond repair, replace lintel with stainless steel. If the steel can be salvaged and its strength is not compromised, remove flashing and prepare, prime and repaint lintel with high-performance coatings including zinc-rich primers.*

Exterior Masonry – Brick and Shelf Angle Assembly

At the third-floor level of each building, a steel shelf angle supports the outer cladding of brick at the buildings’ windowless north and south facades. A course of lipped brick sits atop the shelf angle, the lip hiding the toe of the shelf angle from view. The joint right under this lipped brick is filled with sealant instead of mortar to accommodate any differential movement between the independently-supported upper story-and-a-half of brick and the two stories of brick below.

At nearly every building, the sealant has been extruded horizontally out of the full lengths of these joints as though it has been forcefully squeezed. In addition, the course of lipped brick just above the sealant is often shifted back or slightly rotated and the mortar joint above the lipped brick is open. At the corners of the walls, there is often even more severe displacement or actual damage to the end bricks at the level of the shelf angle in the form of cracking or spalling which in some cases is quite severe.

The GPL buildings have reinforced-concrete structural frames that rise as far as the attic floor, where the structure changes to wide-flange steel columns and beams. The third-floor shelf angles are bolted to the outer faces of the third-floor reinforced concrete beams. Structural frames tend to shorten under dead load and creep, and concrete additionally shrinks as it ages. Meanwhile, brick masonry expands as it absorbs moisture from the air. The result is that a shelf angle bolted to a concrete structural frame will slowly move downward while the bricks into which it is embedded will expand against it. At the GPLs, this process is putting enormous pressure on the soft joint between the sections of face brick above and below the third-floor level as the slowly-dropping shelf angle begins to transfer the weight of the upper half of the building directly onto the lower section of face brick which is not structural and was never meant to bear any weight other than its own. The squeezing-out of the sealant from the joint and the shifting and cracking of the adjacent brick is the result. The lipped shape of the bricks above the shelf angle make them especially susceptible to displacement and damage as they are required to bear more and more weight on the narrow edge of their lips, inducing stresses which rotate the bricks horizontally and in some cases have actually broken the faces right off the bricks.

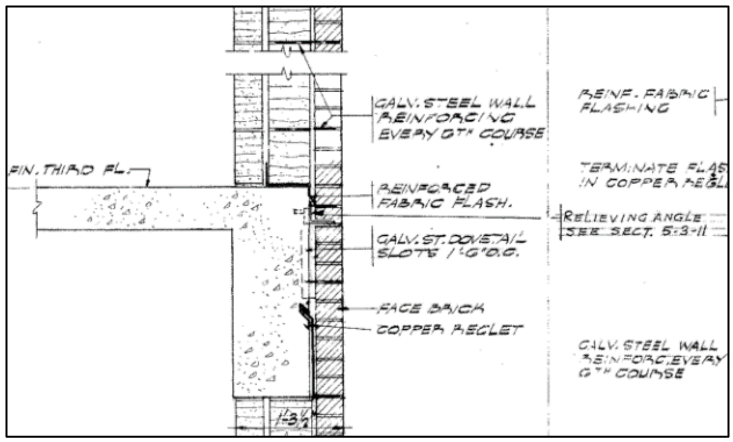


Figure 1: Third Floor Section – VWWSH Dwg 5-1, Detail 6. 1962

Meanwhile, the bond of the mortar in the joint above the lipped brick is no match for these extreme stresses and the bond has almost universally failed along this joint (the presence of embedded fabric flashing in this joint, though necessary to protect the shelf angle from rusting, ends up acting as a bond-breaker in the very mortar joint that is undergoing the most stress). Finally, the sealant does not extend all the way from corner to corner but instead becomes a standard mortar joint for the length of a brick or two whenever the wall reaches a corner or change in plane. This means that the corner bricks have no soft joint at all to relieve the overstress. Badly broken bricks or a web of severe stress cracks are visible at several building corners as a result.

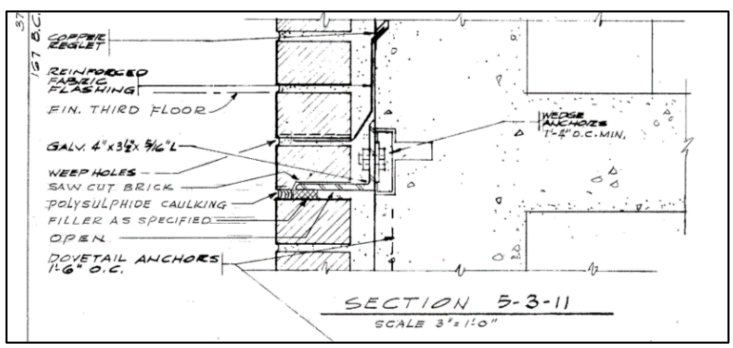


Figure 2: Third Floor Section – VWWSH Dwg 5-3, Detail 17. 1962

Recommendations:

Priority: High

- *The original construction drawings clearly show the ideal configuration of the typical shelf angle assembly, but as-built conditions can differ, sometimes significantly, from what was drawn. It is also important to know if corrosion of the structure or other hidden deterioration is contributing to the conditions described above. Therefore, brick removal probes, ideally at several different buildings, are strongly recommended. The probes should also be located along different parts of the shelf angle including one or more probes at corners. The best places to probe would be at the locations of the worst existing damage. The probes should extend vertically from at least the brick course immediately below the shelf angle up to the upper termination of the concealed flashing. According to the original construction drawing, this could be as many as six courses.*
- *Based on the information gathered from the probes, design and construct an assembly able to tolerate greater differential movement between the brick curtain wall and the concrete building frame.*
- *Replace all bricks that are cracked or have spalled surfaces.*

<u>Exterior Masonry – Failed Sealant</u>

The sealant joints at all openings, including curtain wall windows, door surrounds, storefronts, and concourse curtain wall, should be replaced with new sealant. The sealant is at various stages of deterioration and a comprehensive replacement campaign is warranted.

Recommendations:

Priority- Medium:

- *Replace sealant at all curtain wall and door assemblies with a non-staining silicone sealant.*
-

<u>Exterior Masonry – Failed Parging</u>

The foundation of each GPL is a concrete slab. The exterior of the concrete slab is finished with a cement parging to unify the base of the building. This parging is located at grade level where there are no foundation plantings to absorb ground water. Most of the buildings have a gravel drainage perimeter except for Building 221 and the south side of Building 220. Due to its proximity to moisture at the grade level, the parging is susceptible to saturation and freeze/thaw damage. As moisture within the parging freezes, it expands in the pore structure of the material and damages the structure of the cement from the inside out. At each GPL, the damage is occurring at the bonding plane between the parging and the concrete slab causing wholesale delamination of the parging.

The parging serves as a sacrificial coating that protects the building's foundation. It is important to repair the parging or to provide a different detail to protect the foundation. At Building 221, the parging has been partially replaced with aluminum flashing. The flashing serves the same purpose as the parging and can be considered as a replacement material after its efficacy is evaluated at Building 221.

Recommendations:

Priority: Medium

- *Remove and replace all cement parging at building perimeter foundations.*
- *Consider redesign of cement parging replacement with aluminum flashing.*
- *Install/maintain gravel drainage trenches around each building.*

<u>Exterior Masonry – Concrete Repair</u>

There are various concrete features at each of the GPL buildings including curbs, landings, loading dock paving, access hatches, and a stair (Building 224). In general, the concrete shows sign of age with rebar corrosion, spalls, and erosion. At the curbs, landings, loading docks, and stair, freeze/thaw action and deicing salts may have contributed to deterioration. The access hatches are located at ground level next to soils which may also have contributed to moisture exposure and damage to the rebar.

Reinforced concrete, in general, has a 50-year life span when exposed to the elements. The protection afforded to the rebar from passivity, where the alkalinity of the cement-rich binder helps repel moisture away from the rebar, is broken down as the concrete carbonates and becomes less alkaline. When moisture reaches the steel rebar, the steel is susceptible to rust and the rust expansion begins to crack the concrete. The cycle is exacerbated as the concrete spalls and/or the rebar loses its integrity. At the GPL, the exposed concrete features are almost 60 years old and have reached the end of their expected lifespan.

NIST is currently patching failed concrete as it occurs. This is a stop-gap measure and will require continued patching every 5-10 years. Currently, the exterior entrance landings at the concourses have been patched but the patches are beginning to fail. A longer lasting repair would be to replace the elements in kind as needed.

Recommendations:

Priority: Low

- *Building 221 - Replace curbs around utility areaways.*
- *Patch curbs at areaways, access hatches, and concourse landings. If budgets allow, consider replacing these items in kind.*
- *Building 224 - Reconstruct the concrete stair.*
- *Use de-icing salts sparingly to provide safety without excess. Switch de-icing salts to a more masonry/concrete friendly formula like calcium magnesium acetate instead of sodium chloride.*

<u>Curtain Wall – Spandrel Panel Repairs</u>

The spandrels show various levels of damage from defects in the original design as well as inappropriate maintenance or impact damage. Some of the insulated aluminum spandrel panels at the north and south elevations are visibly bowing out. The original construction drawings show that the side edges of the panels are attached to the aluminum curtain wall frame with concealed clip angles. No provision for expansion and contraction is apparent. Additionally, some panels are dented or otherwise mechanically damaged. Others have been coated for reasons which are unclear. The coatings are faded, not well color-matched, and some are streaking badly and causing damage to the glass and other building materials below. Holes have been cut through a handful of ground-level spandrel panels to route conduits into the building. These penetrations have not been sealed.

Generally, the perimeter sealant around the aluminum spandrel panels is dried out and at the end of its lifespan. Some of it has been repaired in a piecemeal fashion, but some of these repairs are inadequate or incomplete. One complication is that the original construction drawings show that the perimeter sealant at the left and right sides of the spandrel panels fills a large cavity, only about a quarter of which is exposed to the exterior by way of the sealant joint. Cutting out the exposed sealant leaves about three -quarters of the old sealant remaining in the cavity where it is impossible to remove. Unfortunately, new sealant will not stick properly to old, dried-out sealant, so any new sealant installed in the sealant joint will have only a one-sided bond.

Recommendations:

Priority: Low

- *Replace or repair panels with major dents which are either very unsightly or which are so deep that the damaged aluminum may deteriorate further over time.*
- *Panels with minor dents and scratches do not need to repaired.*

Priority: Medium

- *Remove at least one bowed spandrel panel to investigate the actual attachment method and to understand what provisions for thermal movement have been made, if any. Based on the information gathered from the exploratory removal, design and construct an assembly able to tolerate more thermal movement without causing the panel to bow. This remedial repair need only be made at panels showing excessive bowing, or at windows where excessive interior leaking is apparent.*
- *Perform coating removal tests and mockups to determine the best products and procedures for removing the inappropriate coatings without damaging the underlying aluminum. Remove all inappropriate coatings from metal surfaces based on successful test and mockup results.*
- *Perform cleaning tests on glass and other surfaces stained by runoff from the weathered coating. Clean all stained surfaces based on successful cleaning test and mockup results.*
- *Install appropriate sealant systems at conduit penetrations.*
- *In tandem with the panel removal probe recommended above, investigate the actual as-built condition of the spandrel panel sealant joints. Devise a method for re-sealing the spandrel panel perimeters which fully seals the joints without relying on a bond between new and old sealant.*

Curtain Wall – Weep Slot Retrofit

Though not shown in the construction drawings, weep holes in the hollow window heads drain accumulated moisture which would otherwise sit in the metal cavity above the window and leak into the interior of the window surround through joints behind the interior panning. Some windows, in an unpredictable pattern, have had these weep holes covered with sealant, and cellular weep slots have been installed directly above in the sealant joint between the window head and the bottom of the spandrel panel above. It is not clear why this was done, or why certain windows and not others were chosen for this retrofit.

The problem with this alternate weep placement is that in order for water to weep through the new, higher slots, the entire depth of the window head would have to fill up with water before the water line could reach the bottom of the weep slots. To complicate matters further, the flange that forms the back of the window head is not as tall as the front of the window head. Therefore, by the time water even reaches the weep slots, it will have overflowed into and throughout the entire soffit cavity, with the potential of causing severe damage to the soffit finishes inside the building. Indeed, interior water damage was noted at numerous windows, and this may be one contributing cause.

Recommendations:

Priority: Medium

- *In tandem with the panel removal probe recommended above "Spandrel Panel Repairs," investigate the actual as-built condition of the hollow window heads in case a reason for the relocation of the weep holes can be determined. Based on the information gathered above, remove the weep slots and re-open the original weep holes if the concerns described above are supported by the evidence observed in the field.*

Curtain Wall – Water Infiltration and Maintenance

The curtain wall windows are single-glazed ¼" thick sheets of plate glass held in place with perimeter rubber gaskets within a receiver channel. These gaskets have shrunken and deteriorated over time and in many places are hanging loose from the window frames. Loose and deteriorated gaskets which are no longer tight to the glass reduce the insulating value of the window assembly by allowing air to flow in and out of the building around the perimeter of the glass. They also reduce the ability of the window assembly to keep wind-driven rain out of the building.

At many windows, evidence of excessive interior moisture was observed such as visible water staining and water damage at window heads and sills; towels and pads spread out on window sills; and moldy, deteriorated window curtains.

At some windows, a delaminating film was observed on the interior face of the glass, typically on the southern-exposure windows. Especially at building 226, pieces of metal trim are loose in scattered locations.

Recommendations:

Priority: Medium

- *Remove and replace all existing window gaskets (interior and exterior) with new gaskets matching the original gasket profiles in section*
- *Perform window gasket and joint sealant repair and replacement work described in various sections above.*
- *Investigate the role of relocated weep slots in contributing to water building up in the window heads as described above.*
- *Remove the delaminating film. For windows that still require solar control, install new film or explore more permanent solutions such as the installation of low-e glass.*

Priority: High

- *Building 226 - Reattach all loose trim using new fasteners.*

<u>Curtain Wall – Water Staining from Coping Joint Cover</u>

A continuous aluminum coping runs along the top of the brick façade walls just below the level of the attic-story aluminum fin and panel walls. The original construction drawings show this coping (labeled as a "sill" in the drawings) has a flat-seam interlocking detail where adjacent portions of the coping meet. As built, there are metal covers, roughly 9" wide, at some if not all joints. The edges of these covers appear to collect water which spills down the face of the curtain wall, causing dark streaky stains.

Recommendations:

Priority: Low

- *Remove a representative selection of joint covers and inspect the conditions underneath. If feasible, explore the option of removing the joint covers and protecting the joints with fabric-reinforced fluid-applied waterproofing membrane colored to match the adjacent coping.*
- *If the joints cannot be waterproofed with a membrane, explore the option of either installing coping covers that match the width of the window bay, or installing a drip edge across the full width of each window bay head; each option would be designed to divert water runoff to the edges of the window bay.*

<u>Doors – Historically Inappropriate Replacement Door and Surround</u>

Many of the original stairwell exterior exit doors have been replaced with newer doors which are not good matches to the originals and which are not sympathetic to the 1960s modernist design of the building.

The original door assemblies had a characteristically minimalist appearance. Each door was absolutely flat, and flush with the wide faces of the door jambs on either side and with the large metal transom panel above it, all of which gave the appearance of a single, almost unbroken plane recessed within the masonry opening.

Tight-tolerance joints between the edges of each door and its door surround, and the uniform paint color of the entire assembly, emphasized this effect. The only objects breaking the plane were the knuckles of the three door hinges and the lockset.

In almost all cases, these doors have been replaced with doors which do not follow these design features in any respect. The replacement doors have a pebbled, textured finish that is also a different color from the jambs and transom panel. They have tall, rectangular view panels with a distinctly three-dimensional frame profile. The replacement doors are edged with a thick, shiny frame that also has a three-dimensional profile as well as a different color from the door itself and from the door surround. The replacement doors have a continuous geared hinge which visibly projects from the entire length of the hinge side. The replacement door hardware is also larger than the original hardware and has a somewhat curvilinear outline unlike the strictly geometric look of the original. Finally, the replacement transom panel extends the full width of the masonry opening instead of allowing the tight-tolerance door jamb joints to extend up to the lintel as in the original, and all of the metal is unfinished or anodized, giving the parts of the assembly two or three different shades and colors instead of being uniformly painted. The result is visually messy, and the doors look curiously undersized and out of place within the large masonry openings because they do not visually relate to any of the materials surrounding them.

Other exterior door conditions include deteriorated metal-to-masonry perimeter sealant joints at the stairwell exterior exit doors. The existing coating at the original stairwell exterior exit doors is faded, failing, and beyond its useful life. The metal beneath is beginning to rust where the paint has peeled away.

Recommendations:

Priority: Low

- *Remove non-original doors and metal infill construction. Install new doors, jambs, transom panels, and hardware that match the appearance of the originals.*

Priority: Medium

- *Rake out all existing sealant, prepare joints, and install appropriate sealant.*
- *Strip all coatings from doors and door surrounds. Clean, prepare, prime, and paint all metal surfaces with architectural metal coating system.*

<u>Insulated Metal Paneling – General Conditions</u>

The sheet metal at the soffit of the attic-level recess is covered with a pattern of light-colored spots resembling aluminum pitting. Pitting is usually caused by very localized galvanic reactions triggered when beads of moisture and dirt cling to the surface of unprotected aluminum in areas where sunlight and air circulation are limited. When the moisture finally evaporates, small deposits of dirt can continue to trap moisture underneath them and cause the pitting to intensify.

A large inswing exterior access door in the attic level of Building 222 was not tightly shut and latched. The latching mechanism was not engaged at the top of the door, the door was disconnected from an overhead support track, and from the exterior the door appeared slightly ajar. This condition may allow water and wind infiltration.

Recommendations:

Priority: Low

- *Clean metal surfaces.*
- *Inspect surfaces closely to determine level of deterioration. If pitting is causing more than superficial damage, explore the possibility of an appropriate architectural metal coating system.*

Priority: Medium

- *Building 222 - Repair and adjust all door operating hardware to allow door to fully shut and latch as designed.*

<u>Aluminum Storefronts – Broken Glass and Corroded Aluminum</u>

A pane of cracked glass was observed at the aluminum storefront entrance of Building 222. The glass should be replaced. The lower half of the glass is painted to resemble a solid panel. It is not clear if this is a historic condition, but the new glass will need to be similarly painted in order to match the other glass in the storefront.

Floor-level aluminum sills at the exterior faces of the aluminum storefront entrances are corroded, most likely from de-icing salts. Both low and high pH levels accelerate aluminum corrosion, as does salt. For this reason, de-icing materials used near aluminum should be used with great care, and salt-based materials should not be used.

Recommendations:

Priority: High

- *Building 222- Replace existing cracked glass and paint to match existing.*
- *Do not use chemical de-icing materials that are incompatible with aluminum near the entrances.*

Priority: Medium

- *Remove corroded aluminum sills and replace with new sills that match existing.*

Louvers – Corroded Lintels and Mechanical Damage

The penthouse ribbon louvers have hung lintels which support the exterior face brick above the louver openings. According to the original construction drawings, these lintels are protected by a sheet of reinforced fabric flashing concealed in the drainage cavity behind the brick. Over the years, concealed flashing can stiffen and deteriorate, allowing moisture to attack the steel structure. This causes rust expansion on the lintel surfaces which eventually pushes the face brick up and off the lintels. When this condition is incipient but not yet advanced, the first signs are usually step cracks extending up and away from the corners of the opening. This condition was observed at many of the penthouse louver openings.

Some penthouse louvers have been hit with equipment or cut for unknown reasons and are damaged. In addition to being an aesthetic issue, this damage may reduce the ability of the louvers to resist wind-driven rain.

Recommendations:

Priority: Medium

- *Remove face brick from above louver openings to completely expose existing flashing and lintel steel. Remove flashing. Scrape, clean, prime, and paint all exposed surfaces of lintel. Repair any damage to backup masonry above the lintel. Install new copper fabric flashing and termination bar to fully protect lintel. Install stainless steel drip edge. Replace face brick, including adequate weep slots to drain the wall cavity.*
- *Remove damaged louver sections and replace with new louvers to match.*

Concourse Curtain Wall – Historically Inappropriate Replacement Curtain Wall System

The east curtain wall of the concourse between Buildings 225 and 226 was at some point replaced with a historically-inappropriate curtain wall that does not match the other concourses. The historic design of the concourse curtain walls across the original campus consists of single floor-to-ceiling panels of glass at each concourse floor level within a silver-colored aluminum frame, with no spandrel panels. The east curtain wall of this concourse has a continuous row of square glass panels at each floor level, each approximately five feet square. Between each row of these windows is a horizontal row of aluminum spandrel panels. The panels and the curtain wall frame are all dark-brown anodized or coated aluminum. In addition, this curtain wall assembly is deteriorating in several different ways: spandrel panels are bulging and dented; many of the window glass panels are fogged; the gaskets around the spandrel panels and the window glass are shrinking with age; and some of the frame members near ground level are dented and damaged, likely from impacts from landscaping equipment. Also, the west curtain wall of this concourse is still original, so the two walls are visibly mismatched from within the concourse.

Recommendations:

Priority: Low

- *Buildings 225 and 226 - Remove the deteriorated and historically inappropriate replacement curtain wall system and replace it with a new curtain wall system with a historically-accurate appearance.*

Light Fixtures – Corrosion

The drawings in the NIST records do not reveal the original light fixture selection from the 1963 construction. There are a variety of different light fixtures on the buildings. The fixtures at the secondary entrances on the north/south elevations are typically corroding from condensation that builds on the inset door soffit. The globes of the light fixtures are extremely dirty and filled with dead bugs.

Recommendations:

Priority: Low

- *Remove light fixtures from entrances for rehabilitation. Clean out dirt and debris from globes and prepare, prime and repaint metal fixtures. Re-wire for LED lamps as required.*
- *Consider comprehensive replacement of the light fixtures to a consistent appearance that is more in keeping with the original design intent.*

Access Hatch – Coating

The access hatches found at all GPL buildings features a metal hatch set in a concrete frame. The metal hatch was painted but the paint coating is deteriorated and the steel has begun to rust.

Recommendations:

Priority: Low

- *Prepare, prime, and repaint metal access hatch with high performance coatings.*

All GPLs – Interior Materials Conditions and Treatment

Terrazzo and Tile – Repairs

Terrazzo and tile are character defining features and found throughout the circulation, office, bathroom, and laboratory spaces of each GPL. The terrazzo and tile finishes are in good condition. Cracks and spalls are common at expansion joints and stair nosings in the terrazzo floors. They are also common at other isolated locations that may indicate movement in the slab floor. In some locations, particularly the stair halls, poorly-matched epoxy fill has been used to repair spalls.

The original quarry and structural facing tiles exist in all bathrooms, stair halls, and corridor ends of the GPL. Cracking and spalls are common at the quarry tiles located on the bathroom floors. Structural tiles exhibit very little damage, limited mostly to failed grout, inappropriate paint, failed paint or maintenance, and biological growth. The most prevalent condition is an inappropriate, textured paint applied to all corridor ends of Buildings 223, 224, and 225. The application of paint renders the original wayfinding and design intent useless and has not been maintained, resulting in chipped and failing paint.

All the floors, with the exception of the bathrooms and stair halls, were originally finished with vinyl-asbestos tile (VAT) or carpet. The original and existing VAT is in good condition but has been periodically replaced with new material that does not match the old in texture or color. Replacements of VAT flooring have occurred where water damage, soiling, chipping, or broken tiles exist. Other lower priority conditions for VAT flooring include soiled or broken tiles.

Areas of particular wear and significant replacement of VAT include the basement level of Building 226, first floor of Building 226. These areas have approximately 30% of their original VAT replaced with tiles that do not match the original in color, texture, size, shape, or profile. All other GPLs with VAT finishes range from 1% to 10% replacement. Locations of highest replacement include door thresholds, concourse ends of the corridors, access panels, and basement levels. This is likely due to higher rates of foot traffic, wear from accessing panels and systems below the VAT, and higher susceptibility for water infiltration. Nearly all lab thresholds have replacement tiles which could be a result from water infiltration from the safety showers located directly above, or because these locations experience consistent wear from foot traffic. Access panels are finished with tile and likely begin to crack, flake, and deteriorate because their profile is slightly higher or lower than the surrounding floor surface. Subsequently, these surfaces need frequent replacement tiles. Similarly, the floors surrounding the concourse entrances have needed frequent replacement due to heavy wear from foot traffic flowing between GPLs.

Recommendations:

Priority: Low

- *Replace cracked and spalled quarry tiles in kind.*
- *Replace failed grout with new grout that matches the original in color. Grout mixture should be mixed 1 part cement and 1 to 2 parts fine clean sharp sand. A limited amount of lime putty may be added to give proper plasticity.*
- *Buildings 222, 223, 224 - Remove paint to expose original structural facing tile or repaint with matching coating.*

- *Remove current signs and repair or expose original structural facing tile. Reinstall signage.*
- *Clean structural facing tile and grout with biocide to remove biological growth.*
- *Remove inappropriate epoxy patches and patch with color-matched mortar and finish with marble aggregate that matches the existing color and size distribution.*
- *Strip terrazzo floor and stairs to remove floor finish. If metallic stain persists, treat with an alkaline rust remover.*
- *Remove fasteners from terrazzo and patch with patching mortar and aggregate that matches the existing in color and size distribution.*
- *Remove mismatched VAT and replace with new vinyl tiles of matching color and size.*
- *Clean VAT with a mild, non-ionic detergent and water to remove soiling, staining, and adhesive residue.*
- *Replace broken tiles with new or salvage ones that match the original in color, texture, size, shape, and profile.*

Ceiling Tiles – General Maintenance

Acoustical ceiling tiles are present in all corridors, concourses, offices, and lobbies and include two types: perforated aluminum and mineral plastic. Conditions for ceiling tiles are relatively minor but include water damage, corrosion, inappropriate repairs, broken tiles, and missing tiles. In areas of chronic water infiltration at the concourses, the aluminum ceiling tiles were replaced with mineral plastic tiles. These tiles are also deteriorating because the water infiltration has not been addressed. All areas with damaged tiles should be replaced only after the leaks have been remediated. Replacement tiles should match the original in style, size texture, and color.

Perforated aluminum ceiling tiles are located in all corridors, offices, and some lobbies. They exhibit water infiltration, damage, and corrosion and attempted remediation has led to inappropriate repairs such as with spray paint, putty, or tape. All areas with damaged tiles should be replaced only after the leaks have been remediated and replacement tiles should match the existing in color, texture, size, shape, and profile. Other ceiling tile concerns include dings, dents, and misaligned tiles and metal pans. Such conditions do not require replacement, however, workplans should be created to limit damage during maintenance.

Recommendations:

Priority: Medium

- *Remediate leaks in areas of water infiltration.*
- *After correcting source of water leak, remove damaged ceiling tiles and replace in kind.*
- *Replace missing tiles in kind.*

Priority: Low

- *Replace missing or broken tiles to match the original in kind.*
- *Remove corroded tiles and replace in kind.*

- *When necessary, replace damaged tiles with new or salvaged ones that match the original in color, texture, size, shape, and profile.*
- *Create workplans to limit damage to ornamental metals during maintenance activities.*

<u>Slate – Staining</u>

The slate at the bottom of the alcoves in the stair halls demonstrate water staining from the water pipe above.

Priority: Medium

- *Investigate source of water and clean water stains with an alkaline cleaner.*

<u>Architectural Metals – Aluminum, Stainless Steel, and Baked Enamel Steel</u>

Metals—mostly aluminum and baked enamel steel—are a character defining feature of the interior and found in every GPL. Areas with the highest prevalence of architectural metals are the lobby, corridor, stair hall, and concourse. All windows, curtainwall systems, vents, ceiling diffusers, and door hardware and select doors and ceiling tiles are aluminum; Wall partitions, doors, door frames, grilles, and radiator covers are all steel with varying finishes.

The architectural metals are in overall good condition. Corrosion is uncommon and but when it occurs it appears to be related to water infiltration around windows, doors, vents, radiator cabinets, and cold joints where sealant and gaskets have failed. A less frequent though significant condition is the punctures in the metal partition walls. Punctures in the baked enamel steel could lead to water infiltration, corrosion, and deterioration of the partitions. Other conditions such as soiling, paint loss, and displacement are fairly common but do not threaten the integrity of the metal elements.

Recommendations:

Priority: Medium

- *Determine source of leaks and make necessary repairs to prevent future water infiltration.*

Priority: Low

- *Clean and stabilize corrosion and repair entire element.*
- *Prep, prime, and repaint metal element.*
- *Reset extruded aluminum grille so that it is level and covers vent opening.*
- *Remove sealant and re-seal with a compatible, paintable sealant.*
- *Remove fasteners and patch with steel metal filler and repaint.*
- *Clean soiled metal elements with a mild, non-ionic detergent and water.*

Architectural Woodwork

The wood handrails in the stairwells are some of the only wood trim in the GPL buildings. The handrails are in good shape but the finish is showing signs of wear and some of the joints have separated.

Recommendations:

Priority: Medium

- *Strip, prepare, prime, and refinish handrails with a protective clear coating.*
- *Fill open seams with wood putty.*
- *Conduct code analysis to determine mitigation for preserving handrails at current height.*

Light Fixtures

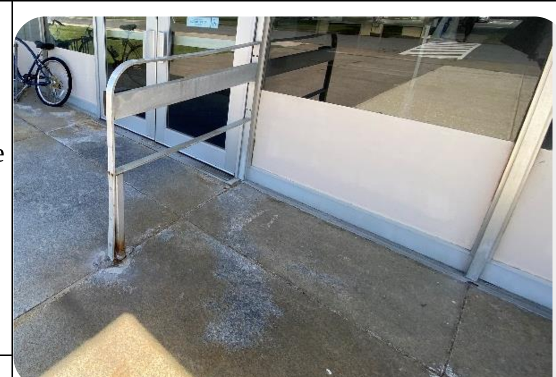
Recessed, rectangular light fixtures are found throughout the corridors, concourses, and offices of the GPL. Conditions for this light fixture type include broken elements and water damage. Plastic elements of the fixture and the surrounding acoustical tiles show water ponding is frequently occurring in the corridors and concourses of the buildings. Many fixtures include broken frames or plastic covers which require replacement as wellzx as workplans to limit damage during maintenance.

Recommendations:

Priority: Medium

- *Investigate and correct sources of water infiltration or high relative humidity.*
- *After correcting source of water leak, remove damaged light fixtures and replace in kind.*

Granite

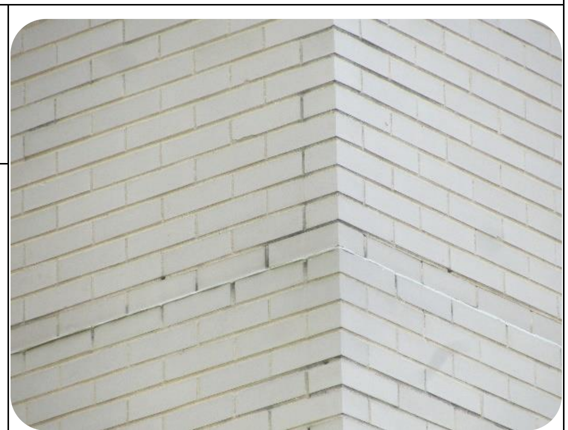
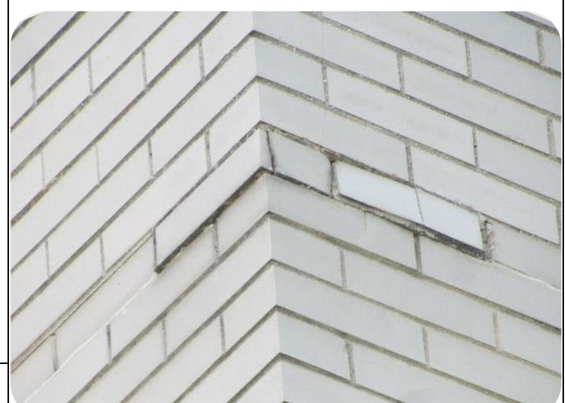
ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Granite	Displacement	Reset granite landings so they are level. Point with mortar to prevent water infilatration.	
Priority: High		B220	
Granite	Failed or Spalled Stone	Repalce failed patches with a compatible patching mortar that is softer and sacrificial to the stone. At railings, repair posts with non-corrosive metal.	
Priority: Medium		B223	
Granite	Failed Mortar Joints	Remove sealant from masonry-to-masonry joints and repoint with a compatible mortar that matches the original in color and texture.	
Priority: Medium		B223	
Granite	Erosion	Reduce use of de-icing salts to minimize erosion from salt damage.	
Priority: Low		B223	

Granite

Granite	Biological Growth	Clean with a biocide and low-pressure wash.	
Priority: Low		B221	
Granite	Metallic Staining	Clean with a mild rust remover with a pH between 4-7 and a low-pressure wash.	
Priority: Low		B220	
Limestone	Flashing / Coping Caps	The limestone coping under the coping cap is often broken. Maintain coping caps or replace limestone coping.	
Priority: Low		B225	

Brick Walls

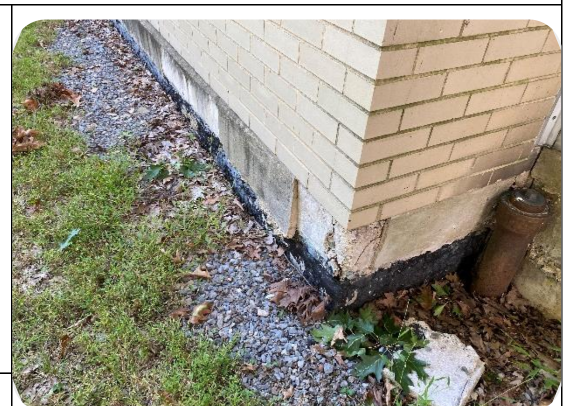
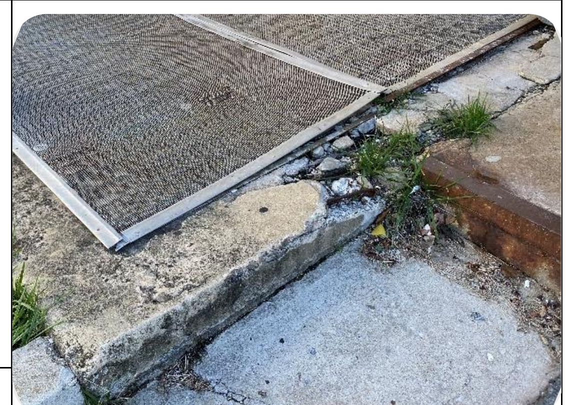
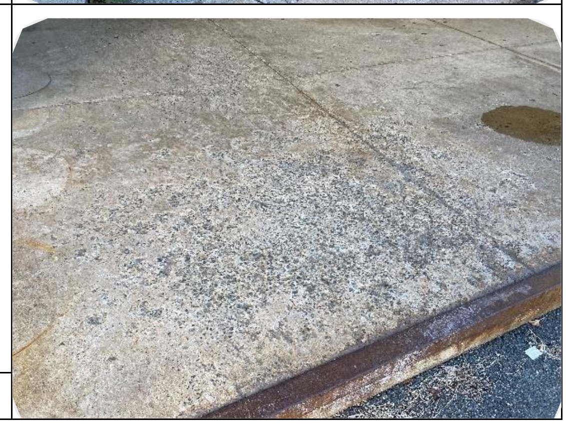
Brick Walls	Failed Mortar Joints	Remove failed joints and repoint with a compatible mortar that maches the original in color and texture.	
Priority: High		B224	

Brick Walls			
Brick and Shelf Angle Assembly	Shelf Angle Assembly Damage	This condition at the shelf angle assembly is likely from inadequate provision for concrete frame shrinkage. Remove loose, damaged bricks immediately. Perform brick removal probes to determine configuration and conditions of concealed shelf angle assemblies. Correct concealed deficiencies, replace damaged bricks, and rake out and re-seal soft joints with appropriate movement-tolerant material.	
Priority: High		B224	
Brick Walls	Cracked Bricks	Replace cracked bricks and repoint joints with mortar.	
Priority:High		B223	
Brick Walls	Displacement	Remove all bricks that are at risk of falling. Investigate shelf angle detail to determine the appropriate sealant placement and type.	
Priority: High		B222	
Brick Walls	Step Cracking	Most likely due to horizontal thermal movement compounded by lack of expansion joints. Repoint joints with compatible mortar.	
Priority: Medium		B226	

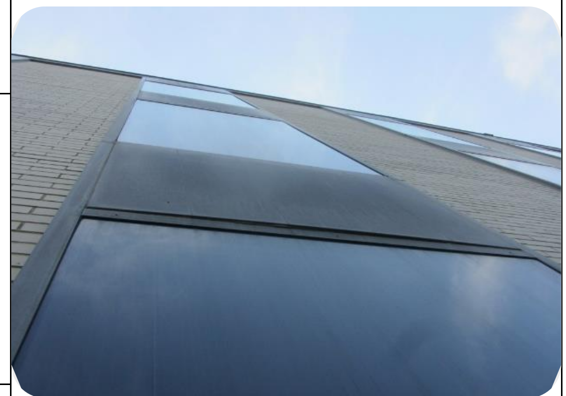
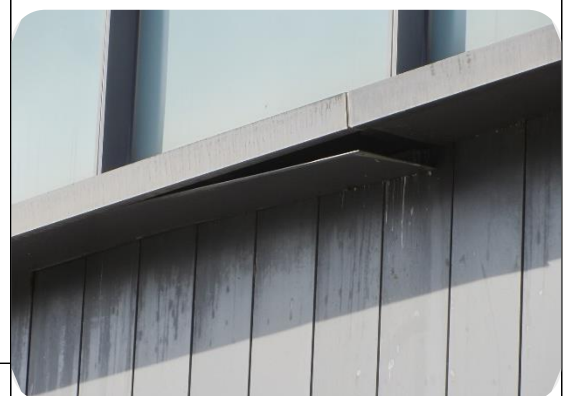
Brick Walls

Brick Walls	Metallic Staining	Prep, prime and repaint metal element that is rusting. Clean bricks with a mild acidic rust remover with a pH between 4-7. Rinse with a low-pressure wash.	
Priority: Low		B225	

Concrete

Concrete	Failed Parging	Remove failed parging and re-parge with cement or replace with metal covering.	
Priority: High		B221	
Concrete	Failed Patches	Remove failed concrete and previous patching material. Replace or repair steel reinforcement. Patch with compatible concrete mix.	
Priority: Medium		B221	
Concrete	Erosion	Reduce the use of de-icing salts to minimize the erosion.	
Priority: Low		B221	

Curtain Wall

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Metal Spandrel Panels	Bowing of Panels	This condition is likely due to lack of accommodation for thermal expansion in original design detailing. Perform spandrel removal probes to determine configuration and conditions of concealed spandrel mounting assemblies. Correct concealed deficiencies at spandrel panels with more than minor bowing. Reinstall panels and re-seal soft joints with appropriate movement-tolerant material.	
Priority: High			
Trim	Miscellaneous Loose Trim	Reattach loose trim with new fasteners.	
Priority: High			
Windows	Water Damage at Interior Finishes	Replace window gaskets and curtain wall sealant joints. Investigate retrofit weep slot condition described below as a possible contributing factor.	
Priority: Medium			
Metal Spandrel Panels	Deteriorated Perimeter Sealant	Rake out and reinstall appropriate sealant.	
Priority: Medium		B225	

Curtain Wall

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Metal Spandrel Panels	Unsealed Penetrations	Install appropriate sealant systems at penetrations.	
Priority: Medium		B224	
Metal Spandrel Panels	Retrofit Weep Slots	At some windows, retrofit weep slots were installed for unknown reasons in sealant joints above original weep holes in metal frames. Original weep holes were sealed over. The location of retrofit weep slots may be allowing water to accumulate in window head to the point of leaking or overflowing.	
		Re-open original weep holes to allow for proper curtain wall system drainage as originally designed.	
Priority: Medium		B226	
Window Gaskets	Deteriorated Perimeter Gaskets at Glass	Remove and replace gaskets.	
Priority: Medium		B225	
Metal Spandrel Panels	Dents and Other Mechanical Damage	Replace or repair panels with holes and more than minor damage.	
Priority: Medium / Low		B222	

Curtain Wall

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Metal Spandrel Panels	Inappropriate Coating	Remove coating applied to some spandrels and refinish spandrel panels. Clean stains from surrounding surfaces.	
Priority: Low			
Window Film	Delaminating Film on Glass	Remove film. Explore modern coated-glass products which may decrease solar gain and glare without requiring the use of aftermarket applied films.	
Priority: Low			
Trim	Water Runoff Staining from Coping Joint Cover	Remove one or more joint covers to document the conditions beneath. Based on what is observed, consider removing the joint covers and protecting the joints with fluid-applied reinforced waterproofing membrane, or installing a drip edge across the full width of any window bay with a joint cover to divert runoff to the edges of the window bays.	
Priority: Low			

Doors			
ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Sealant	Deteriorated Sealant	Rake out failed sealant at perimeters of door surrounds and reinstall appropriate sealant.	
Priority: Medium			
Door Assembly	Deteriorated Paint Coating	Remove coating, clean and prepare bare metal, prime and paint with exterior architectural metal coating system.	
Priority: Medium			
Door Assembly	Inappropriate Replacement Door and Surround	Replace with new door and door surround that matches the appearance of the original historic door assembly.	
Priority: Low			

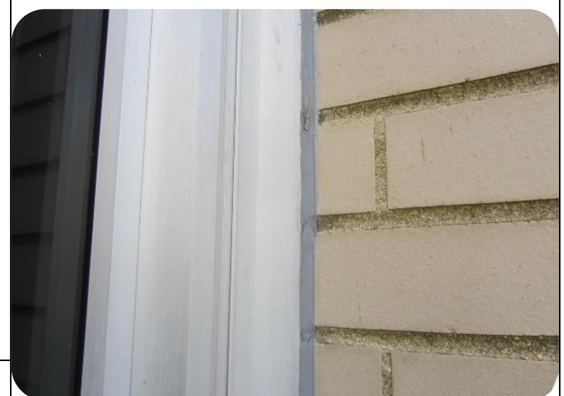
Insulated Metal Paneling

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Access Door	Misalignment	Repair door operating hardware to allow door to close fully and tightly. Adjust alignment.	
Priority: Low		B222	
Access Door Hardware	Corrosion and Staining	Clean metal surfaces and apply appropriate architectural metal coating system.	
Priority: Low		B224	
Metal Soffit	Corrosion and Pitting	Clean metal surfaces and investigate further to explore the need for an appropriate architectural metal coating system.	
Priority: Low		B222	

Aluminum Storefront

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Glass	Cracked glass	Remove and replace cracked glass. Paint lower section of glass to match adjacent glass panels.	
Priority: High		B222	
Aluminum Threshhold	Corrosion	This condition is most likely related to de-icing salts. Remove damaged sections of threshold and replace with new, matching sections. Avoid the use of corrosive de-icing products in the vicinity of architectural alumimum.	
Priority: Medium		B222	
Sealant	Deteriorated Sealant	Rake out and reinstall appropriate sealant at perimeter of openings.	
Priority: Medium		B222	

Concourse- Curtain Wall

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Gaskets	Shrunken Gaskets	The gaskets at the perimter of the aluminum and glass panels have shrunken. Remove and replace gaskets.	
Priority: Medium		B225-B226 Connector	
Sealant	Deteriorated Sealant	Rake out and reinstall appropriate sealant at connection to main buildng walls.	
Priority: Medium		B222	
Anchors	Loose Screws	Tighten or replace loose anchors at anchoring closure strips at connection to main building walls.	
Priority: Medium		B222	
Aluminum Mullions	Mechanical Damage	Replace damaged mullions. On a case-by-case basis, mullions which have only minor damage may be retained and repainted if their water-excluding capacity has not been compromised.	
Priority: Medium		B225-B226	

Concourse – Curtain Wall

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Aluminum Spandrel Panels	Dents and Distortion	Replace panels with major dents and distortions. Panels with minor distortion can be retained.	
Priority: Low		B225-B226 Connector	
Double-Glazed Window Units	Fogging	Replace fogged double-glazed units with new double-glazing.	
Priority: Low		B225-B226 Connector	
Door Railing	Mechanical Damage	Straighten bent railing sections.	
Priority: Low		B224-Shops Connector	
General Surfaces	General Soiling	Clean metal and glass surfaces with cleaning methods and products compatible with soil type and substrate.	
Priority: Low		B222	

Light Fixtures

Light Fixtures	Corroded Surface Mount	Remove light fixtures and clean metal to remove corrosion. Apply protective coating to prevent corrosion.	
Priority: Low		B221	
Light Fixtures	Maintenance Cleaning	Remove light covers and clean to remove debris build up.	
Priority: Low		B221	
Light Fixtures	Replacement Fixture	Remove light fixtures that are inconsistent with the design intent. Replace with light fixtures that match the original.	
Priority: Low		B221	

Access Hatch

Access Hatch	Failed Paint	Strip, prepare, prime and repaint access hatch with a high-performance coating for steel.	
Priority: Medium			
Access Hatch	Failed Concrete	Remove loose or failed concrete. Repair reinforcement and patch with a compatible cement.	
Priority: Medium			

Terrazzo and Tile Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Quarry Tile	Spall	Replace cracked tiles in kind	
Priority: Low		Third-Floor Bathroom of B222	

Terrazzo and Tile Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Structural Facing Tile	Failed Grout	Replace failed grout with new grout that matches the original in color. Grout mixture should be mixed 1 part cement and 1 to 2 parts fine clean sharp sand. A limited amount of lime putty may be added to give proper plasticity.	
Priority: Medium		Third-Floor Stairhall of B224	
Structural Facing Tile	Inappropriate Paint	Remove paint to expose original tile or repaint with matching coating.	
Priority: Low		Third-Floor Corridor of B226	
Structural Facing Tile	Failed Paint/ Maintenance	Remove current sign and repair or expose original tile. Reinstall signage.	
Priority: Low		Third-Floor Corridor of B226	
Structural Facing Tile	Biological Growth	Clean with biocide.	
Priority: Low		Second-Floor Stairhall of B226	

Terrazzo and Tile Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Terrazzo	Spall	Patch with terrazzo patch that matches original in color and texture.	
Priority: Medium		Third-Floor Stairhall of B220	
Terrazzo	Inappropriate Repair	Remove inappropriate epoxy patch. Patch with color-matched patching mortar and finish with marble aggregate that matches the existing color and size distribution.	
Priority: Low		Third-Floor Stairhall of B224	
Terrazzo	Metallic Stain	Strip to remove floor finish. If stain persists, treat with an alkaline rust remover.	
Priority: Low		Second-Floor Stairhall of B220	
Terrazzo	Crack	Monitor current cracks for change or spalling. Fill significant cracks with grout that matches original binder in color and texture	
Priority: Low		Lobby Vestibule of B224	

Terrazzo and Tile Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Terrazzo	Embedded Fastener	Remove fasteners and patch with patching mortar and aggregate that matches the existing in color and size distribution.	
Priority: Low		Third-Floor Stairhall of B224	
Vinyl Asbestos Tile	Inappropriate Repair	Existing replacements that are a poor match do not require replacement if they are in sound condition. When necessary, replace damaged tiles with new or salvaged ones that match the original in color, texture, size, shape, and profile.	
Priority: Low		B	
Vinyl Asbestos Tile	Soiling	Clean stained vinyl asbestos tile with a mild, non-ionic detergent and water.	
Priority: Low		First-Floor Kitchen of B222	
Vinyl Asbestos Tile	Broken Tiles	Replace broken tiles with new or salvaged ones that matches the original in color, texture, size, shape, and profile.	
Priority: Low		First-Floor Corridor of B222	

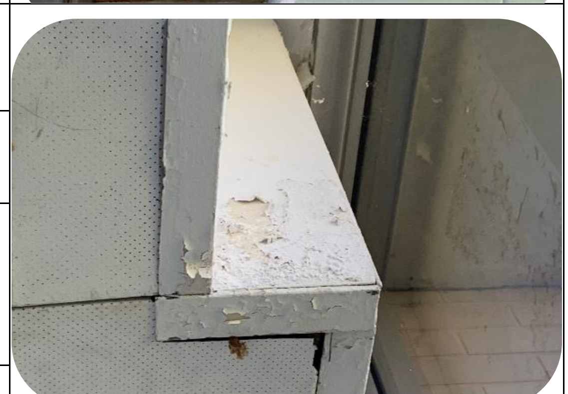
Attic Drainage & Ceiling Tiles

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Attic Drainage	Ponding	Ponding water is present at the attic of each building and poor drainage could be contributing to signs of water infiltration and corrosion of metal elements to the floors.	
		Investigate and correct sources of water infiltration.	
Priority: Medium		Attic of B220	
Mineral Plastic Ceiling Tiles	Water Damage	Investigate and correct sources of water infiltration or high relative humidity.	
		After correcting source of water leak, remove damaged ceiling tiles and replace in kind.	
Priority: Medium		B	
Perforated Aluminum Ceiling Tiles	Missing Element	Replace missing ceiling tile in kind.	
Priority: Medium		B221	
Perforated Aluminum Ceiling Tiles	Corrosion	Remove corroded tiles and replace in kind.	
Priority: Low		Third-Floor Corridor of B224	

Attic Drainage & Ceiling Tiles

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Perforated Aluminum Ceiling Tiles	Inappropriate Repair	When necessary, replace damaged tiles with new or salvaged ones that match the original in color, texture, size, shape, and profile.	
Priority: Low		Third-Floor Corridor of B220	
Perforated Aluminum Ceiling Tiles	Dings, Dents, and Misalignment	Minor dents and dings to not require repair.	
		Create workplans to limit damage to ornamental metals during maintenance and landscaping activities.	
Priority: Low		B223	

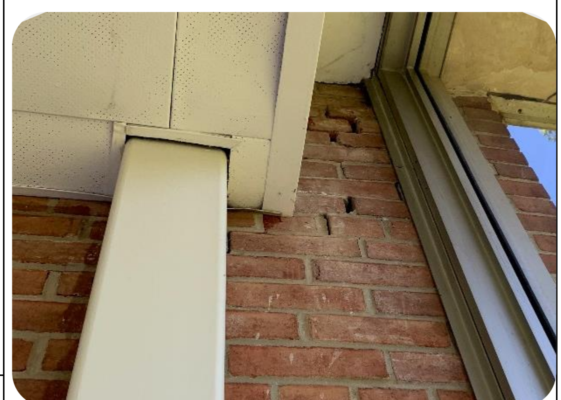
Plaster Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Plaster Ceiling	Water Damage	Investigate and correct sources of water infiltration.	
		After correcting source of water leak, remove damaged plaster.	
		Patch with new plaster. Sand so that patch is smooth and flush with adjacent plaster. Paint or provide vinyl wall covering to match adjacent wall or ceiling.	
Priority: Medium		Concourse between Shops 304 and B224	
Plaster Soffit	Paint Loss	Investigate and correct sources of water infiltration or high relative humidity.	
		After correcting source of water leak, remove damaged plaster.	
		Patch with new plaster. Sand so that patch is smooth and flush with adjacent plaster. Paint.	
Priority: Medium		Concourse between Shops 304 and B224	

Plaster Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Plaster Wall	Impact Damage	Patch with new plaster. Sand so that patch is smooth and flush with adjacent plaster. Paint to match decorative finish.	
Priority: Medium		Lobby Vestibule of B224	

Masonry Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Brick Wall	Step Cracking	Repoint open joints with mortar that matches the existing in color and composition.	
Priority: Medium		Concourse between Shops 304 and B224	
Brick Wall	Efflorescence	Investigate source of water infiltration. Remove efflorescence with an acidic cle	
Priority: Medium		Concourse between Shops 304 and B224	

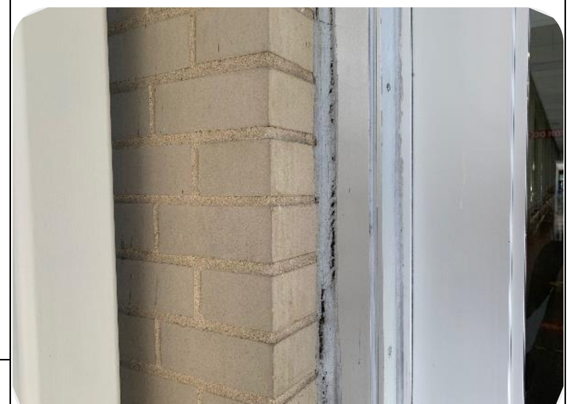
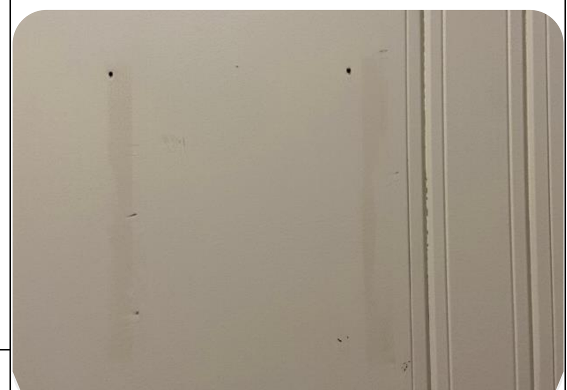
Masonry Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Slate, Polished	Water Staining	Clean stains with an alkaline cleaner.	
Priority: Medium		Second-Floor Stairhall of B226	

Architectural Metal Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Radiator Cabinet	Corrosion	Clean to stabilize corrosion and repaint entire element.	
Priority: Low		Third-Floor Bathroom of B222	
Steel Door	Paint Loss	Prep, prime, and repaint metal element.	
Priority: Low		Vault Door at First-Floor Corridor of B222	
Vent	Displacement	Reset extruded aluminum grille so that it is level and covers vent opening.	
Priority: Low		Second-Story Bathroom of 223	

Architectural Metal Interior Finishes

ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Door Frame	Sealant Failure	Remove sealant and re-seal with a compatible, paintable sealant.	
Priority: Low		Concourse between B222 and B223	
Metal Partition	Punctures	Patch with steel metal filler. Repaint.	
Priority: Low		Third-Floor Corridor of B223	
Hollow Metal Door	Soiling	Clean soiled metal elements with a mild, non-ionic detergent and water.	
Priority: Low		Second-Floor Corridor of B222	

Lighting			
ELEMENT	CONDITION	RECOMMENDATION	PHOTO
Light Fixture	Water Damage	Investigate and correct sources of water infiltration or high relative humidity. After correcting source of water leak, remove damaged light fixtures and replace in kind.	
Priority: Medium		Concourse between B222 and B223	
Light Fixture	Broken Fixture	Replace broken pieces of light fixture with in-kind materials.	
Priority: Medium		Lobby Vestibule of B222	

Priority Matrix - By Priority Level									Condition Drawings	
Exterior Element	Condition	Priority Rating per Building								
		220	221	222	223	224	225	226	Key Notes	General Notes
Brick	Cracked Bricks	High	High	High	High	High	High	High	7, 1	
Brick	Displacement	High	High	High	High	High	High	High	12	
Brick	Shelf Angle Assembly Damage	High	High	High	High	High	High	High	12	L
Brick	Step Cracking	High	High	High	High	High	High	High	3	
Storefront	Cracked Glass			High					21	
Curtain Wall	Loose Trim							High		B
Brick	Failed Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium		G
Concourse Curtain Wall	Failed Gaskets and Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium		E, G
Concourse Curtain Wall	Fogged double-glazed windows.	Medium	Medium	Medium	Medium	Medium	Medium	Medium		
Concourse Curtain Wall	Gasket Failure	Medium	Medium	Medium	Medium	Medium	Medium	Medium		E
Concourse Curtain Wall	Loose Screw	Medium	Medium	Medium	Medium	Medium	Medium	Medium		B
Concrete	Failed Parging	Medium	Medium	Medium	Medium	Medium	Medium	Medium		I
Curtain Wall	Failed Film	Medium	Medium	Medium	Medium	Medium	Medium	Medium		M
Curtain Wall	Failed Gaskets and Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium		E, G
Curtain Wall	Mechanical Damage	Medium	Medium	Medium	Medium	Medium	Medium	Medium	17	
Doors	Failed Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium		G
Granite	Displacement	Medium	Medium	Medium	Medium	Medium	Medium	Medium	12	N
Granite	Failed Mortar Joints	Medium	Medium	Medium	Medium	Medium	Medium	Medium	1	N
Louvers	Corrosion/Mechanical Damage	Medium	Medium	Medium	Medium	Medium	Medium	Medium	6A	
Storefront	Corroded Sill	Medium	Medium	Medium	Medium	Medium	Medium	Medium		F
Storefront	Failed Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium		G
Curtain Wall	Inappropriate Coating at Metal Spandrel Panels	Medium	Medium	Medium	Medium	Medium			11	
Curtain Wall	Unsealed Penetrations	Medium	Medium						14	G
Curtain Wall	Restore weeps at Metal Spandrel Panels	Medium		Medium					23	
Doors	Failed Paint	Medium			Medium				18	
Curtain Wall	Failed Sealant Metal Spandrel Panels			Medium	Medium				24	G
Granite	Failed or Spalled Stone			Medium					4	N
Insulated Paneling	Access Doors Misalignment			Medium						
Access Hatch	Failed Concrete	Low	Low	Low	Low	Low	Low	Low		
Access Hatch	Failed Paint	Low	Low	Low	Low	Low	Low	Low		
Brick	Calcium Crust	Low	Low	Low	Low	Low	Low	Low	9	
Brick	Failed Mortar Joints	Low	Low	Low	Low	Low	Low	Low	1	H
Brick	General Soiling	Low	Low	Low	Low	Low	Low	Low		A
Concourse Curtain Wall	Damaged Mullions	Low	Low	Low	Low	Low	Low	Low	20	
Concourse Curtain Wall	Damaged Railing	Low	Low	Low	Low	Low	Low	Low	20	
Concourse Curtain Wall	General Soiling	Low	Low	Low	Low	Low	Low	Low		B
Concrete	Erosion	Low	Low	Low	Low	Low	Low	Low	22	
Curtain Wall	Bowing Metal	Low	Low	Low	Low	Low	Low	Low		D
Curtain Wall	Improve Drip Edge at Joint Cover	Low	Low	Low	Low	Low	Low	Low		K
Granite	Metallic Staining	Low	Low	Low	Low	Low	Low	Low	10	N
Insulated Paneling	Hardware Corrosion at Access Door	Low	Low	Low	Low	Low	Low	Low		
Lighting	Mismatched Fixtures	Low	Low	Low	Low	Low	Low	Low		
Lighting	General Maintenance	Low	Low	Low	Low	Low	Low	Low		
Limestone	Maintain Coping Caps	Low	Low	Low	Low	Low	Low	Low		
Brick	Metallic Staining	Low	Low	Low	Low		Low		10	

Priority Matrix - By Priority Level									Condition Drawings	
Exterior Element	Condition	Priority Rating per Building								
		220	221	222	223	224	225	226	Key Notes	General Notes
Granite	Biological Growth	Low	Low	Low					2	
Brick	Penetrations	Low		Low	Low	Low	Low		15	
Lighting	Corrosion and Pitting	Low		Low	Low	Low	Low		6, 6A	
Concourse Curtain Wall	Damaged Spandrel Panels	Low			Low	Low			17, 20	
Concrete	Failed Patches		Low	Low	Low		Low		5	K
Insulated Paneling	Corrosion and Pitting		Low	Low	Low				16	
Doors	Inappropriate Replacement		Low						25	
Concourse Curtain Wall	Inappropriate Replacement						Low	Low	20	

Priority Matrix - By Priority Level								
Interior Element	Condition	Priority Rating per Building						
		220	221	222	223	224	225	226
Architectural Metal	Penetrations	Low	Low	Low	Low	Low	Low	Low
Architectural Metal	General Soiling	Low	Low	Low	Low	Low	Low	Low
Architectural Woodwork	Flaking Finish	Low	Low	Low	Low	Low	Low	Low
Ceiling Tiles	Missing Tiles	Low	Low	Low	Low	Low	Low	Low
Ceiling Tiles	Corrosion	Low	Low	Low	Low	Low	Low	Low
Ceiling Tiles	Inappropriate Repair	Low	Low	Low	Low	Low	Low	Low
Ceiling Tiles	Misalignment	Low	Low	Low	Low	Low	Low	Low
Mosaic Tile	Cracked Tiles	Low	Low	Low	Low	Low	Low	Low
Plaster	Failed Paint	Low	Low	Low	Low	Low	Low	Low
Plaster	Impact Damage	Low	Low	Low	Low	Low	Low	Low
Structural Facing Tile	Failed Grout	Low	Low	Low	Low	Low	Low	Low
Structural Facing Tile	Inappropriate/Failed Paint	Low	Low	Low	Low	Low	Low	Low
Structural Facing Tile	Biological Growth	Low	Low	Low	Low	Low	Low	Low
Terrazzo	Spalls	Low	Low	Low	Low	Low	Low	Low
Terrazzo	Inappropriate Repair	Low	Low	Low	Low	Low	Low	Low
Terrazzo	Metallic Stain	Low	Low	Low	Low	Low	Low	Low
Terrazzo	Crack	Low	Low	Low	Low	Low	Low	Low
Terrazzo	Embedded Fastener	Low	Low	Low	Low	Low	Low	Low
Vinyl Asbestos Tiles	General Soiling	Low	Low	Low	Low	Low	Low	Low
Vinyl Asbestos Tiles	Inappropriate Repair	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Vinyl Asbestos Tiles	Broken Tiles	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Ceiling Tiles	Water Damage	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Plaster	Water Damage	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Slate	Water Staining	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Architectural Metal	Corrosion	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Architectural Metal	Failed Paint	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Architectural Metal	Failed Sealant	Medium	Medium	Medium	Medium	Medium	Medium	Medium

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SECTION E:
PREVIOUS STUDIES

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architecture

PREVIOUS STUDIES

Preservation Assessments

Historic Assessment National Institute of Standards and Technology Gaithersburg, MD, June 12, 2015
Metropolitan Architects & Planners and R. Christopher Goodwin & Associates, Inc.

Maryland Historical Trust Maryland Inventory of Historic Properties Form and Determination of Eligibility Form, June 12, 2015

Maryland Historic Trust Determination Letter, October 29, 2015

National Park Service Determination of Eligibility Notification, Jun 22, 2016

NIST Gaithersburg Campus entered into the NRHP with each of the GPLs noted as Contributory Resources to the 579 acre NRHD, August 6, 2021.

<u>Summary</u>

In June 2015, NIST commissioned an historic assessment of their campus to achieve the following goals:

- To develop a historic overview of NIST;
- To develop the background and administrative history of NIST;
- To identify the historical themes, time periods, and people significant to the history of NIST;
- To document resources located at the NIST Gaithersburg campus;
- To identify the range of properties associated with significant themes and time periods; and,
- To evaluate the significance and integrity of properties applying the National Register Criteria for Evaluation (36 CFR 60.4[a-d]) within the appropriate historic context.

When the report was completed, NIST submitted a Maryland Inventory of Historic Properties Form (MIHP) and Determination of Eligibility Form (DOE) to Maryland Historical Trust (MHT) to establish the historic character of the NIST Gaithersburg campus. The DOE proposed that NIST has integrity for a historic district under Criterion A for its association with events that have made important contributions to the broad patterns of history under the theme of Science and Technology and under Criterion C as a recognizable entity that embodies the characteristics of Postwar Research Campus design (National Register of Historic Places Criteria for Evaluation 36 CFR 60.4[a-d]). The proposed district only included 13 buildings and the designed landscape completed between 1965 and 1966 out of a possible 74 buildings, structures, objects, and landscapes.

In October 2015, MHT determined that the entire 578-acre NIST campus is eligible for listing on the National Register and rejected NIST Federal Preservation Officer's request to carve out a smaller district within the campus. In June 2016, the National Park Service concurred with MHT defining the period of significance as the initial period of campus construction from 1961-1969. On August 6, 2021 the entire NIST Gaithersburg campus was listed in the NRHP with all of the GPLs among the contributory resources.

Facilities Assessments

2022 Year-End Facility Deficiency Back Log Report

Fiscal Year 2021 Real Property Construction Activities
Summary

The year-end report is an annual audit for NIST-owned facilities using a USACE software program to identify deferred maintenance tasks for the building systems. These reports are updated annually for the GPLs to remove items that were completed and to add new deficiencies.

The Real Property report is a spreadsheet of completed projects that have been funded through OFPM operating budgets.

Master Plans

Preliminary Design National Bureau of Standards New Facilities, 1957
Vorhees, Walker, Smith & Smith

NIST Capital Improvements Facilities Plan, 1991 (Photo Survey)
Smith, Hinchman & Grylls Associates, Inc.
Johnson, Johnson

NIST Capital Improvements Facilities Plan, 1992 (Programming Phase Analysis
Smith, Hinchman & Grylls Associates, Inc.
Johnson, Johnson

General Purpose Laboratory (GPL) Revitalization Study – Phase 2, 2009
NIKA Technologies, Inc. and HDR CUH2A

Campus Master Plan, 2009
Mancini Duffy Architecture Design

NIST Space Utilization Study, 2013
Metropolitan Architects and Planners, Inc.

NIST Administrative Space Strategic Plan, 2014
OKKS Studios

NIST Research Facilities Strategic Plan, 2014
Metropolitan Architects and Planners, Inc.

NIST Gaithersburg Master Plan, May 2018
Metropolitan Architects and Planners, Inc.

Summary

According to general industry standard, buildings should undergo revitalization every 25 years to update and improve function and efficiency. However, in the case of the seven original GPL buildings on the NIST Gaithersburg Campus, no extensive renovations were made since their conception 46 years prior to the time of the 2009 Revitalization Study. This lapse in attention became evident thus NIST engaged NIKA Technologies, Inc. and HDR CUH2A to conduct a physical assessment of the GPLs to address the overall revitalization of the buildings.

This study was performed in three phases. The first phase, completed by April 2009, included an inspection of the existing conditions of the buildings' architectural components and engineering systems, conducting interviews with NIST Operating Unit leadership, and development of a preliminary space program as a result of the interviews. Phase 1 assessment concluded that the GPL buildings had been well maintained and structures were found to be sound. However, components of the building have exceeded or are near the end of their expected lives. Many of the components, due to age, are also not energy efficient. Some of the comprehensive findings that the team of professional architects and engineers found were that:

- The physical condition of the existing architectural and utility systems is substandard relative to contemporary laboratory design
- Laboratory design provides insufficient flexibility for utility upgrades and changes in laboratory use
- Existing utility systems are energy inefficient and need to meet current sustainability requirements and energy conservation directives

In addition to the physical findings, some of the recurring facility requirements that were mentioned in interviews included:

- Provide safer, user friendly and more efficient lab environments
- Retain flexible modular lab concepts, partitions and service trenches
- Provide clean air, reliable power, vibration control and exhaust capability required for scientific programs.
- Right-size building systems to achieve greater efficiency
- Incorporate service galleys into new and renovated space
- Provide freight elevators and paths for transporting heavy equipment
- Include Collaboration Areas, Break Rooms, Special Consideration Labs, and Facility Renovation Requests in modernized GPL space programs
- Use ACSL and AML as lab planning benchmarks.

Phase 2 of this study builds on the findings of Phase 1 by identifying various approaches for revitalizing the GPLs to provide maximum benefit with minimum disruption to scientific operations. This phase also investigates various solutions to accommodate for additional swing space. Phase 3 involves more detailed planning and development of preliminary concepts of the selected revitalization plan proposed in the second phase.

The 2009 campus master planning effort focused on integrating NIST's priority laboratory and support needs into the campus fabric, circulation system, and infrastructure framework. A Programmatic Environmental Assessment was completed simultaneously with the master plan and resulted in a finding of

No Significant Impact. The plan focused on new buildings (320, 207, 318, and 208) and additions to existing buildings (202, 205, 235, 301, 302).

Three studies attempted to understand how much space is available on the campus, how much space is needed for future operations, and what the needs are for administrative space versus research space. The 2013 Space Utilization Study documented all the space on the Gaithersburg campus and its use to provide a planning tool. The findings indicated the space has efficient utilization with 86% of laboratories and office space within the DoC utilization standards. Findings also suggested that organizations are fragmented across the campus and some labs are not used for their intended purposes. Both things compromise research missions and point to outdated infrastructure. The 2014 Administrative Space Strategic Plan Study found that approximately 295, 000 assignable square feet of space is needed and of that 142-168,000 assignable square feet is needed for administrative space alone. Recommendations included implementing shared offices, open workstations, standardized floor plans for Building 101 tower, and standard office furniture. The 2014 Research Facilities Strategic Plan found that 45% of the laboratories were functionally compliant or in the process of modernizing while 55% of the laboratories required upgrades. The study recommended a new “precision laboratory” facility and the gradual modernization of the special and general purpose laboratories over a multi-year program.

The recommendations from these previous reports were evaluated and augmented in the 2018 NIST Gaithersburg Master Plan. The master plan provides for the modernization of aging, inefficient building and accommodates growth over a 20-year period. The plan included approximately 1.4 million gross square feet of new facilities and renovations to 15 buildings. This plan concentrates new research buildings in the central campus core following a regular pattern linked by an interior pedestrian concourse. New specialty laboratories are placed outside the core, and the existing special purpose laboratories are planned for additions and renovations. Other campus recommendations include:

- Upgraded Campus Utilities
- Advanced Research Facilities
- Renovated Special Purpose Laboratories
- Secure Visitor Entry
- Gradual Growth
- Modernized General Purpose Laboratories
- Specialty Research Buildings
- Adaptive Reuse
- Connected Buildings
- Enhanced Conference and Visitor Facilities
- Historic Preservation
- Consolidated Shipping and Receiving
- Pedestrian Circulation
- Coordinated Parking Strategy
- Energy Conservation Emphasis
- Natural and Sustainable Campus
- Flexible, Incremental Growth and Change

The 2018 Master Plan prioritizes the modernization of the GPLs, accommodating for state-of-the-art measurement and technical laboratory facilities, computer laboratories, and office space and general support. Buildings 220, 221, 225, and 226 were the buildings named in the plan to be renovated for laboratory research because each have basements that are satisfactory for specialized research or existing high-bay space. Space is abundant and exceeds GPL lab and office needs, so it was decided that the remaining space would be renovated for general office space.

The latest Master Plan suggests implementing a Programmatic Agreement with Maryland Historical Trust and the Advisory Council on Historic Preservation as part of Section 106 of the National Historic Preservation Act of 1966 since the campus has been determined eligible on the National Register of Historic

Places. The agreement would streamline the Section 106 process by identifying standards for categories of routine projects and the review procedures for new construction and rehabilitation. The Plan further recommends the development of an internal Design Review Board at NIST to support the execution of NIST cultural resource management.

Historic Structure Reports

NIST Building 101 Historic Structure Report and Condition Assessment, Gaithersburg, MD, August 2019
John Milner Associates Preservation/MTFA Architecture

As NIST Gaithersburg prepares for renovations, NIST's Preservation Officer commissioned a historic structure report to understand the character-defining features of the Administration Building. The report documents the historic context of the buildings as well as its building chronology. It establishes Preservation Zones for future preservation planning. A major component of the report are inventories for each of the character defining spaces and elevations that act as stand-alone documents to define the original materials. The condition assessment portion focuses on the historic materials with an emphasis on structural probes to understand the bowing condition of the marble panels on the first story. All conditions are documented on drawings to show the location and extent of the issues. A final cost estimate provided a budget for maintenance priorities.

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SECTION F:

PRESERVATION OUTLINE SPECIFICATIONS

MTFA architecture

PRESERVATION OUTLINE SPECIFICATIONS

Section 01 3591 Historic Treatment Procedures

Section 02 4296 Historic Removal and Dismantling

Section 03 0130 Historic Cast-In-Place Concrete Restoration

Section 04 0310 Historic Masonry Cleaning

- Limestone
- Granite
- Brick

Section 04 0342 Historic Masonry Restoration

- Limestone
- Granite
- Brick

Section 04 0343 Historic Masonry Repointing

- Limestone
- Granite
- Brick

Section 05 0385 Historic Architectural Formed Metal Cleaning and Restoration

- Anodized Aluminum
- Steel

Section 07 6200 Sheet Metal Flashing and Trim

Section 07 9200 Joint Sealants

Section 08 1119 Historic Hollow Metal Doors and Frame

Section 08 4413 Historic Glazed Aluminum Curtain Wall Restoration

Section 09 2400 Historic Cement Plastering Restoration

- Stucco

Section 09 0313 Historic Ceramic Tile Restoration

- Glazed Structural Wall Tile

Section 09 5123 Historic Metal Tile Ceiling Restoration

Section 09 6519	Historic Resilient Tile Flooring Restoration • Vinyl Composition Tile
Section 09 6613	Historic Terrazzo Flooring Restoration
Section 09 0190	Maintenance Repainting

SECTION G:
GLOSSARY

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GLOSSARY

Anodized Aluminum – aluminum given a protective and/or decorative coating through anodization, an electrolytic passivation process.

Coping – in wall construction, a protective cap over the wall's horizontal top surface. Copings may be metal, masonry, or wood and are typically sloped or beveled to shed water.

Curtain Wall – an exterior wall assembly that hangs from the floor slabs of a multi-story building. Curtain wall assemblies typically consist of large glass panels set in a metal frame. Infill panels can also be metal or masonry. The assembly differs from a typical exterior wall in that it is not load bearing. Curtains walls support only their own weight and any loads imposed on them. These loads are transferred back to the primary structure of the building at the floor slabs.

Colonial Revival Style –Popular from the 1880s to the 1940s, this style referenced the original colonial era did not imitate it exactly. Architects began to use design elements from the American Revolution War-era, like pedimented or gabled windows, pronounced front porch and entrances, pilasters and columns, front doors with fan lights or side lights, and Palladian windows, and adapted them onto residences, banks, libraries, churches, government buildings, and schools.

Concourse – One definition of concourse is a hall where paths meet. VWWSH intended the concourse to be a connecting hallway between the General Purpose Libraries which served not only to connect the different scientific disciplines of each building but also to allow for spontaneous meetings to spark new ideas.

Demountable Partition – Demountable partitions are wall systems that can be removed and reinstalled into a different configuration.

Fascia – a flat, horizontal member covering the joint between the top of a wall and projecting rafters or between the vertical and horizontal structural members of a screen assembly.

International Style - In 1932, historian Henry-Russell Hitchcock and architect Philip Johnson presented an exhibition and companion book at the Museum of Modern Art in New York that chronicled contemporary European architecture. The "International Style" exhibition coined the style name and introduced these radically modern buildings to an American audience. Hitchcock and Johnson laid out three key design principles of the International Style:

1. Architecture as volume – thin planes or surfaces create the building's form, as opposed to a solid mass.
2. Regularity in the facade, as opposed to building symmetry.
3. No applied ornament.

Modular - composed of standardized units or sections for easy construction or flexible arrangement.

Spandrel Panel - In a building with more than one floor, the term spandrel is also used to indicate the space between the top of the window in one story and the sill of the window in the story above. A spandrel panel is a piece of metal trim used in the spandrel location.

SECTION H:

CONDITION DRAWINGS

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LIST OF CONDITION DRAWINGS

Building 220

Building 221

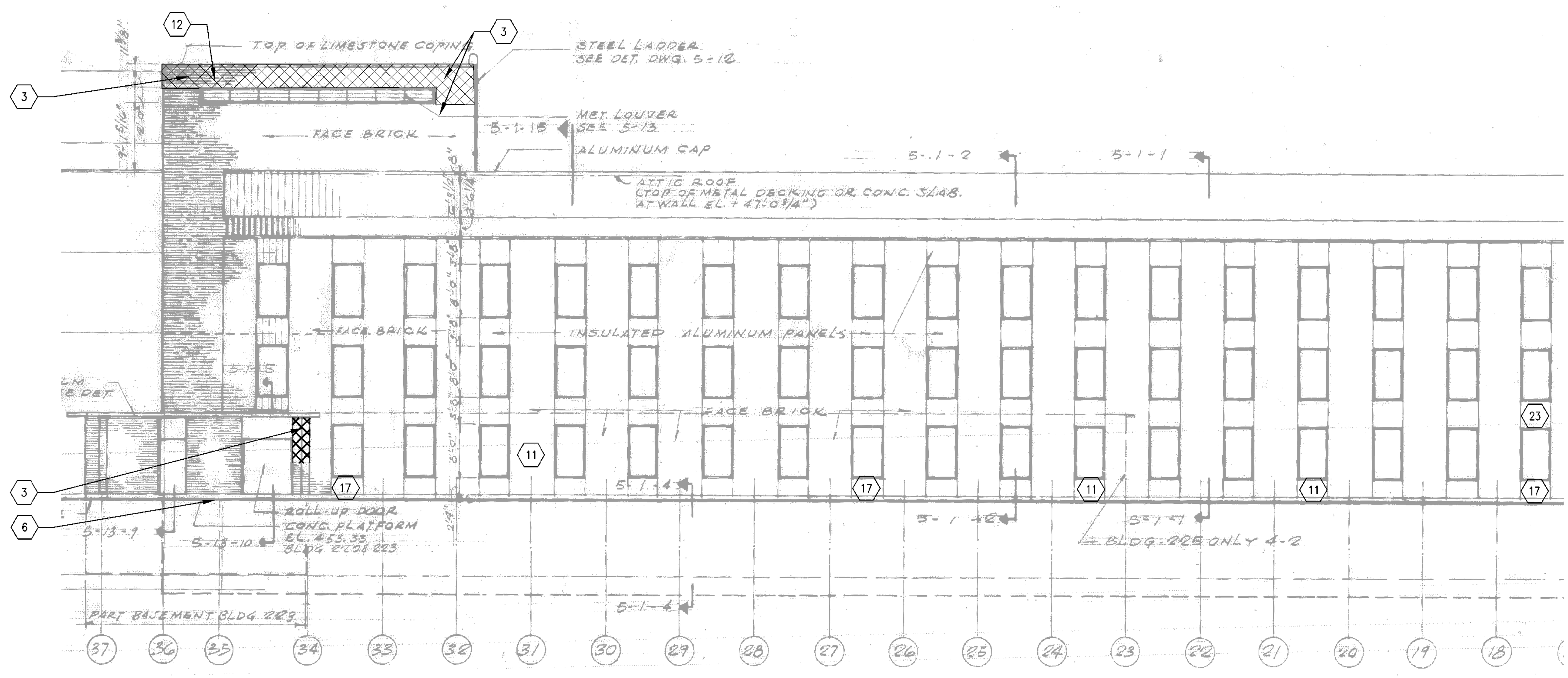
Building 222

Building 223

Building 224

Building 225

Building 226



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.

2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.

3. BRICK STEP CRACKING.

3A. CRACK IN CONCRETE OR CONCRETE STUCCO.

4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.

6A. CLEAN POLISHED METAL TO REMOVE CORROSION.

7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
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12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
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17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
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GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.

B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.

D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.

E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.

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M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.

N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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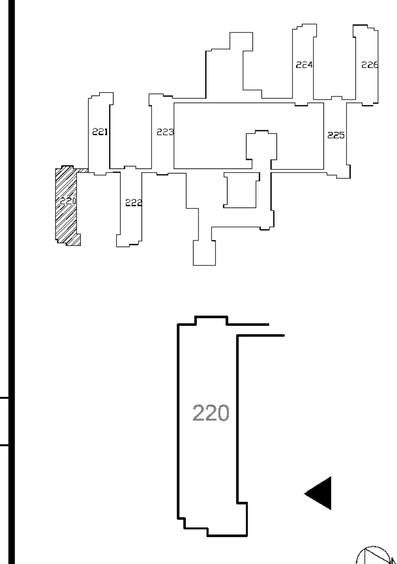
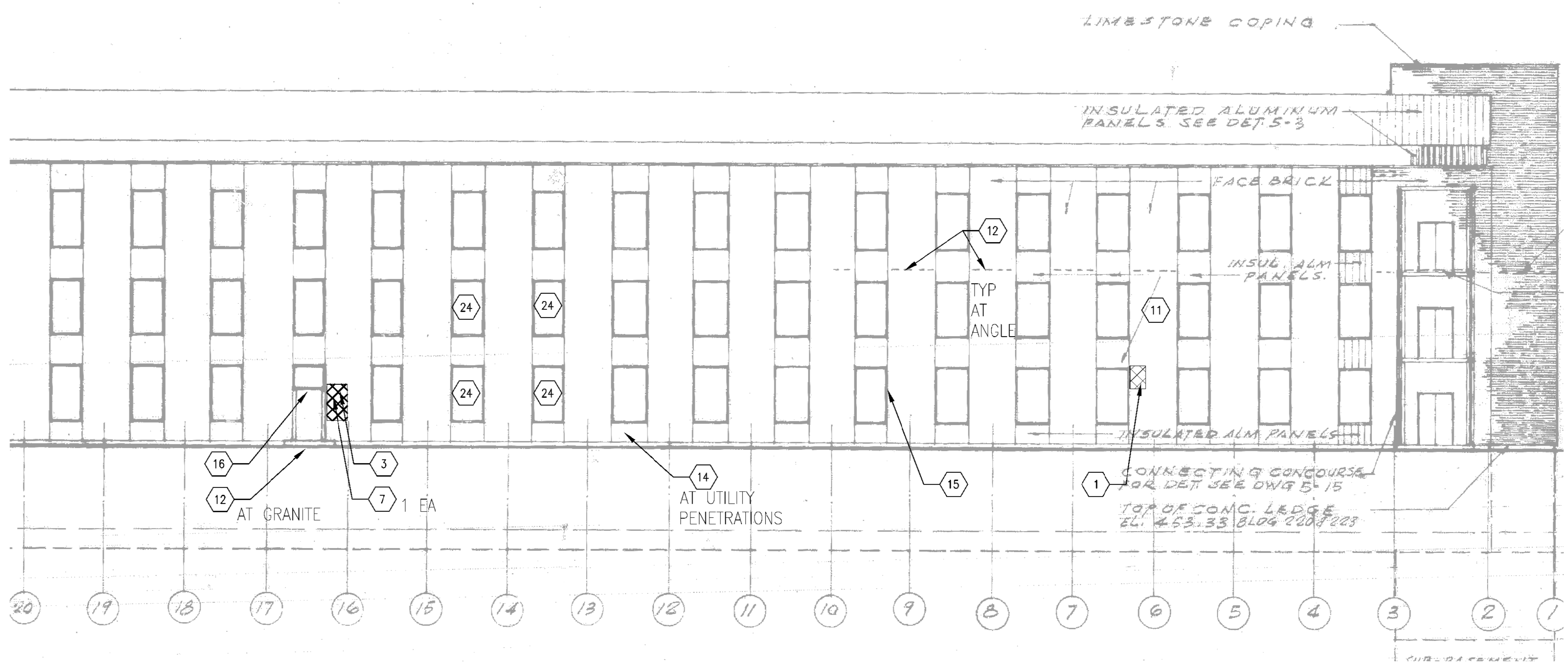


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 220: North Elevation 1**

Sheet # **A101**



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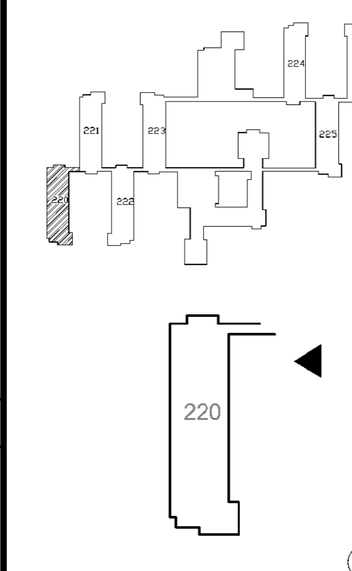

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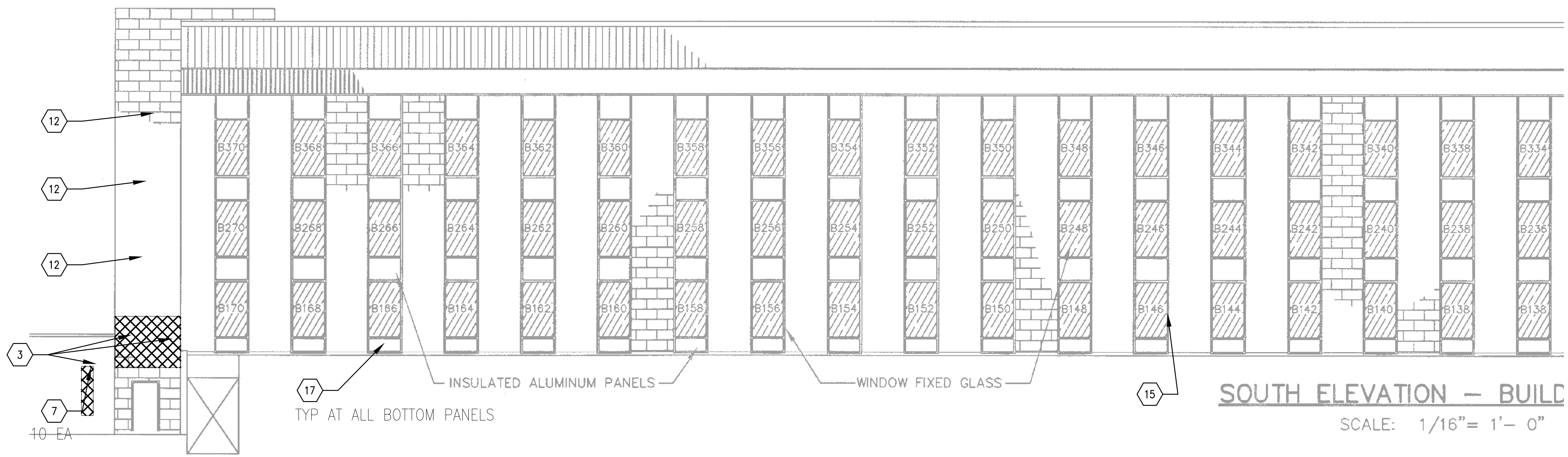
Sheet Title:
Building 220: North Elevation 2

Sheet #
A102



SOUTH ELEVATION – BUILD

SCALE: 1/16"= 1'– 0"

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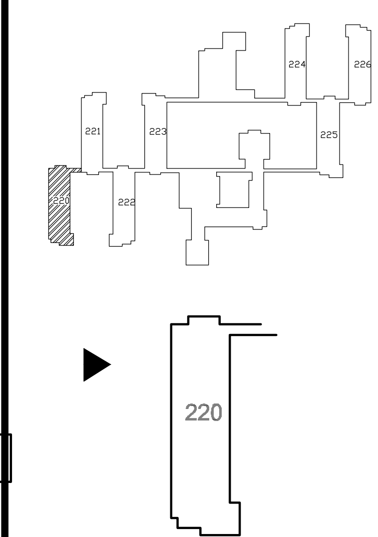

Drawn: Sara Baum
Checked: ADE
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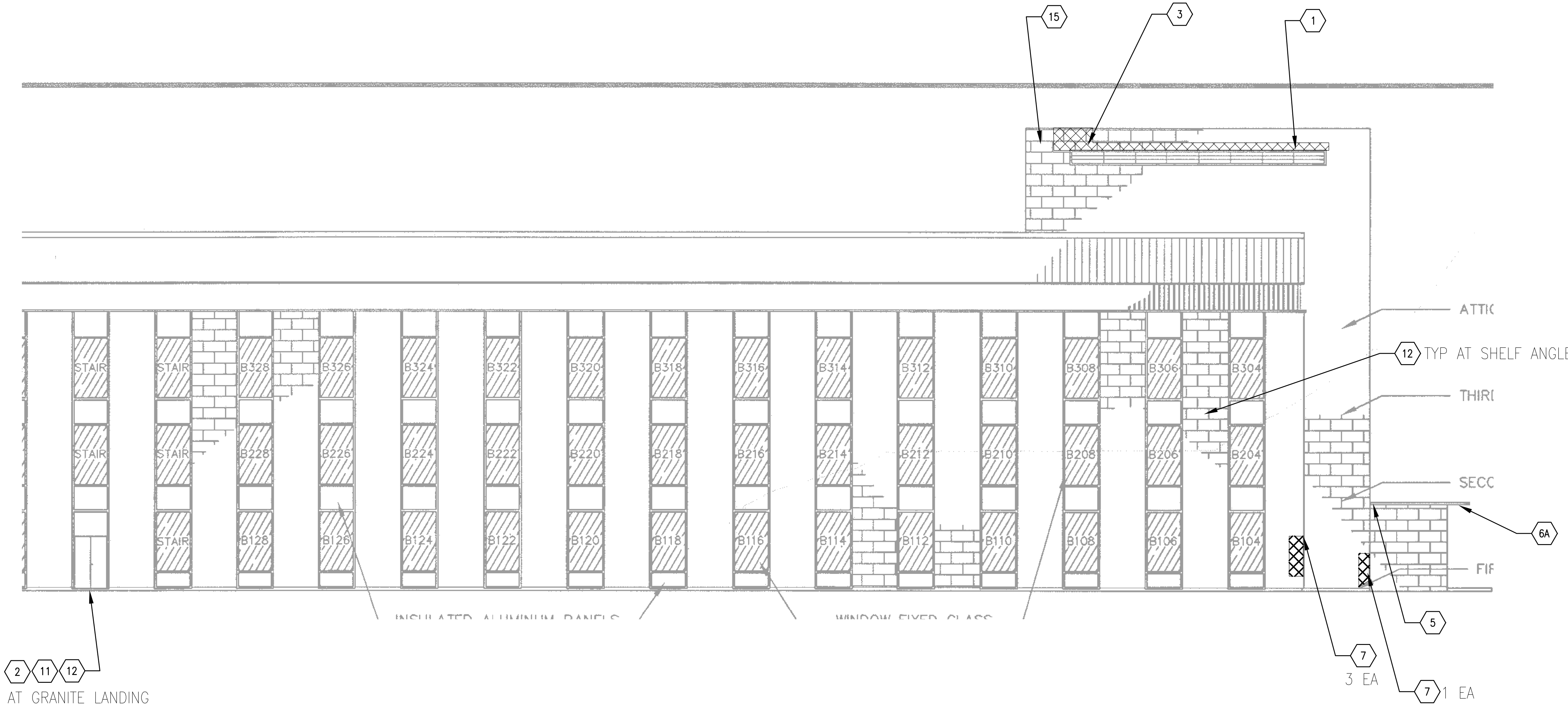
Sheet #
A103



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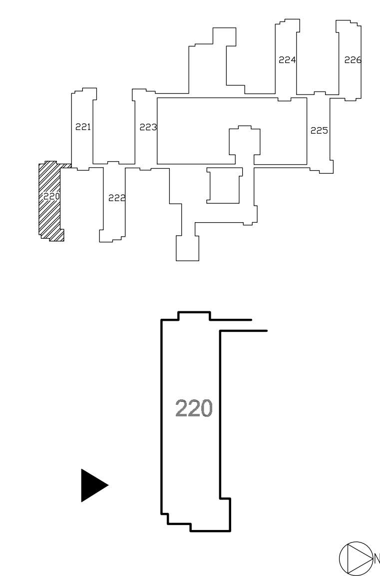

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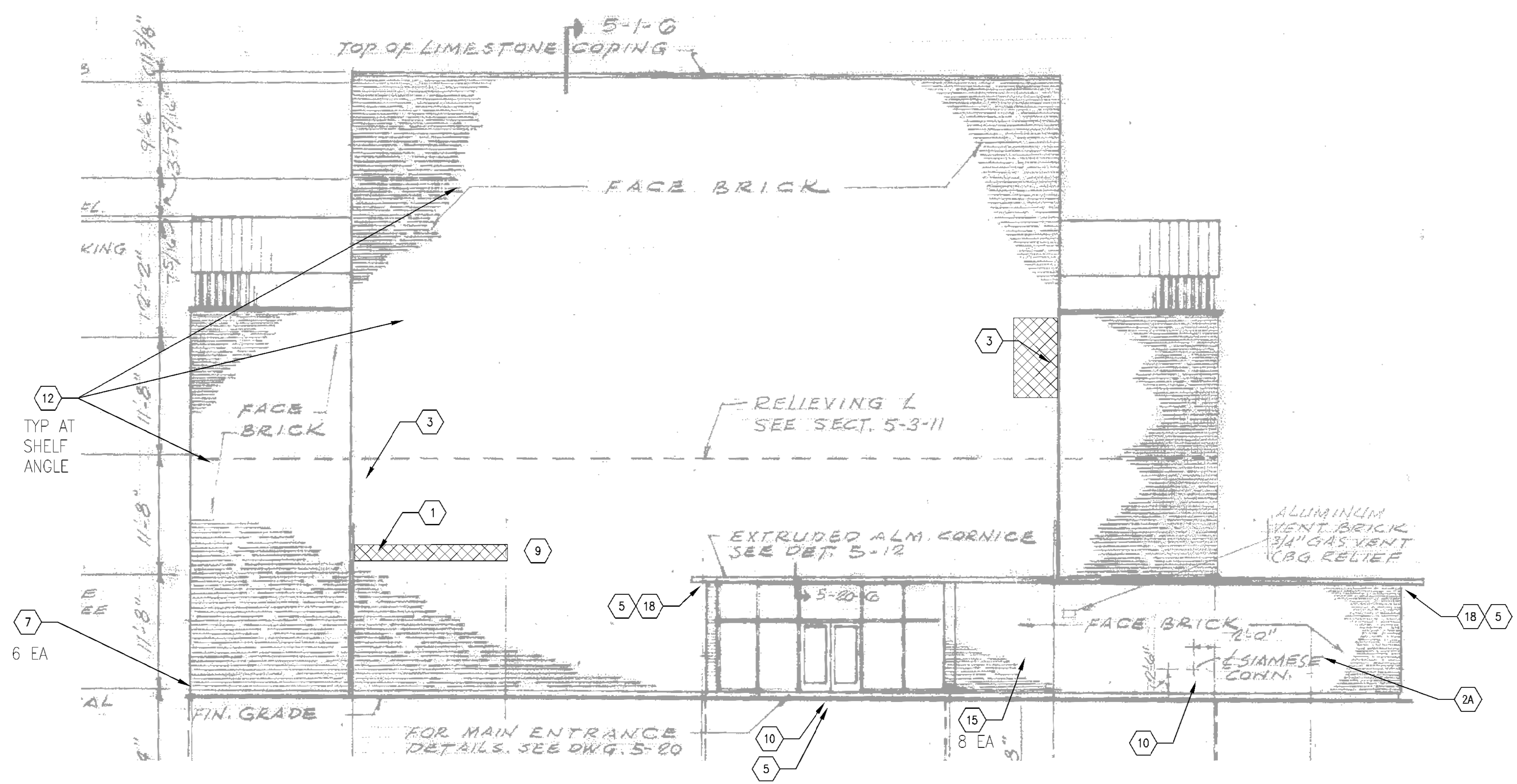
Sheet # **A104**



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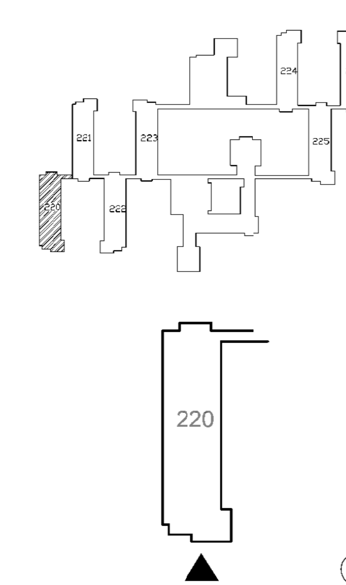

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Checked: ADE
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Sheet Title:
Building 220: East Elevation

Sheet #
A105

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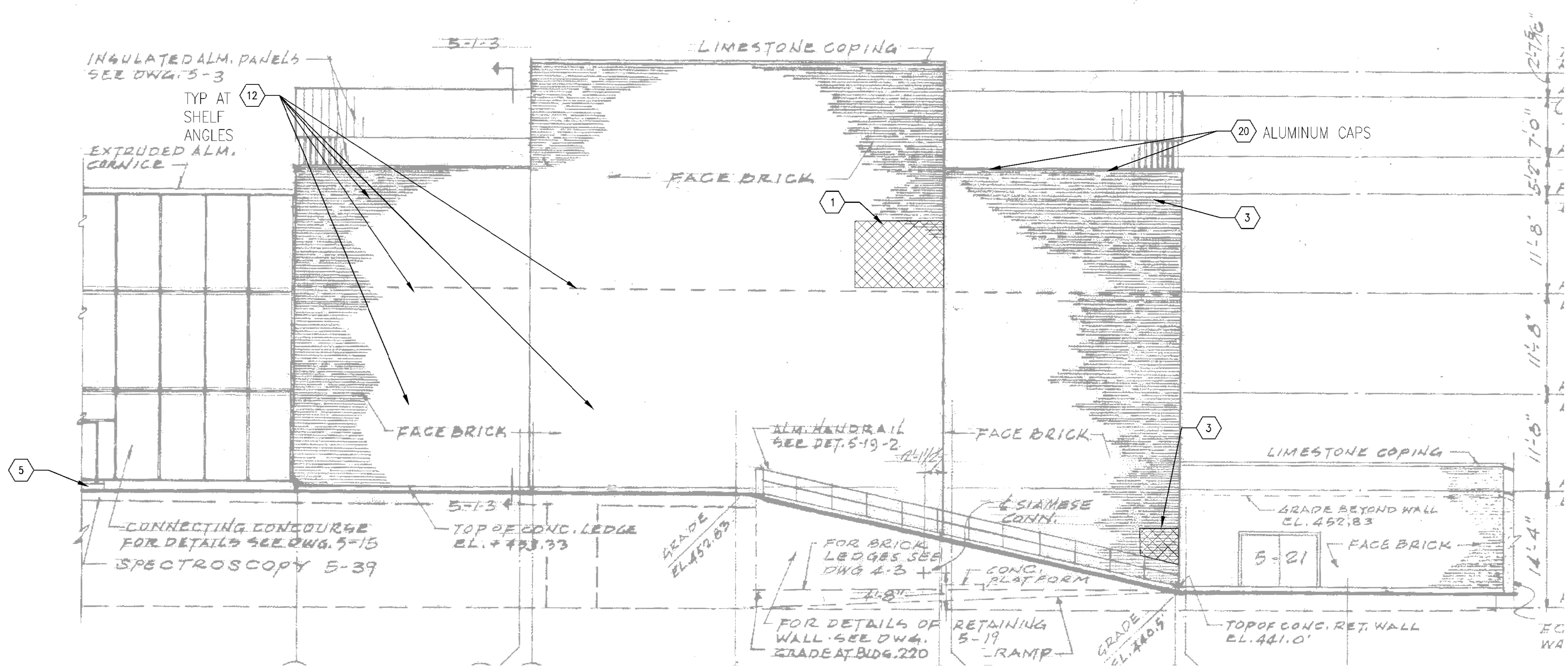

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B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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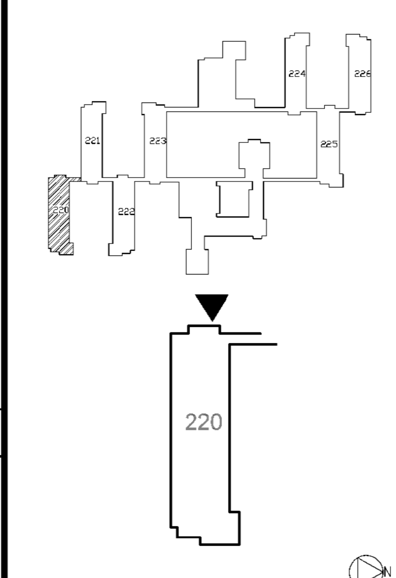
Key Plan



Drawn: Sara Baum
Checked: ADE
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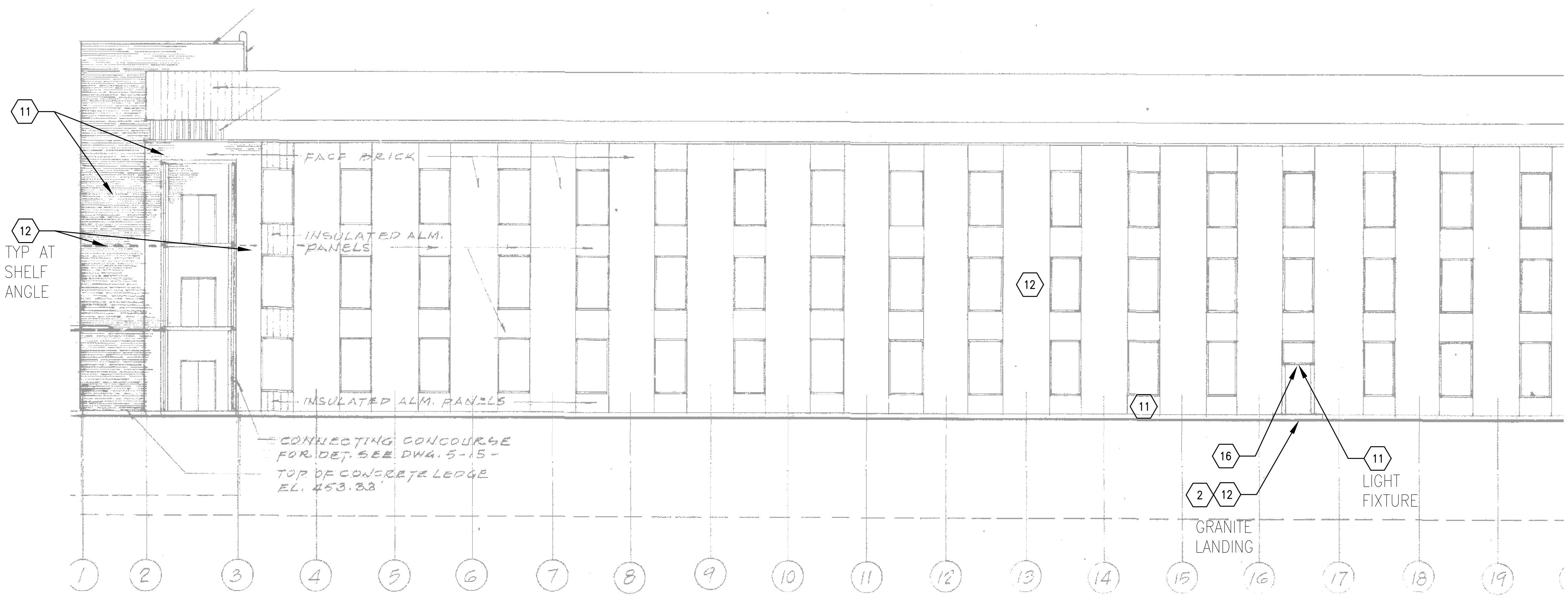
Sheet Title: **Building 220: West Elevation 1**

Sheet # **A106**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
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10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

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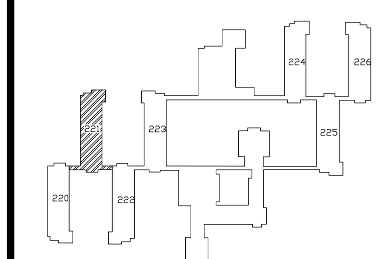

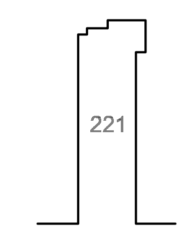

Drawn: Sara Baum | Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"

Sheet Title:
Building 221: North Elevation 1

Sheet #
A107

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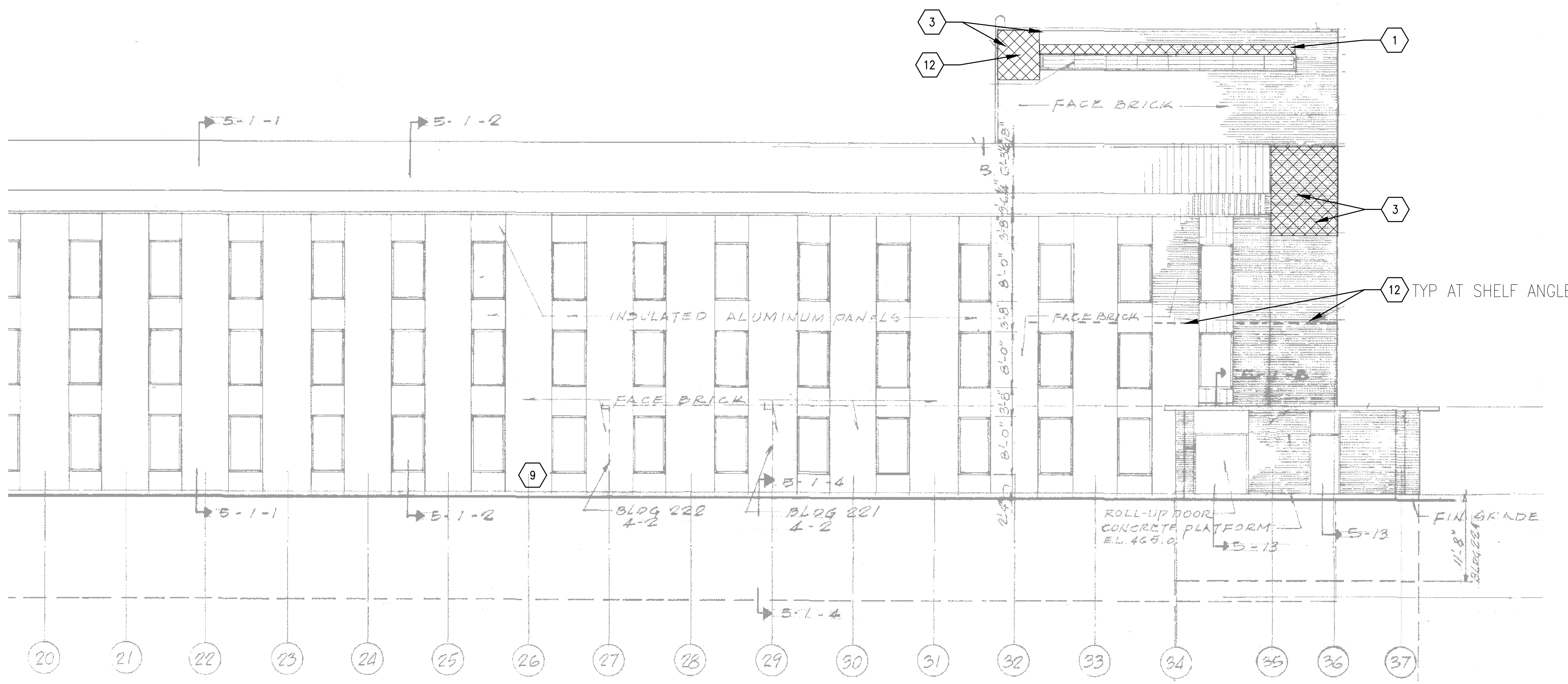

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
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18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
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GENERAL NOTES

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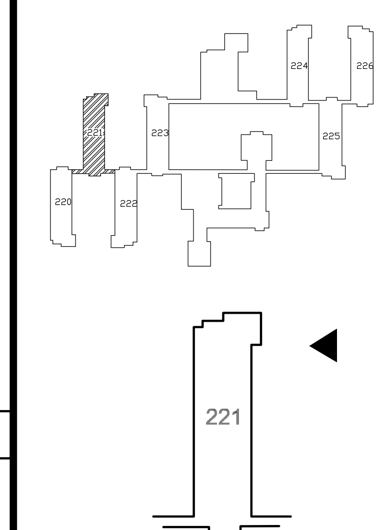
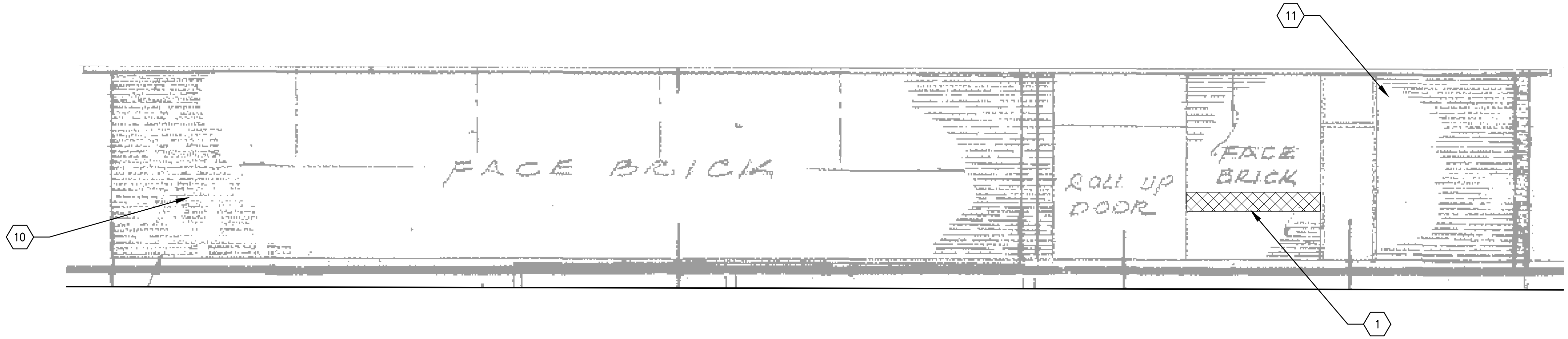


Drawn: Sara Baum
Checked: ADE
Scale: 1/16" = 1'-0"
NOT TO SCALE
Sheet Title: **Building 221: North Elevation 2**

Sheet # **A108**



KEY NOTES

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GENERAL NOTES

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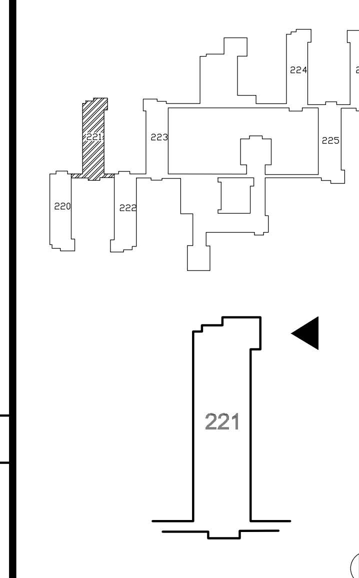

Drawn: Sara Baum
Checked: ADE
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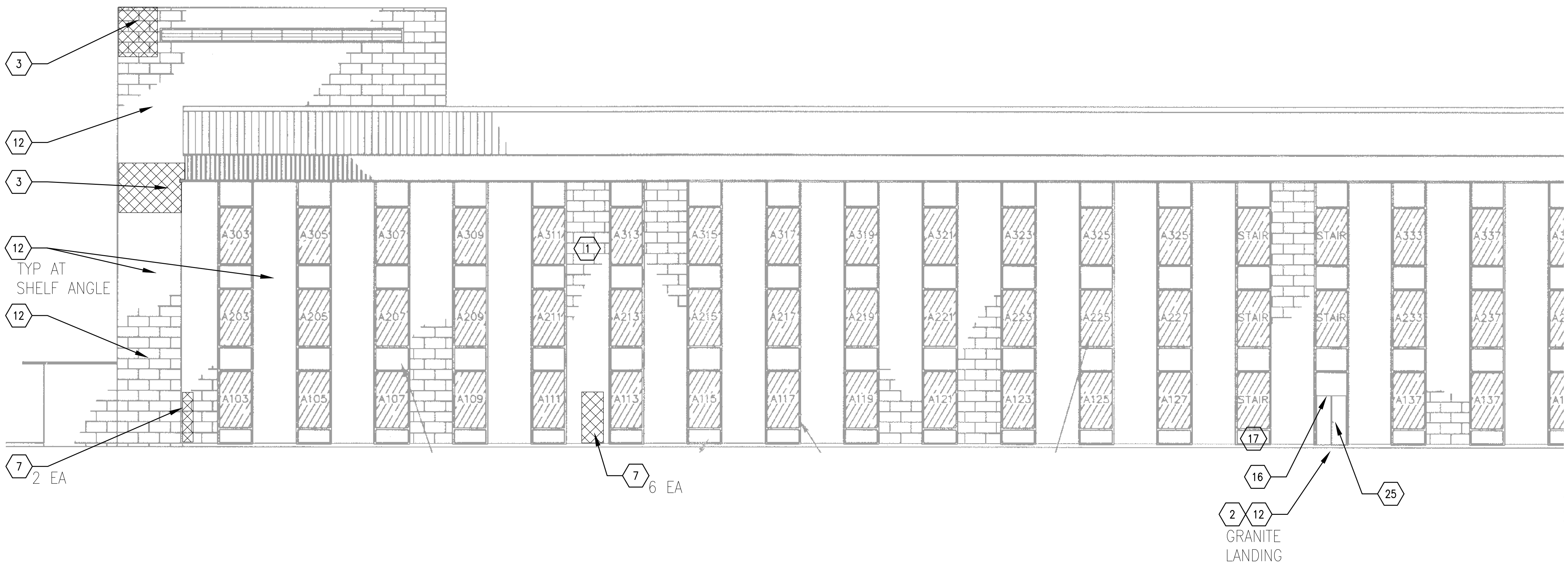
Sheet Title: **Building 221: North Elevation 3**

Sheet # **A109**



KEY NOTES

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GENERAL NOTES

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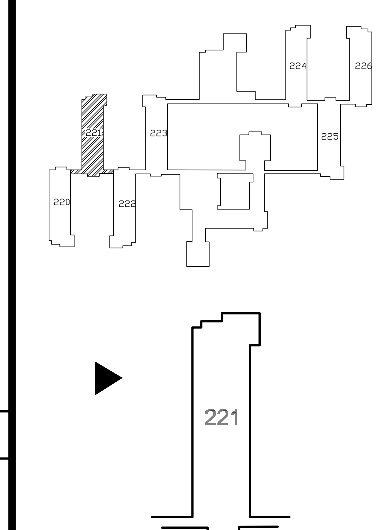

Drawn: Sara Baum
Checked: ADE
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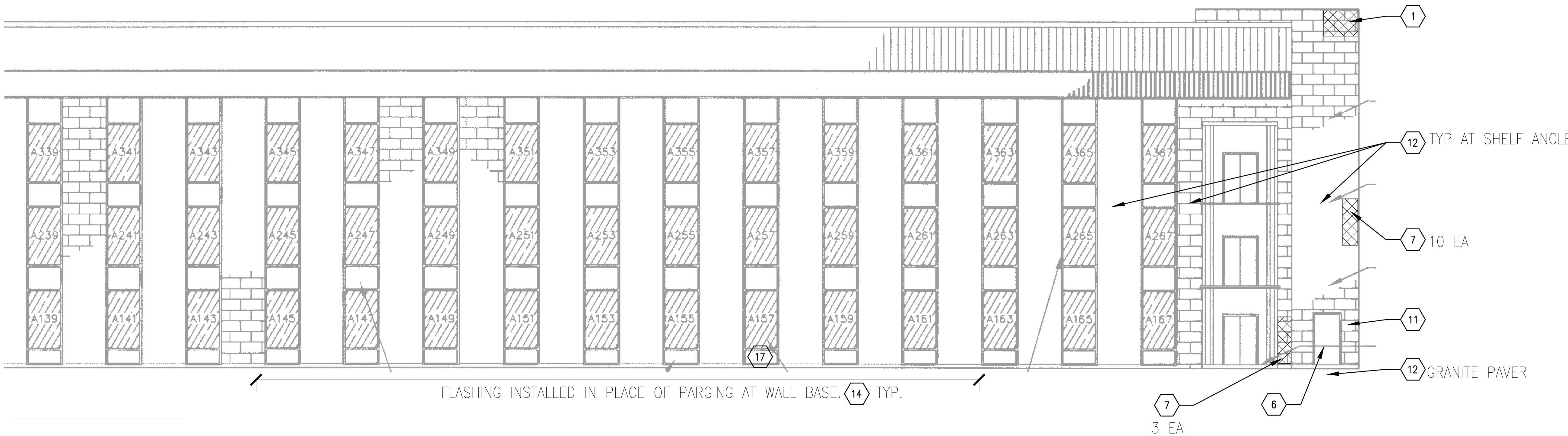
Sheet Title: **Building 221: South Elevation 1**

Sheet # **A110**



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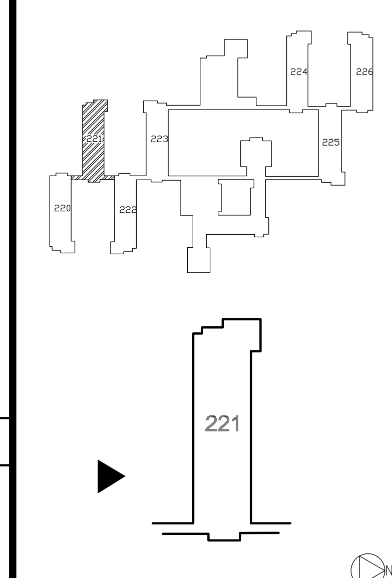

Drawn: Sara Baum
Checked: ADE
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NOT TO SCALE
Sheet Title: **Building 221: South Elevation 2**

Sheet # **A111**

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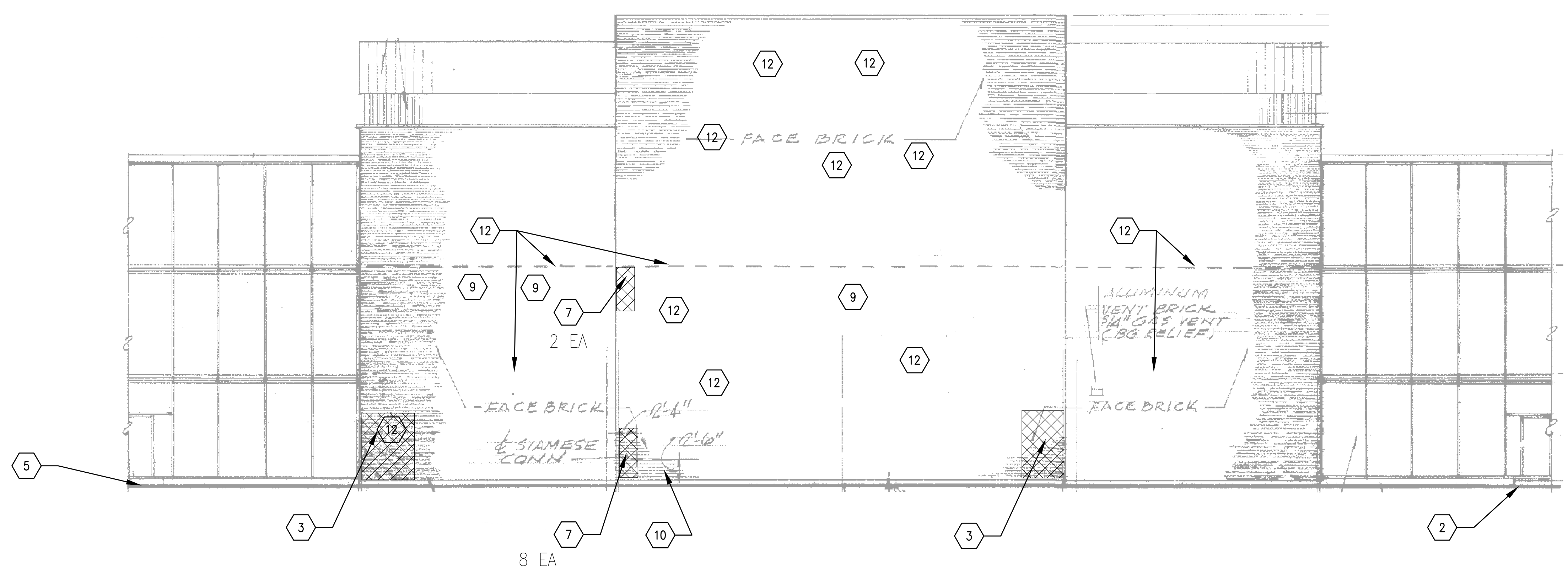

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25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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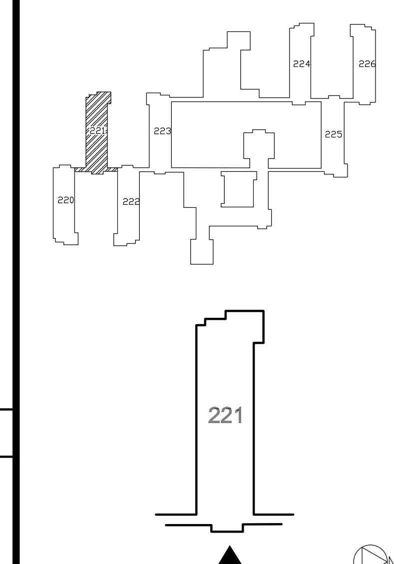
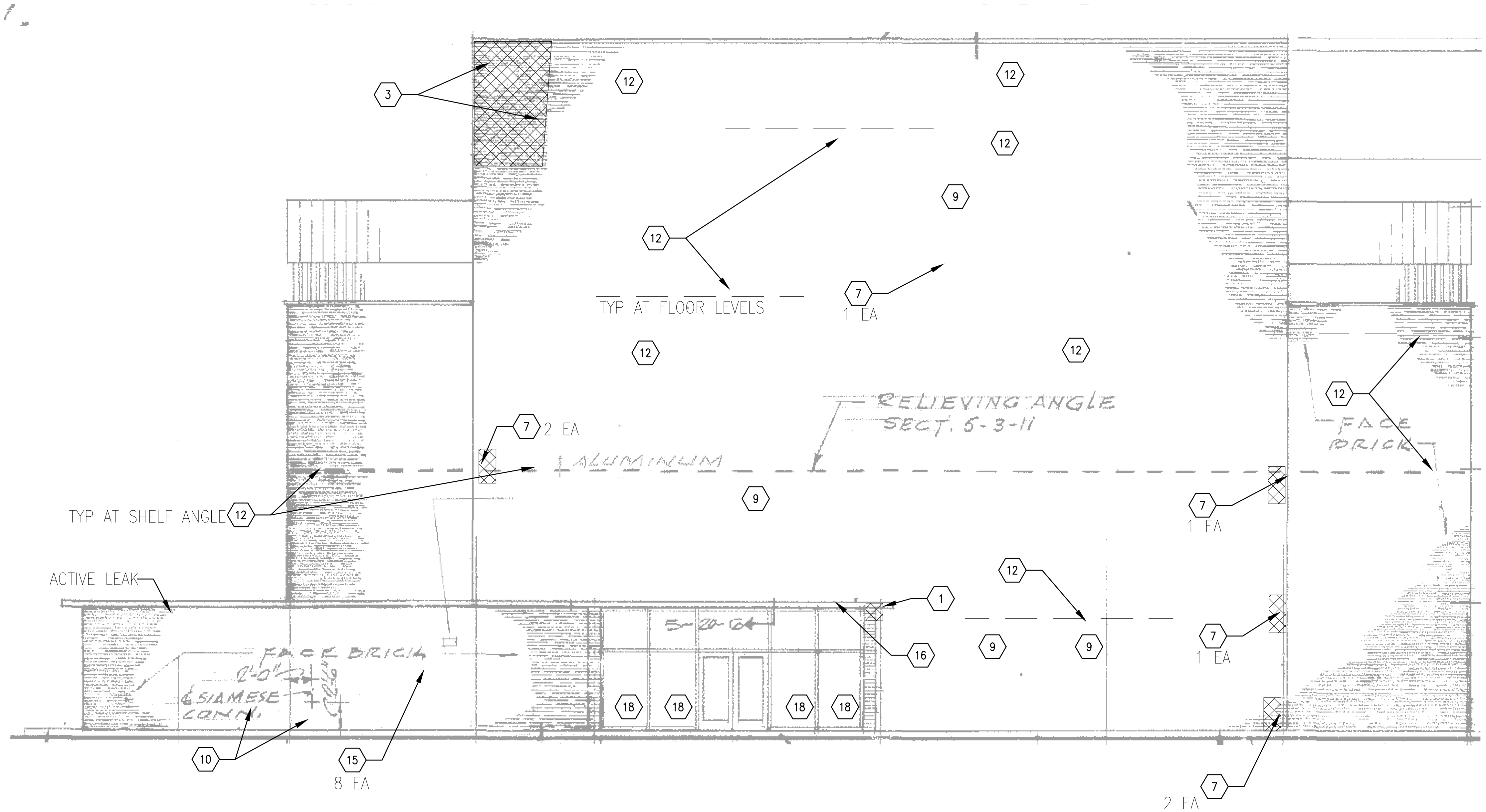
Key Plan



Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 221: East Elevation**

Sheet # **A112**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
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GENERAL NOTES

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G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
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M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
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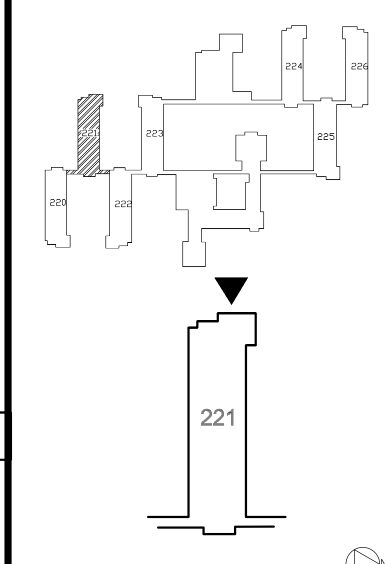
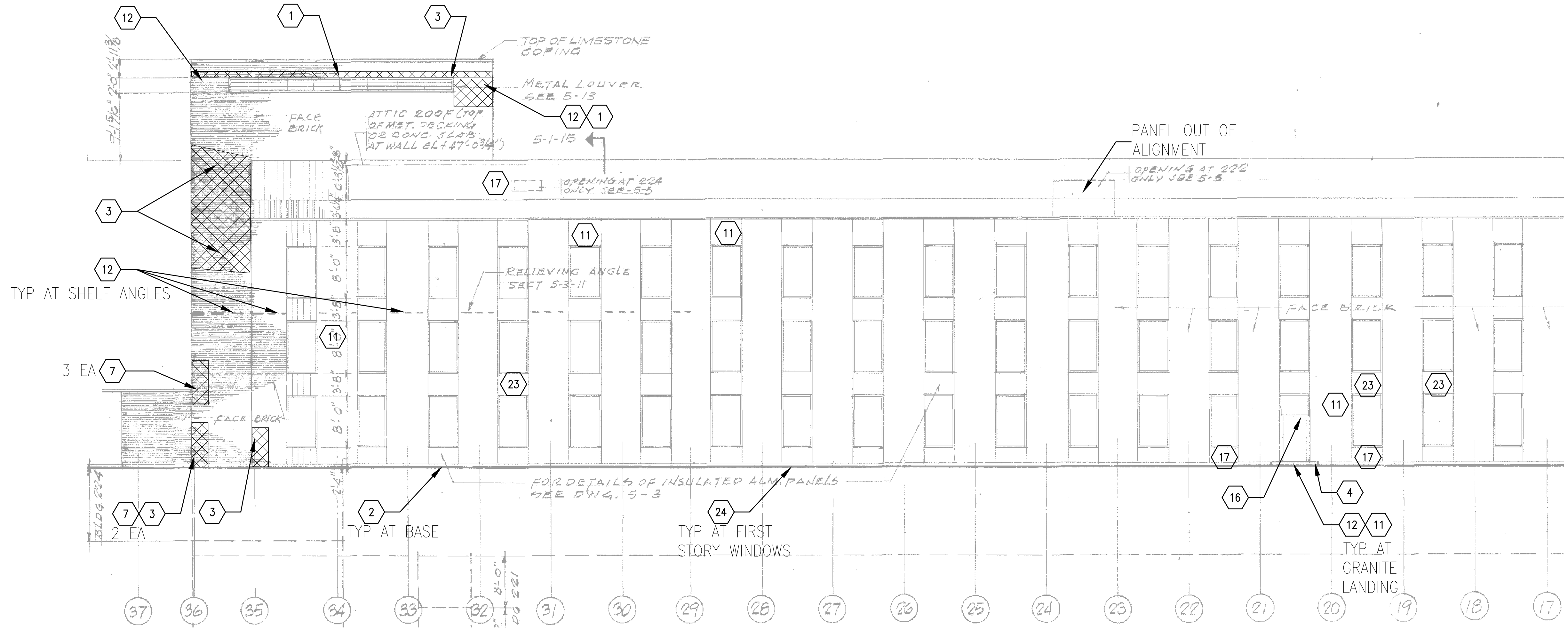


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 221: West Elevation**

Sheet # **A113**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
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4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
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6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
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17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
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GENERAL NOTES

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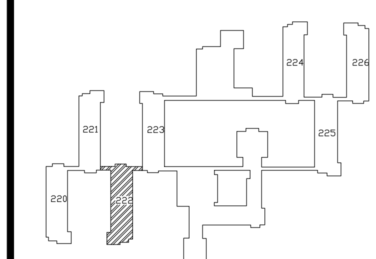
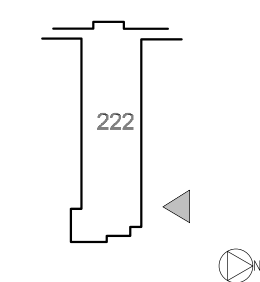
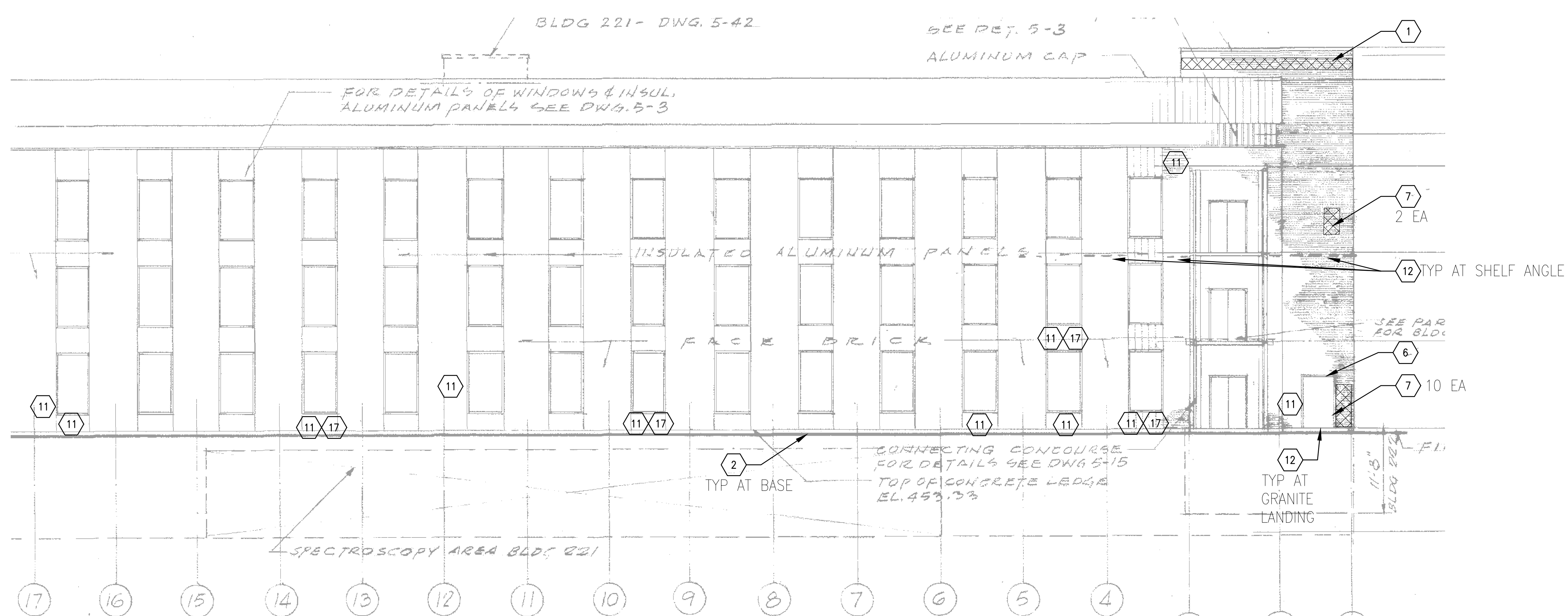




Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 222: North Elevation 1**

Sheet # **A114**



KEY NOTES

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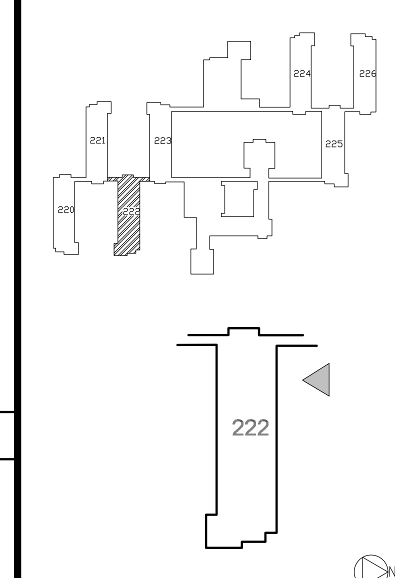

Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 222: North Elevation 2**

Sheet # **A115**

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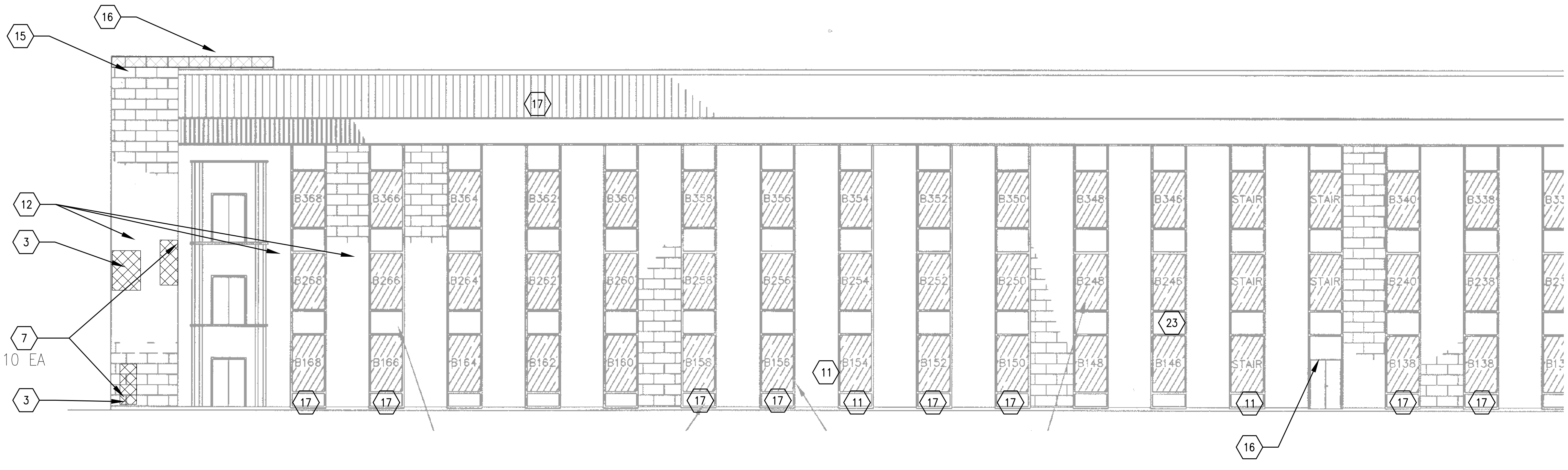

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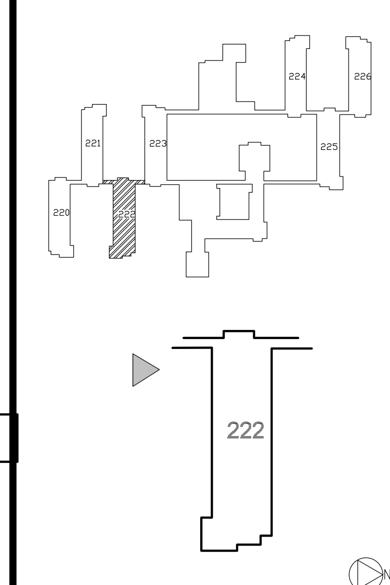
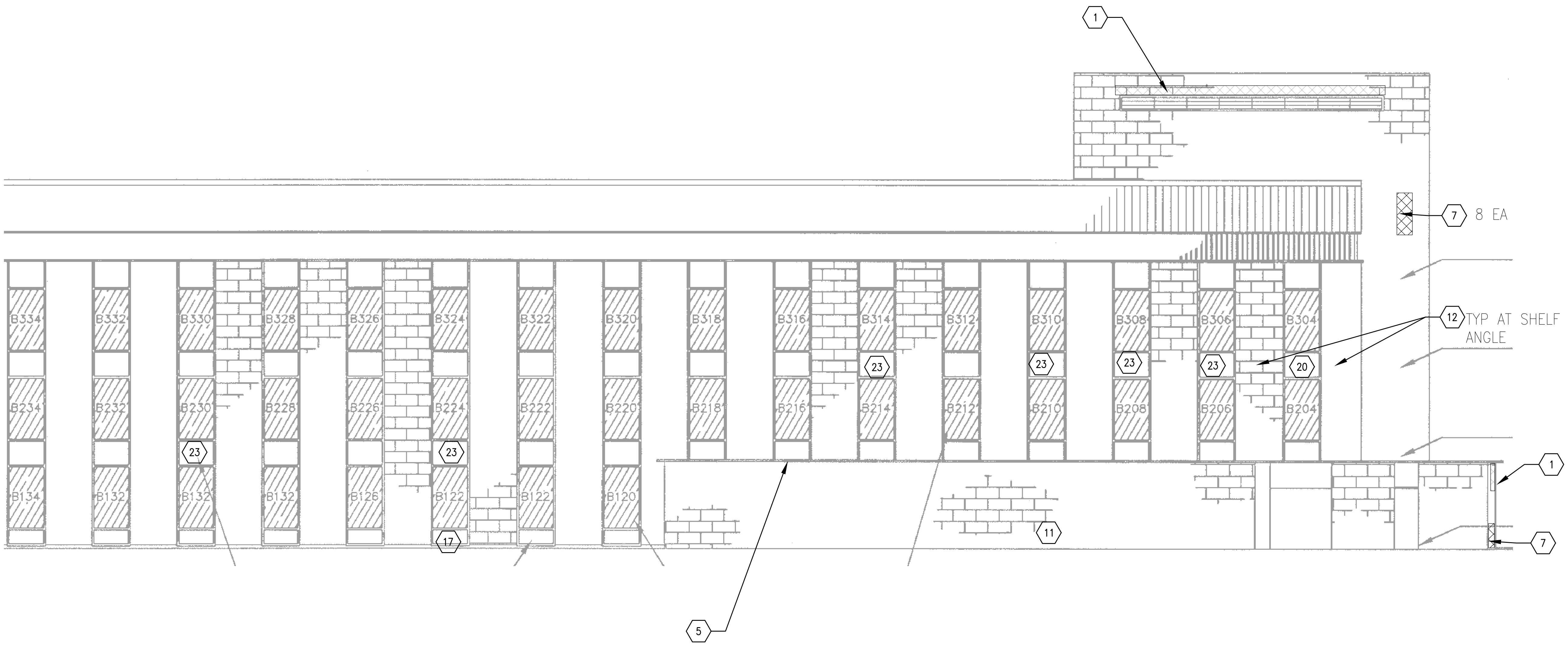


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"

Sheet Title:
Building 222: South Elevation 1

Sheet # **A116**



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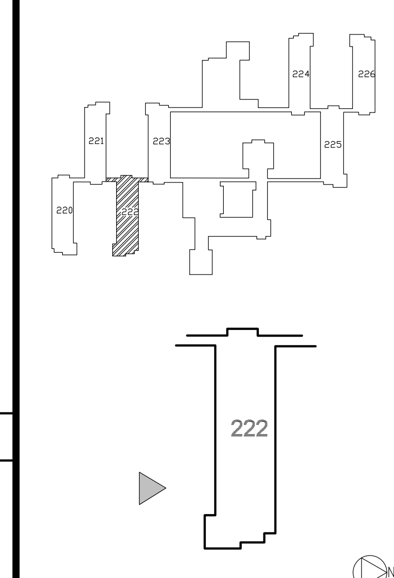
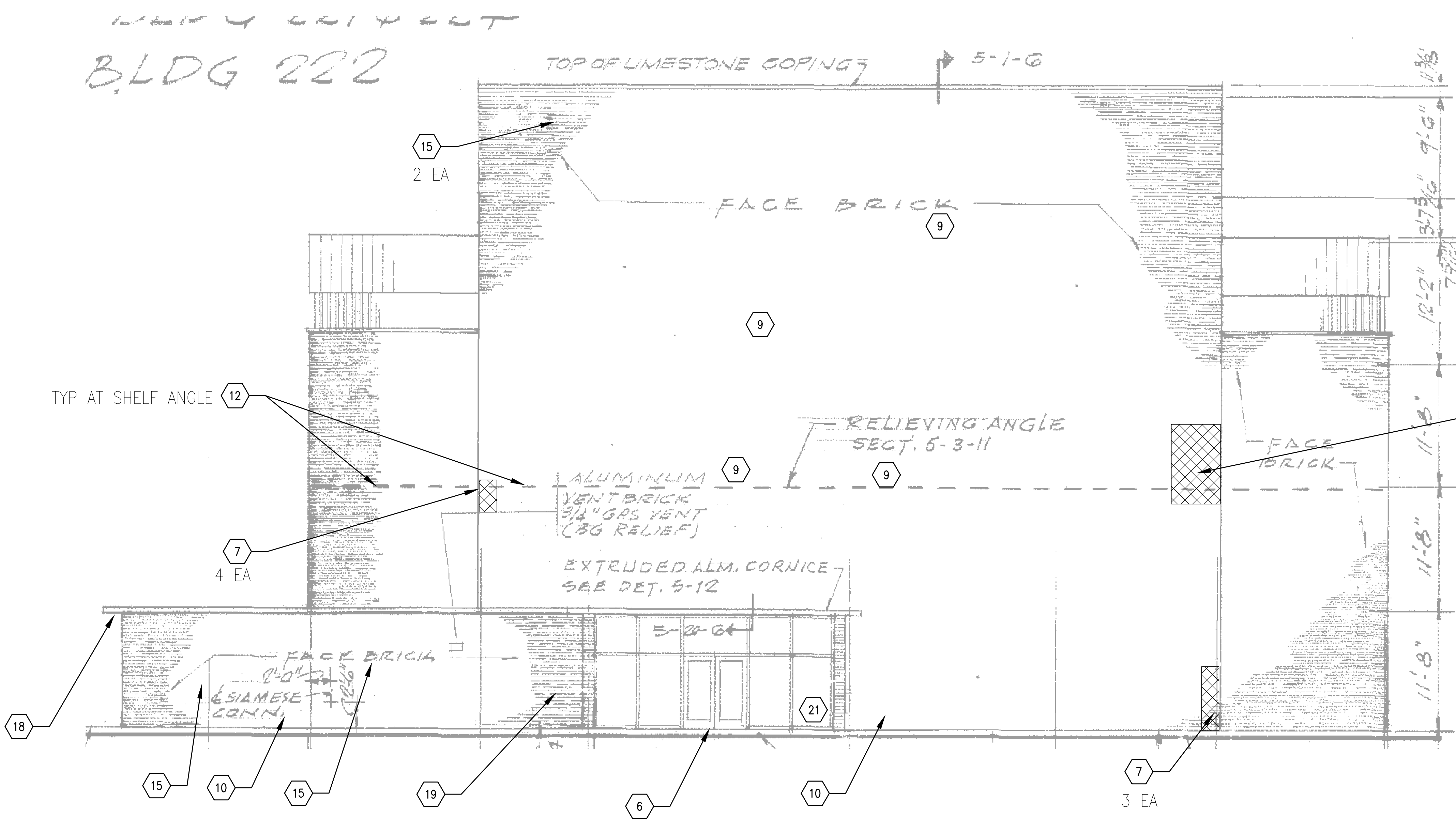


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"

Sheet Title:
Building 222: South Elevation 2

Sheet #
A117



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23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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703-524-6616 Fax: 524-6618 mtfa.net

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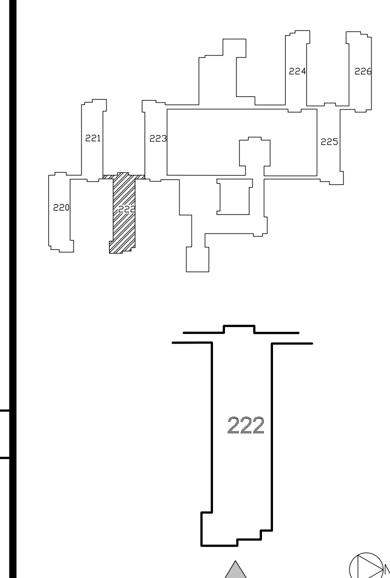
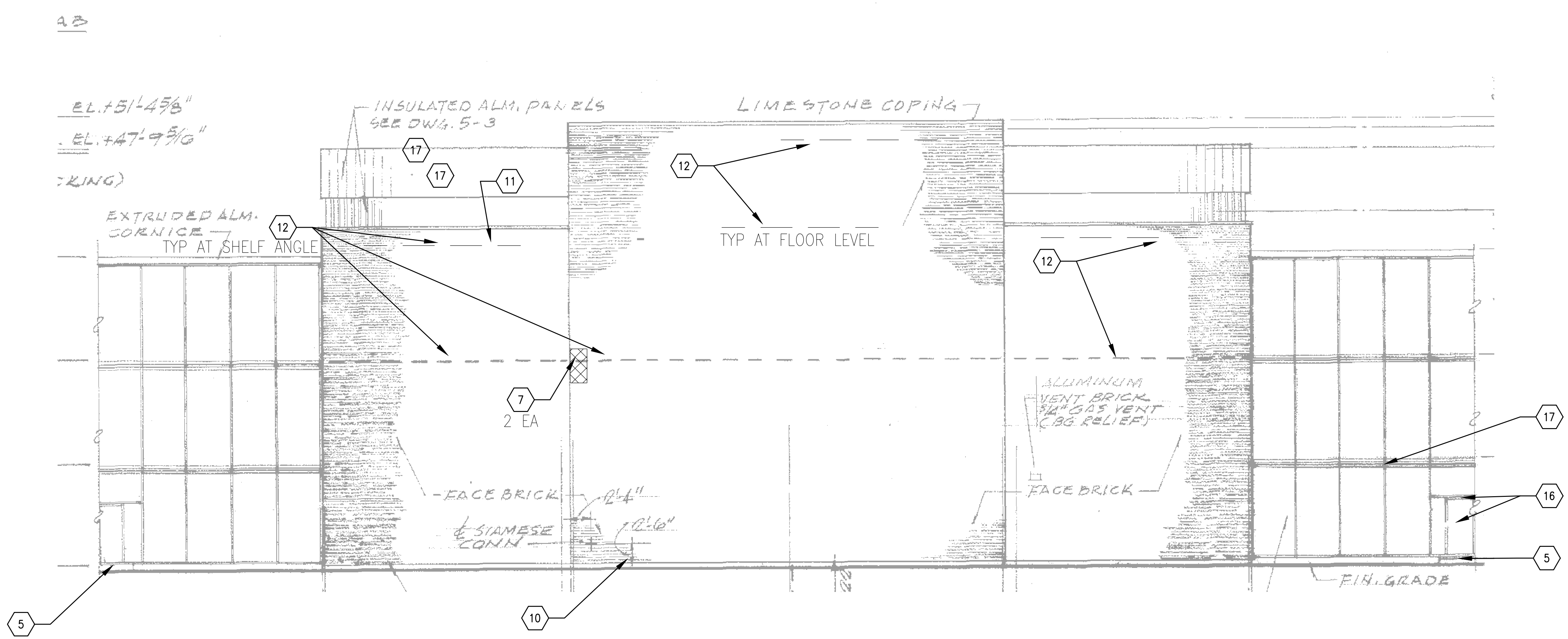
Key Plan



Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 222: East Elevation**

Sheet # **A118**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
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J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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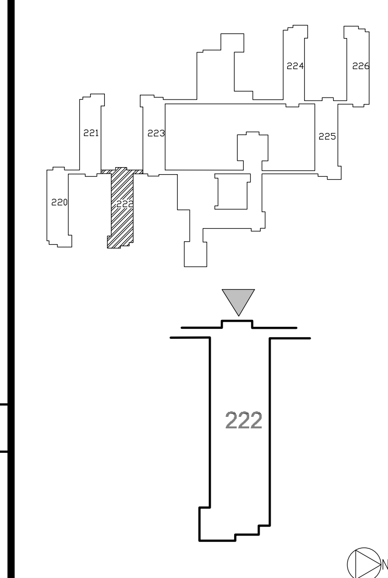

Drawn: Sara Baum Checked: ADE

Scale: NOT TO SCALE 1/16" = 1'-0"

Sheet Title: **Building 222: West Elevation**

Sheet # **A119**

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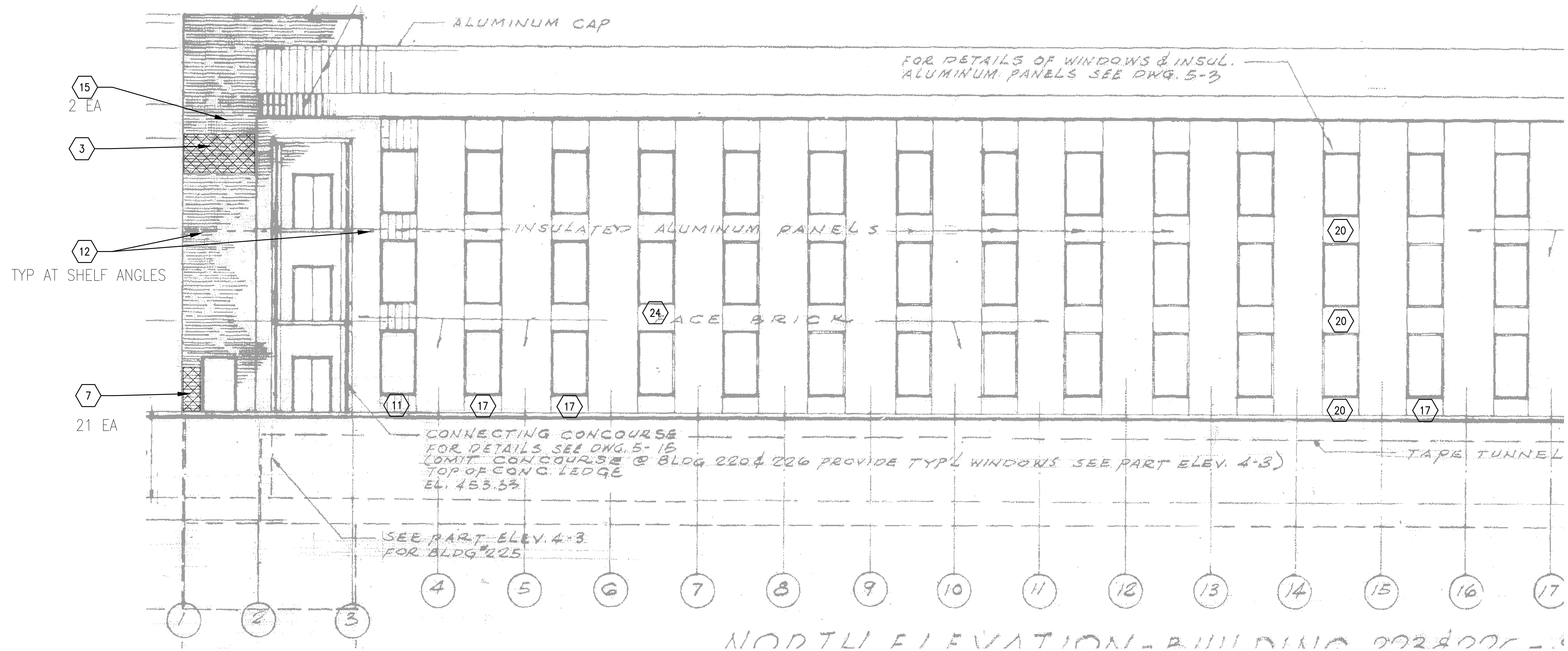

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
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2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
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8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
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13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
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16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
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25. ORIGINAL DOOR.
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GENERAL NOTES

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M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
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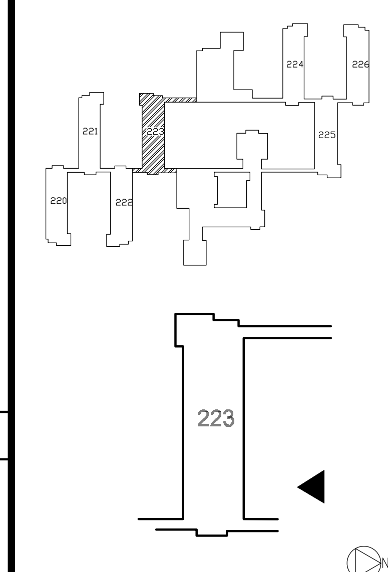
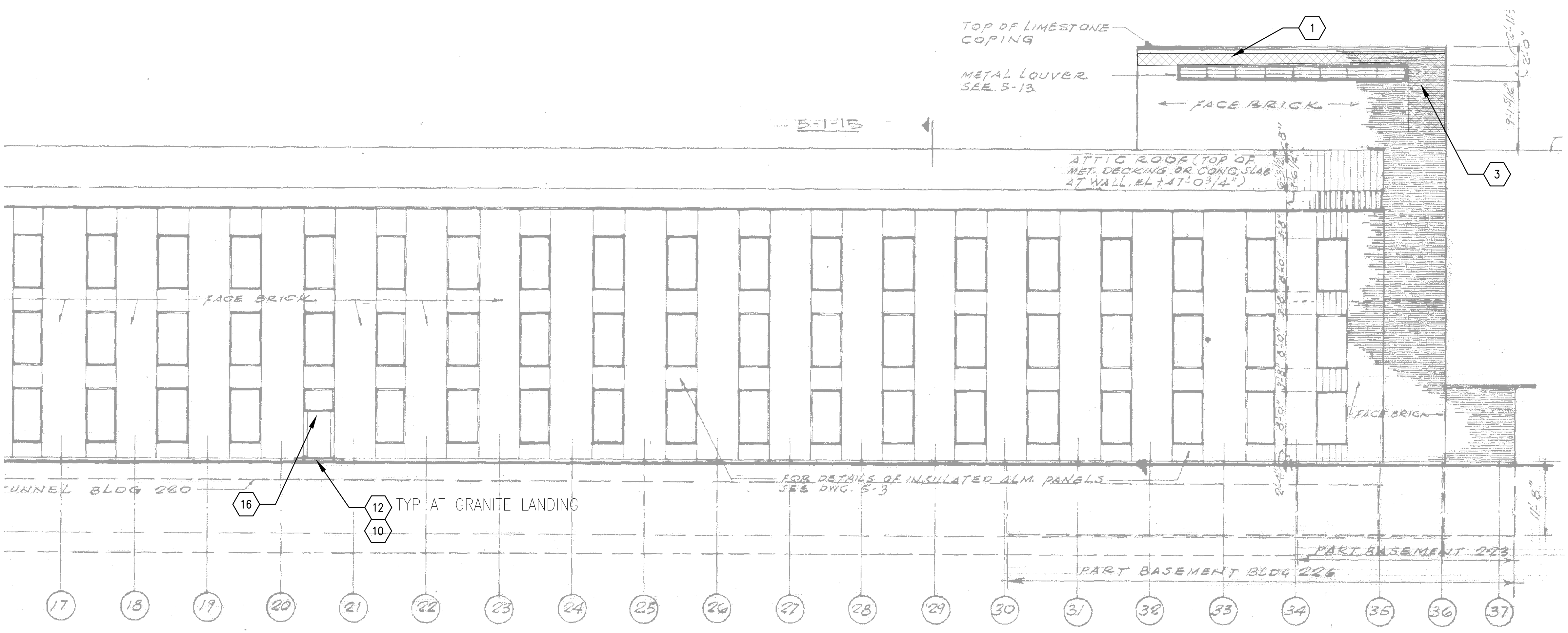


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 223: North Elevation 1**

Sheet # **A120**



KEY NOTES

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26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
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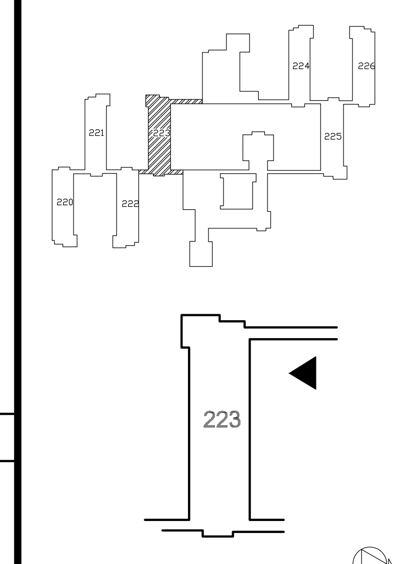

Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 223: North Elevation 2**

Sheet # **A121**

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
- 2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
- 3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
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17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
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20. REPLACE ALUMINUM ELEMENT.
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GENERAL NOTES

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D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
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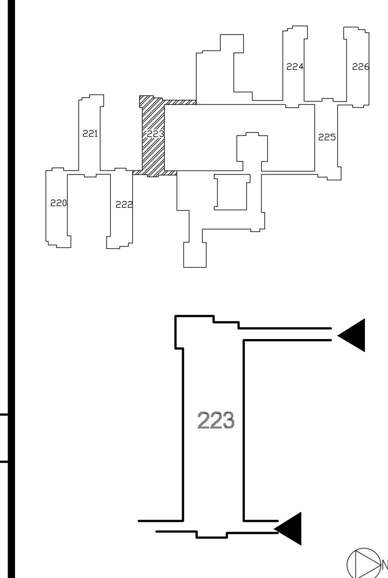

Drawn: Sara Baum
Checked: ADE
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Sheet #
A122

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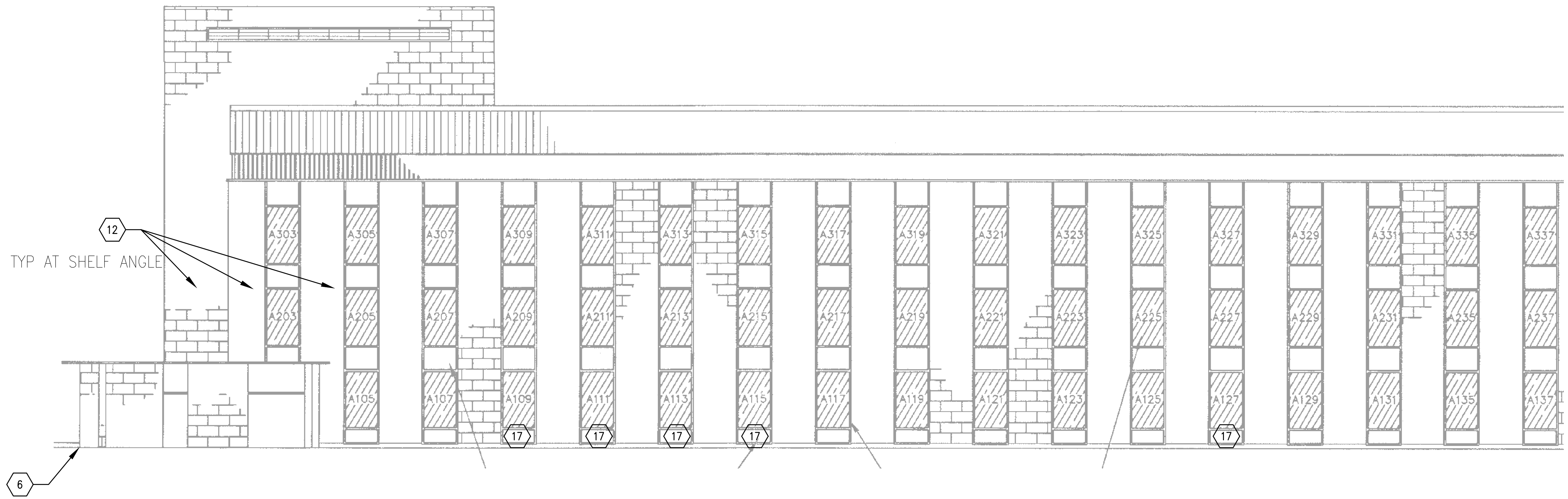

KEY NOTES

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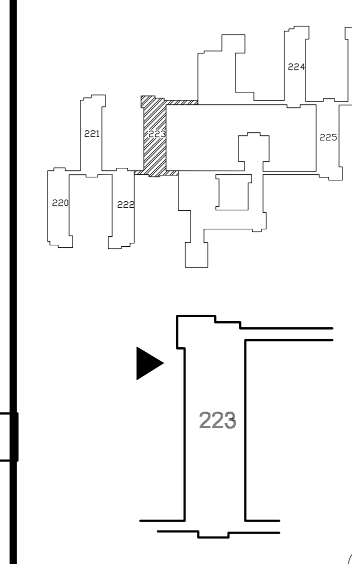

Drawn: Sara Baum
Checked: ADE
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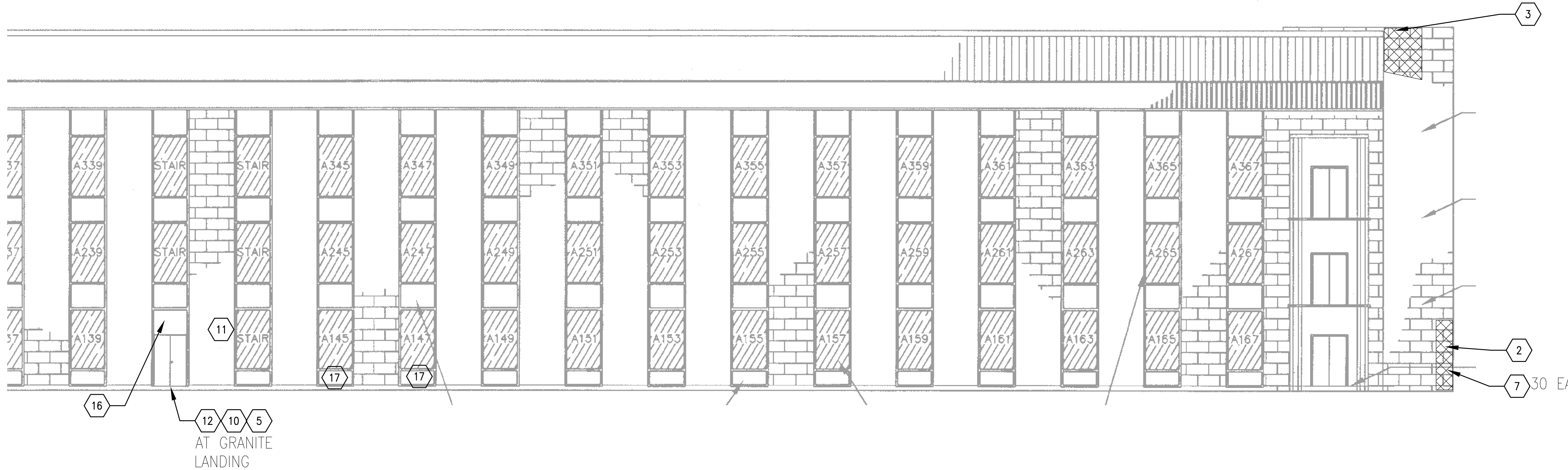
Sheet Title: **Building 223: South Elevation 1**

Sheet #
A123



KEY NOTES

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D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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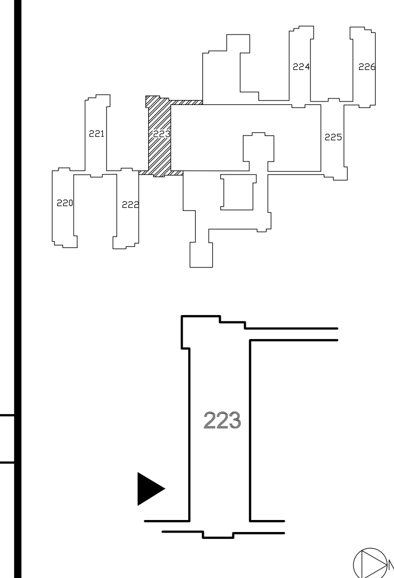
Key Plan



Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title:
Building 223: South Elevation 2

Sheet #
A124

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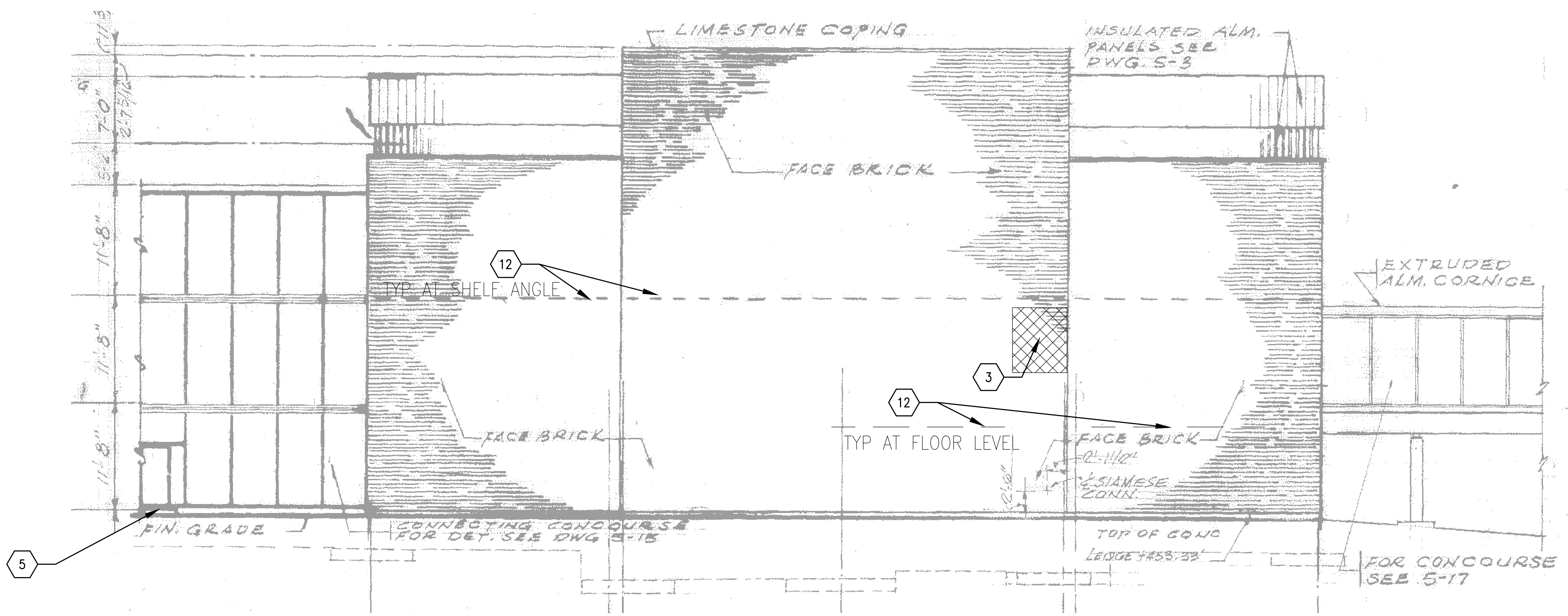

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

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B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
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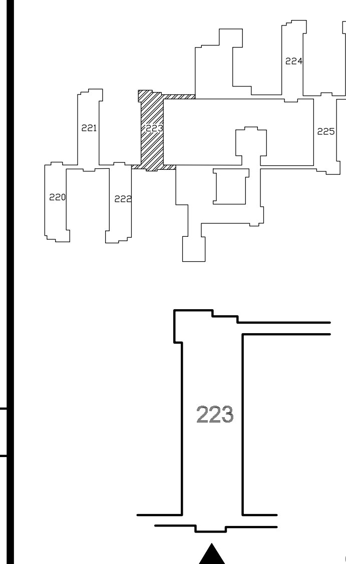

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 223: East Elevation**

Sheet #
A125

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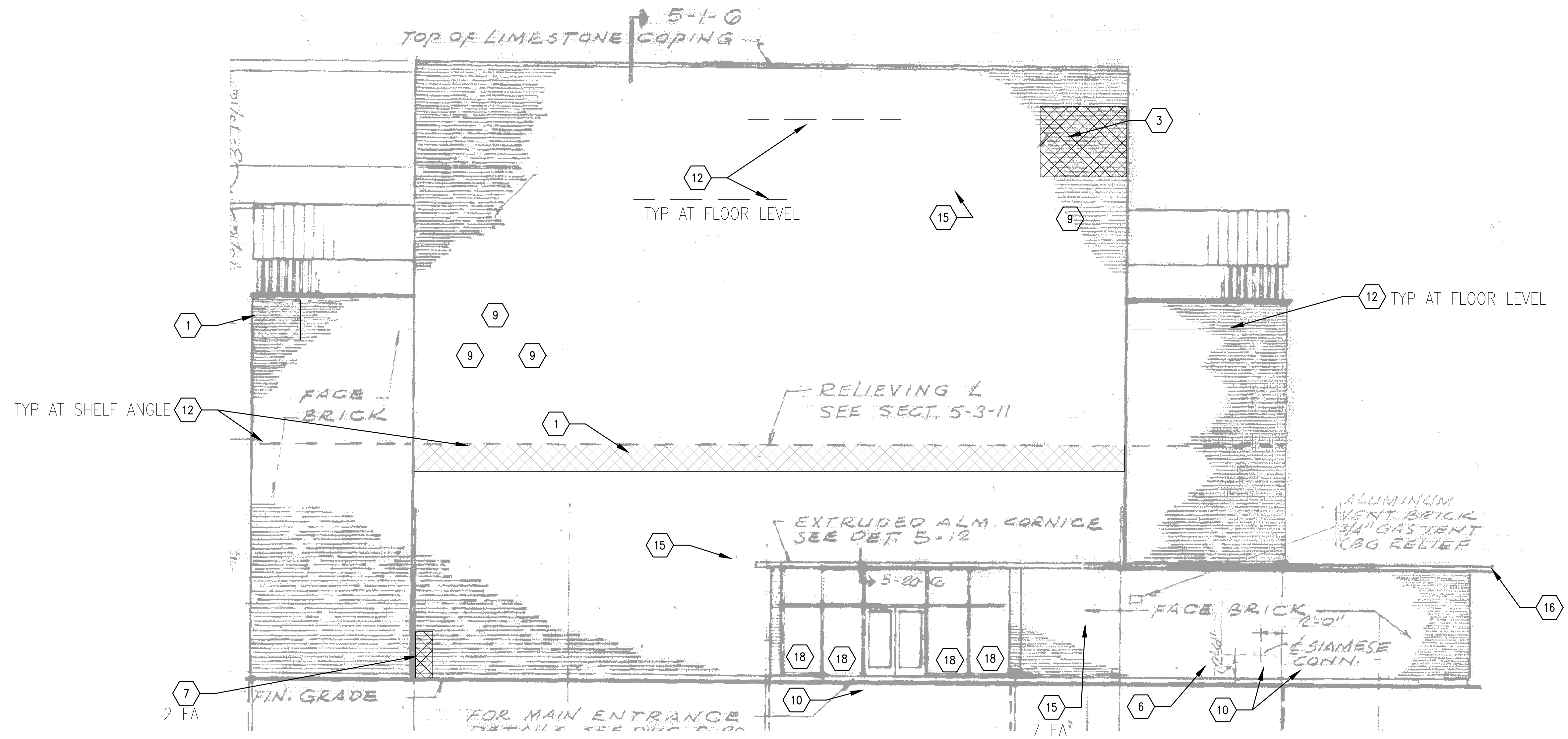

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
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6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
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18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
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GENERAL NOTES

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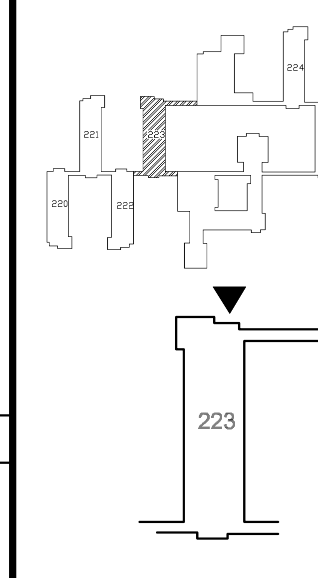

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 223: West Elevation**

Sheet #
A126

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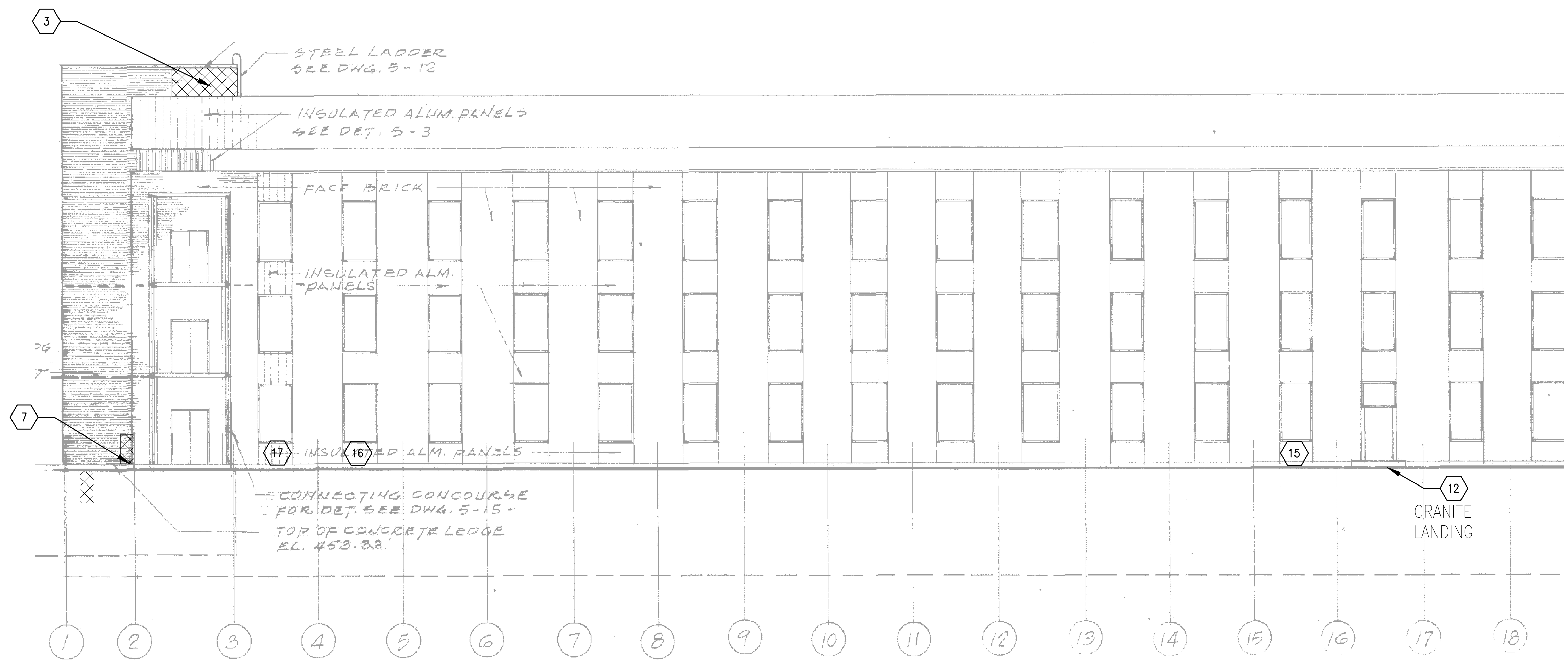

KEY NOTES

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GENERAL NOTES

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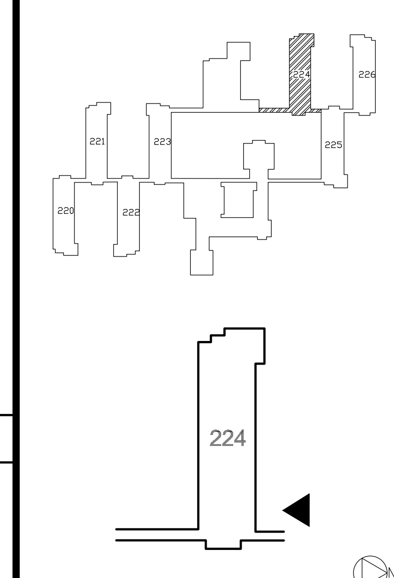
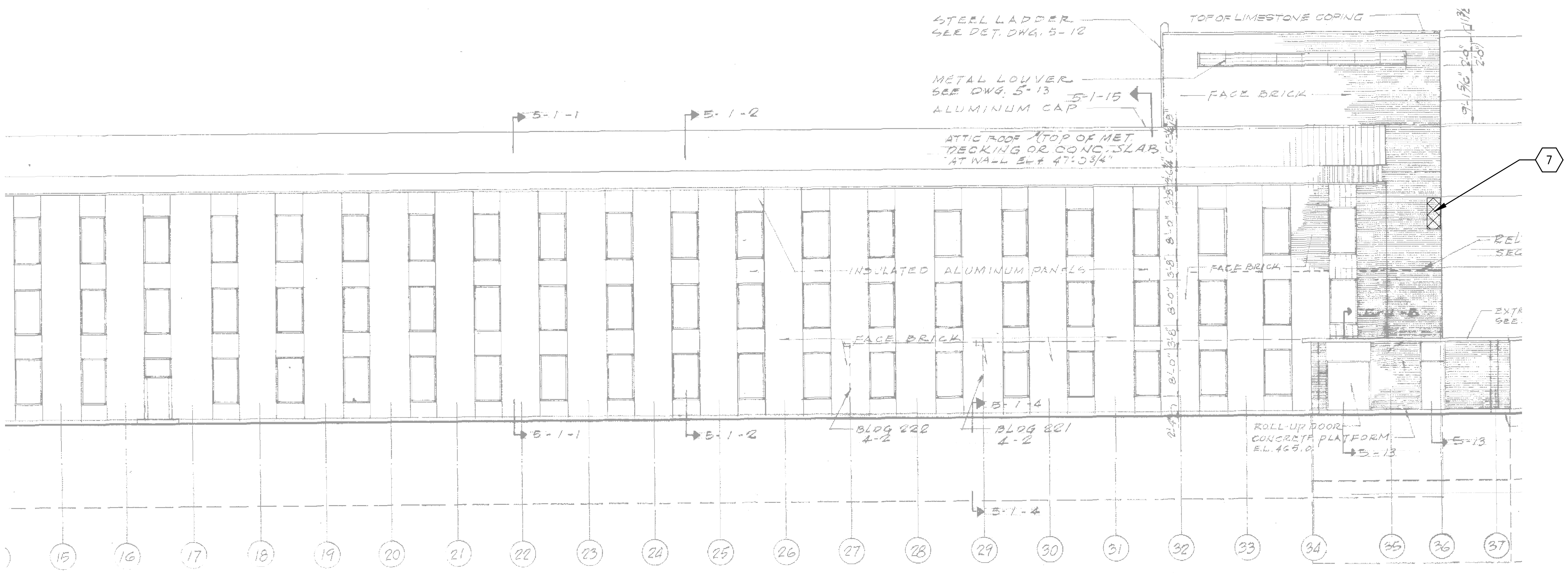


Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 224: North Elevation 1**

Sheet #
A127



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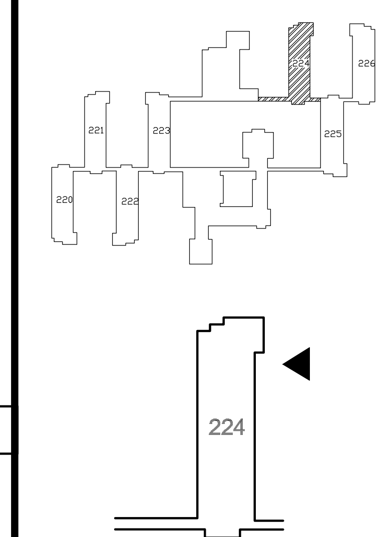

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 224: North Elevation 2**

Sheet # **A128**

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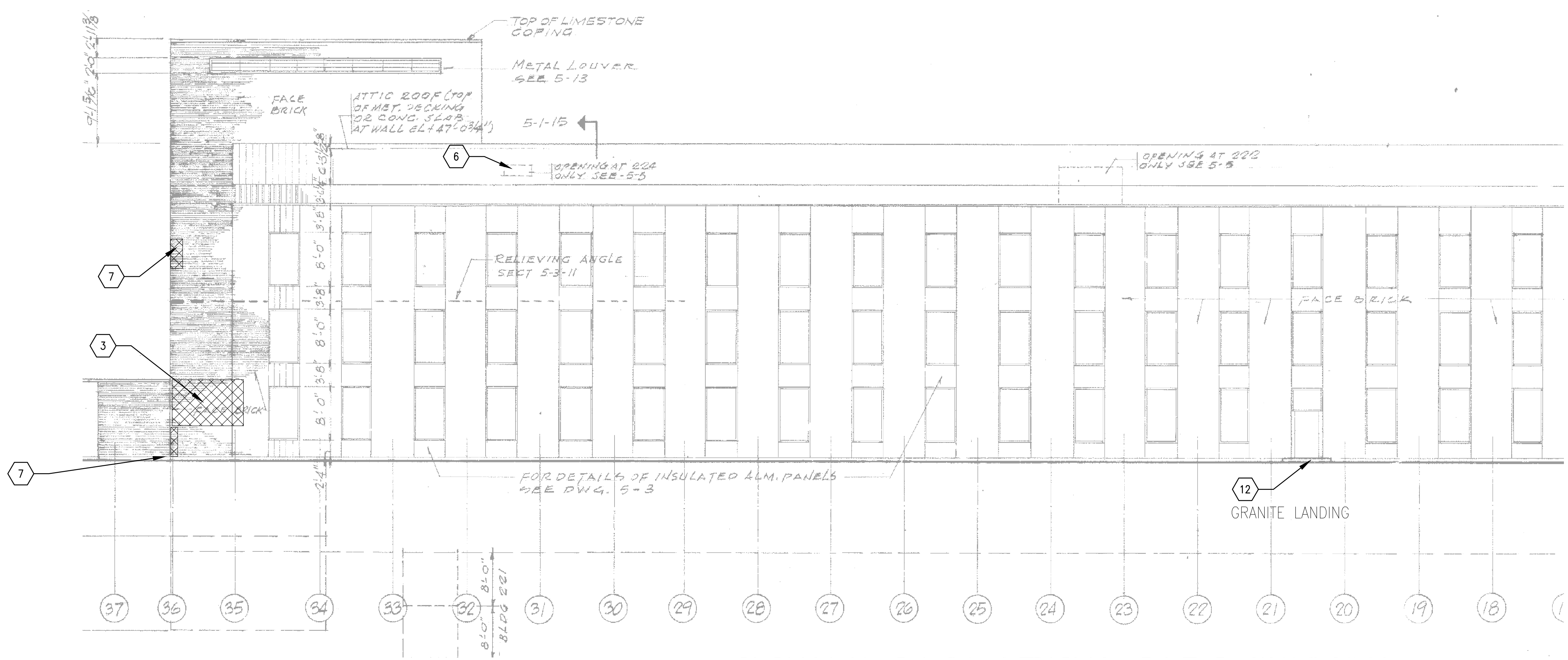

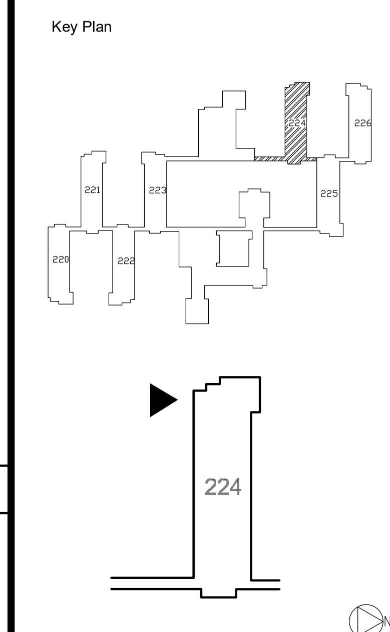

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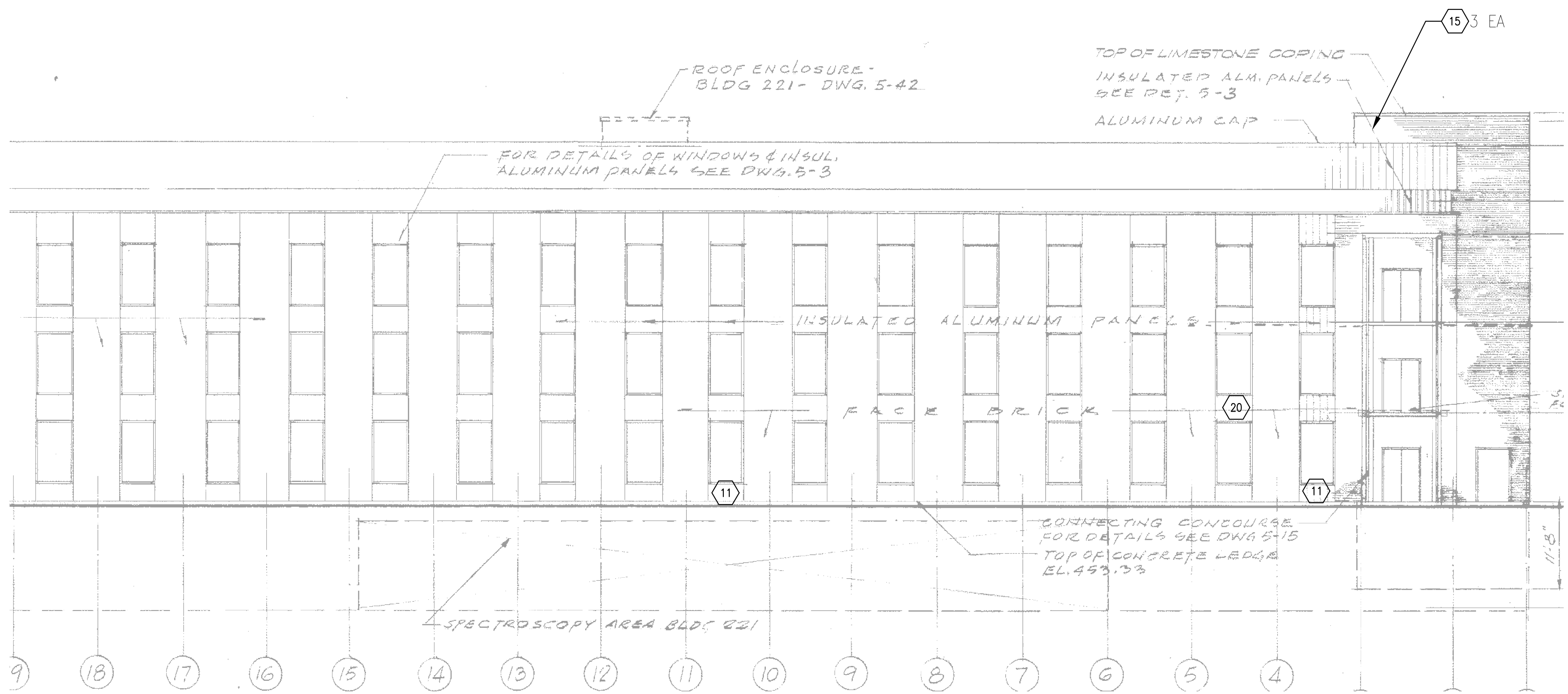
Sheet # **A129**



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D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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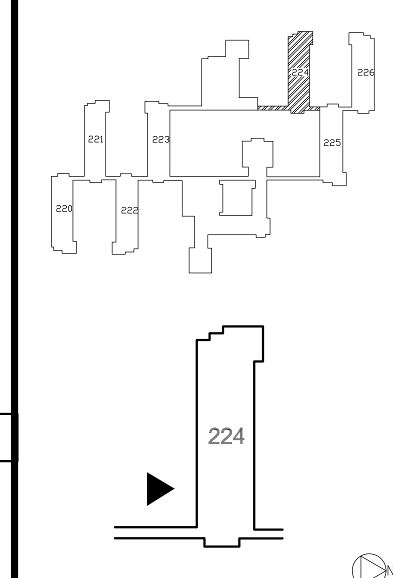
Date:
Issue: NOT FOR CONSTRUCTION

Key Plan



Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 224: South Elevation 2**

Sheet #: **A130**

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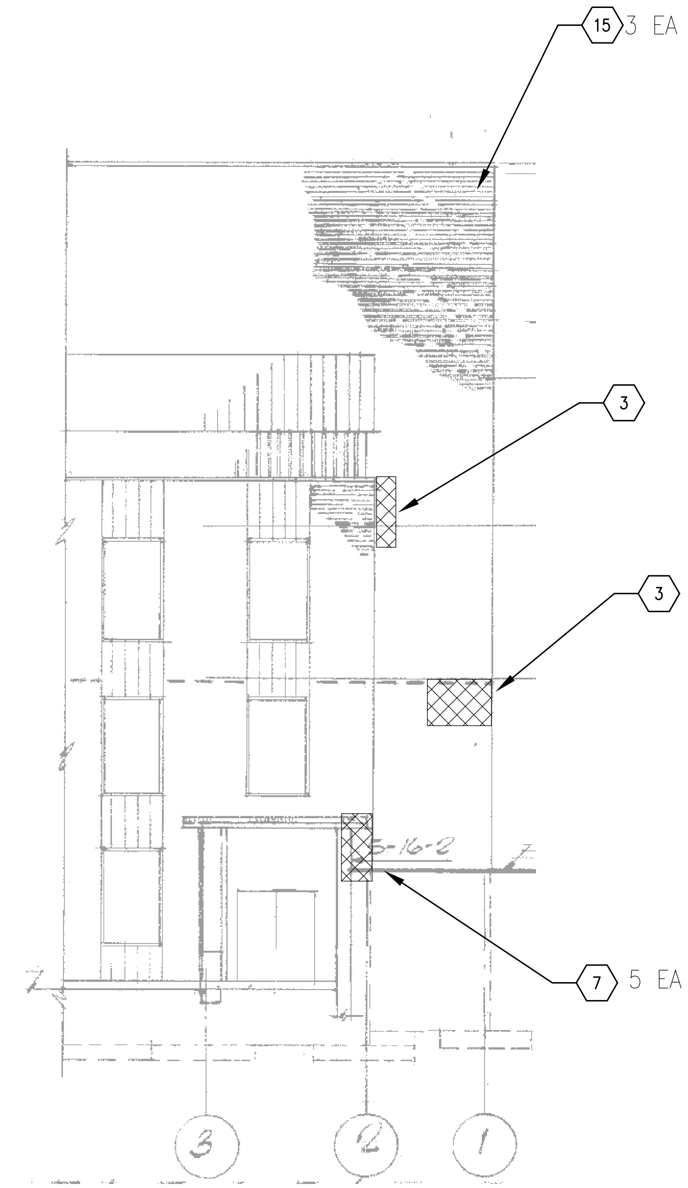

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
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F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
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M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
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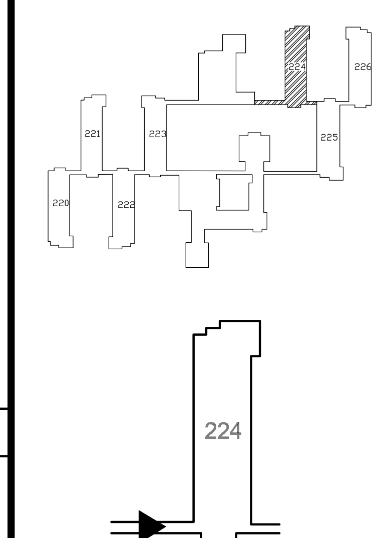

Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 224: South Elevation 3**

Sheet # **A131**

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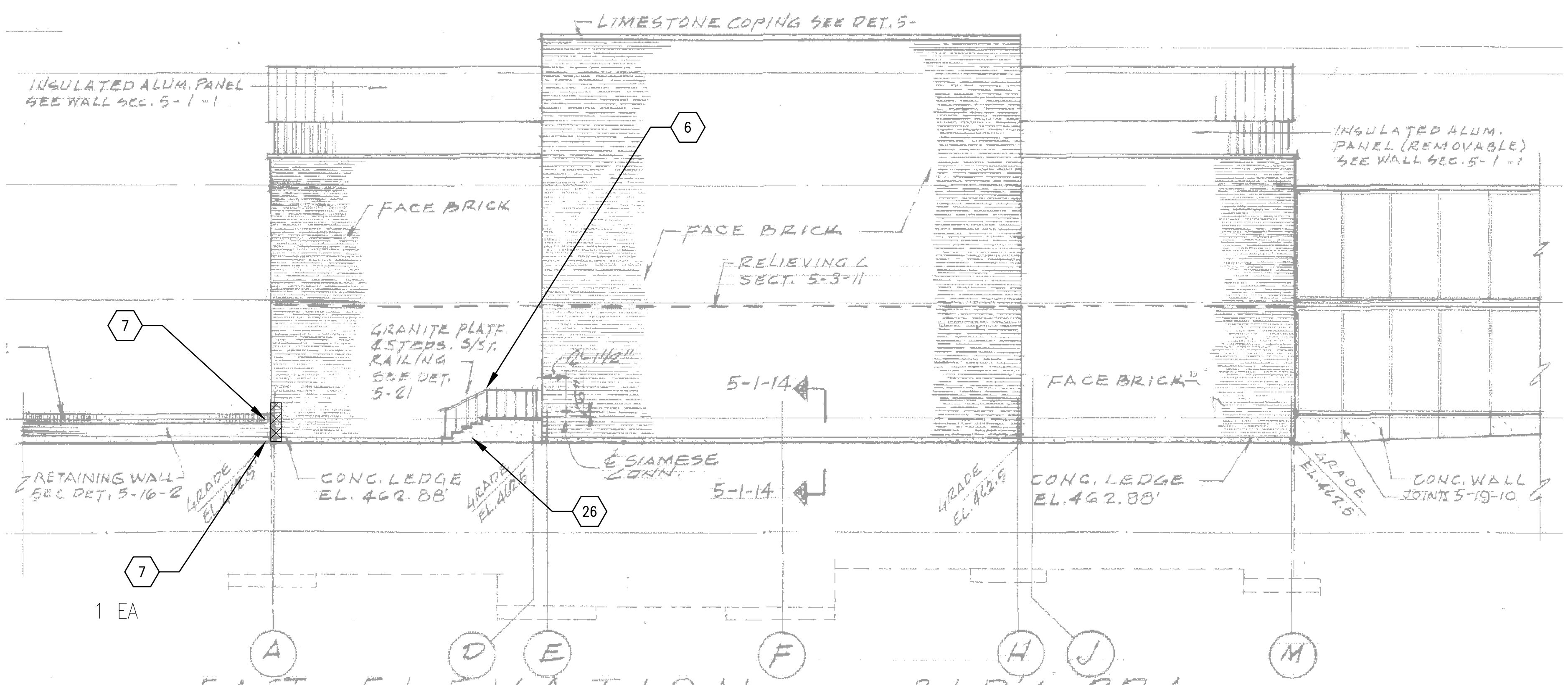

KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
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3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
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5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
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12. BRICK OR STONE DISPLACEMENT.
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14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
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GENERAL NOTES

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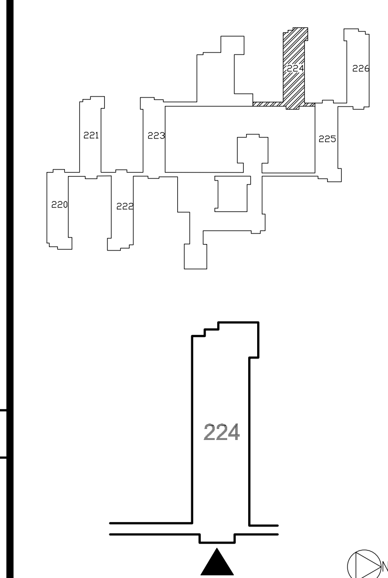

Drawn: Sara Baum
Checked: ADE
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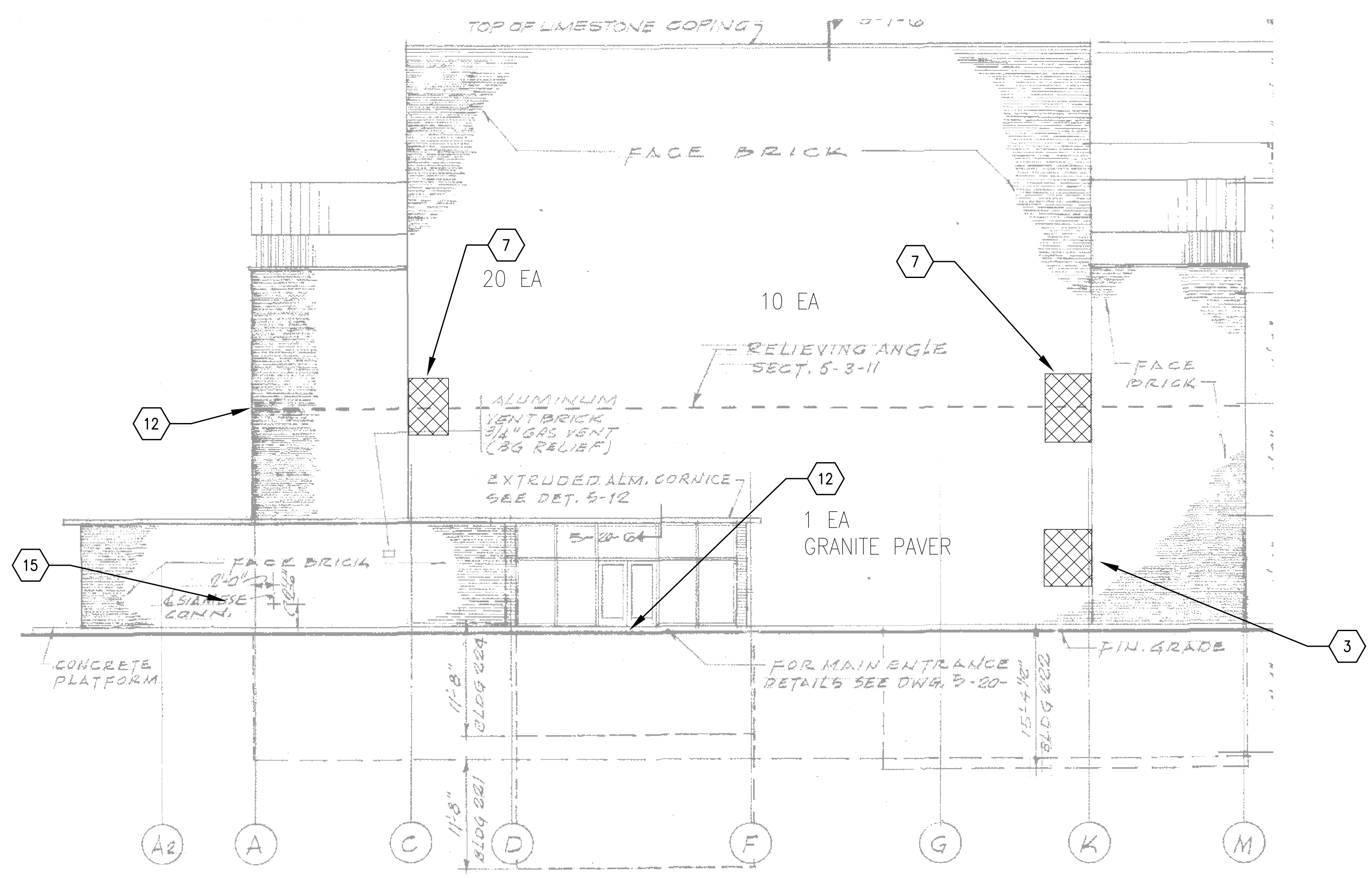
Sheet Title: **Building 224: East Elevation**

Sheet # **A132**



KEY NOTES

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18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
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20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
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23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
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26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

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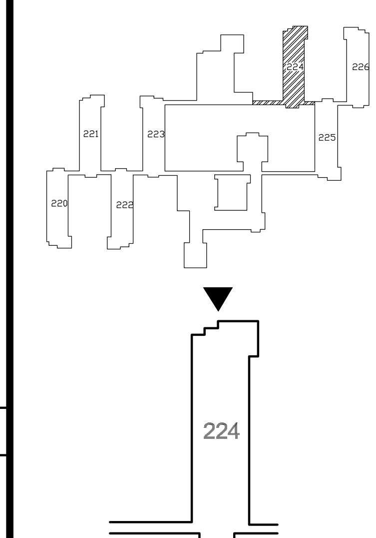

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 224: West Elevation**

Sheet # **A133**

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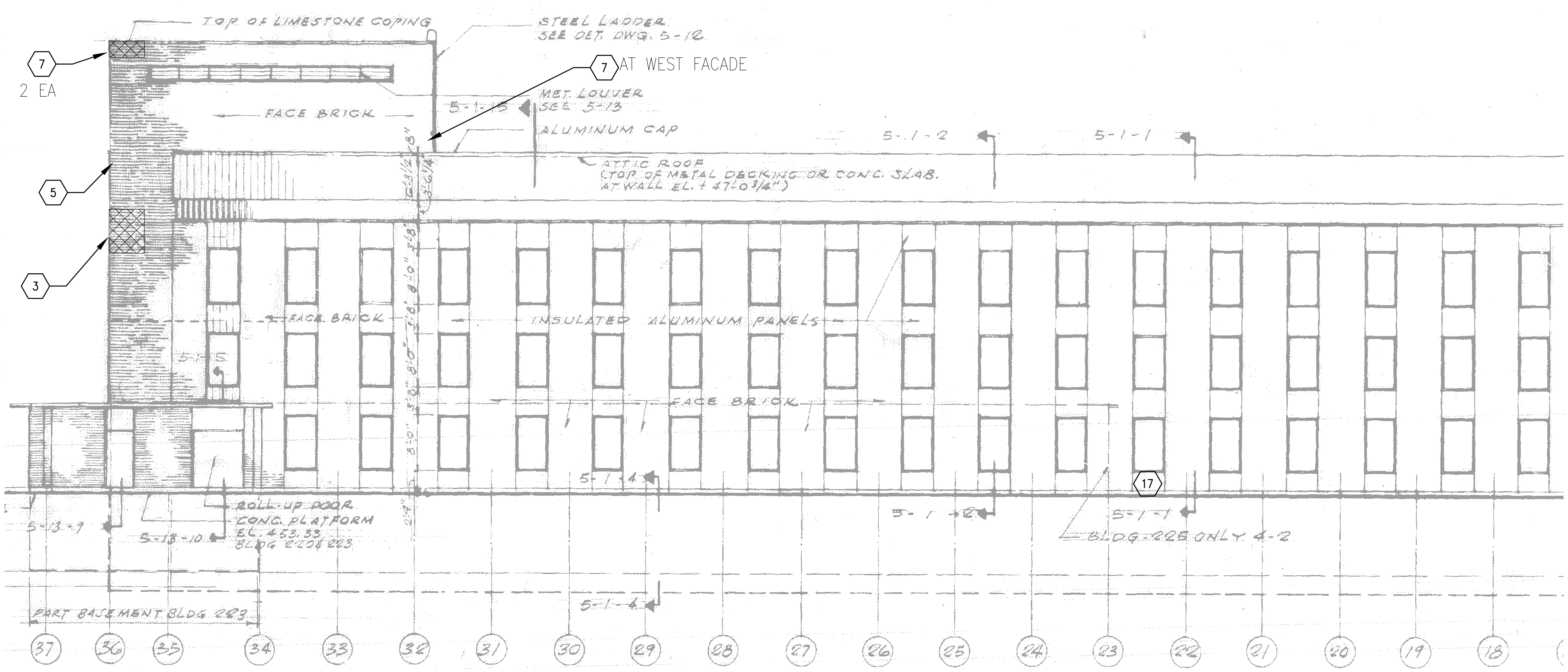

KEY NOTES

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GENERAL NOTES

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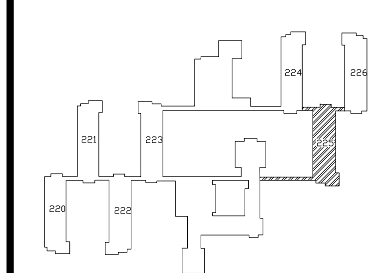

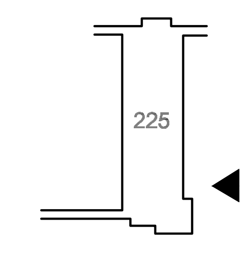

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 225: North Elevation 1**

Sheet # **A134**

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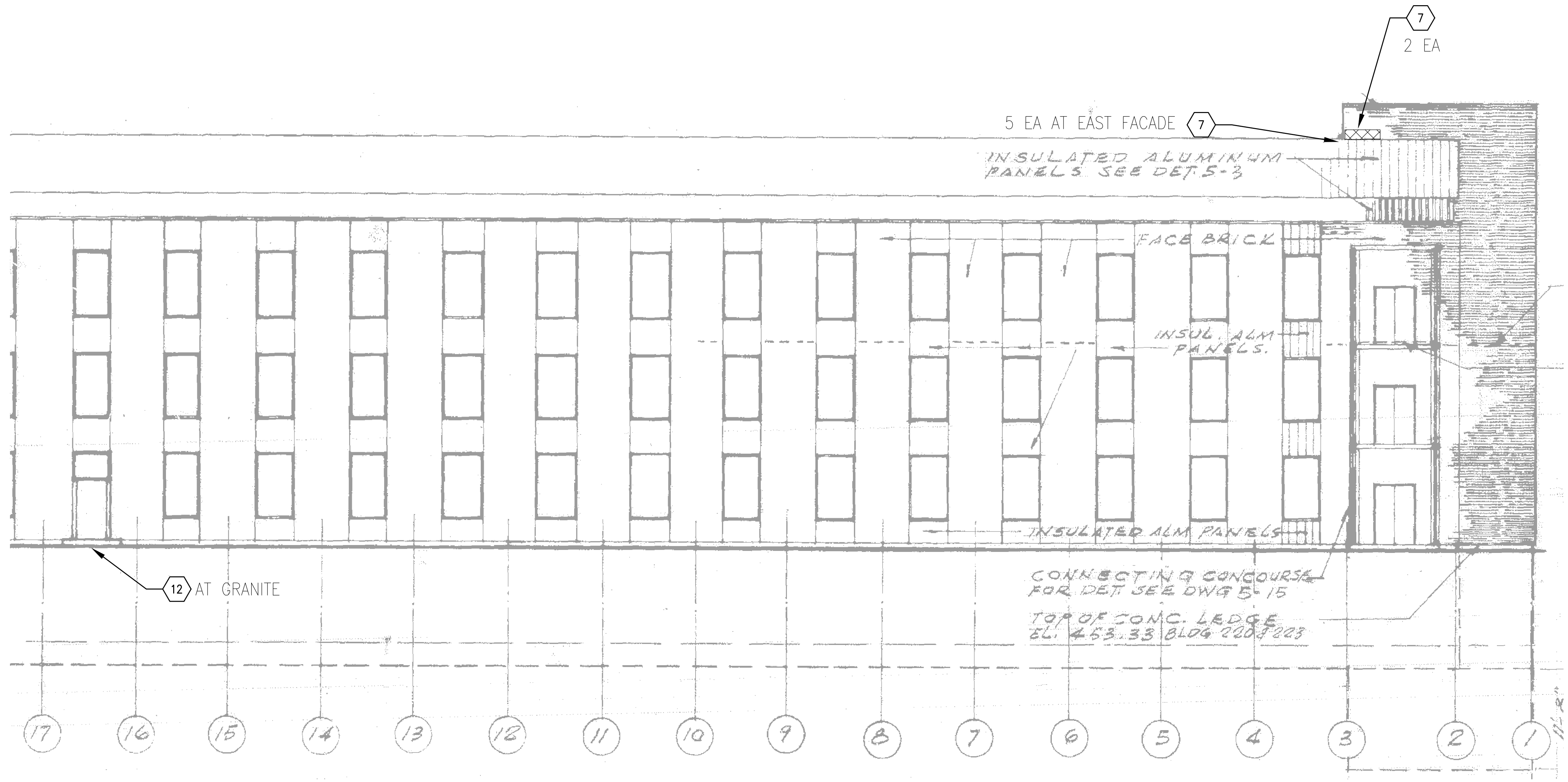

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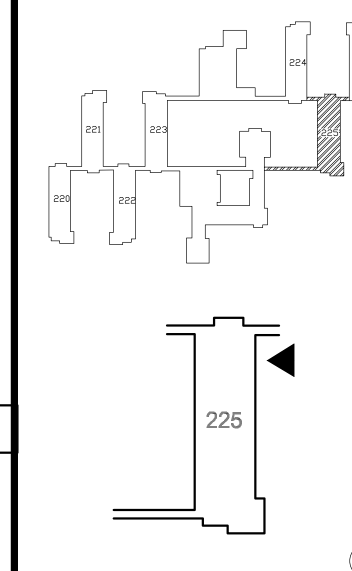

Drawn: Sara Baum
Checked: ADE
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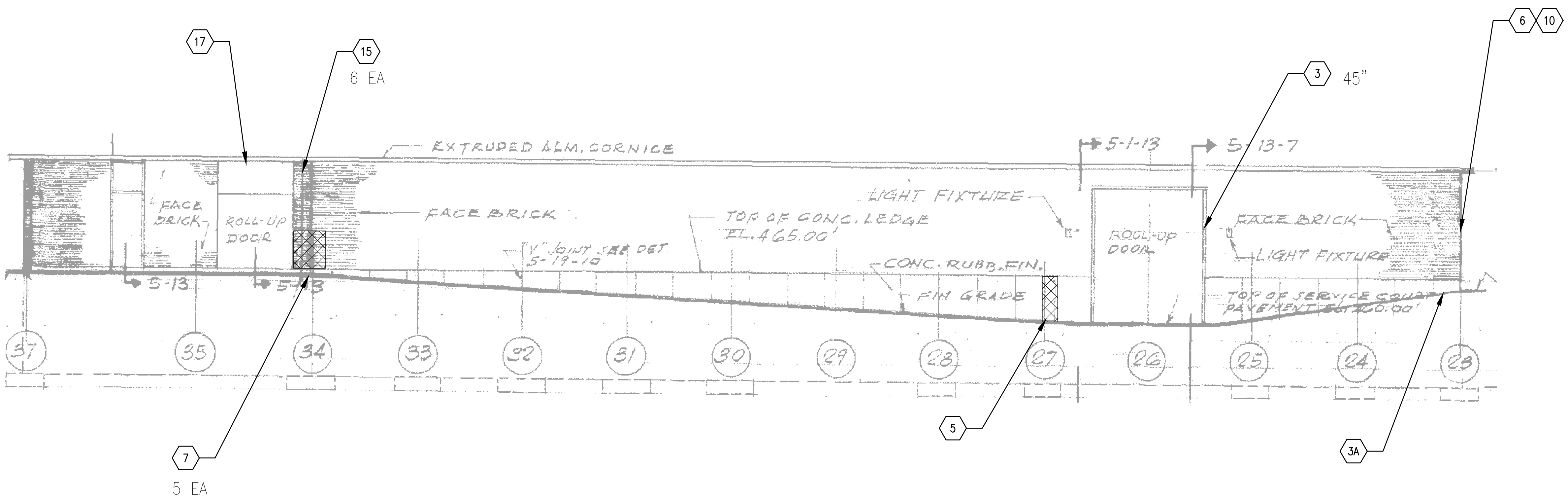
Sheet Title: **Building 225: North Elevation 2**

Sheet # **A135**



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23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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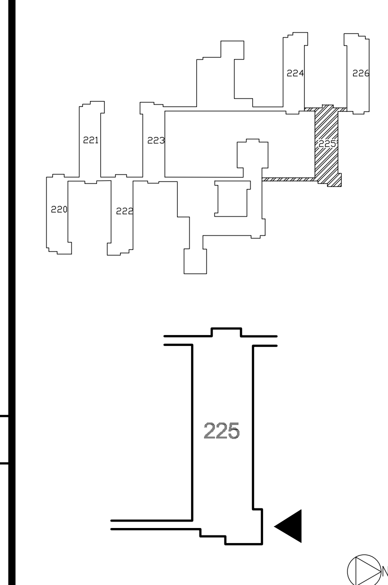

Drawn: Sara Baum
Checked: ADE
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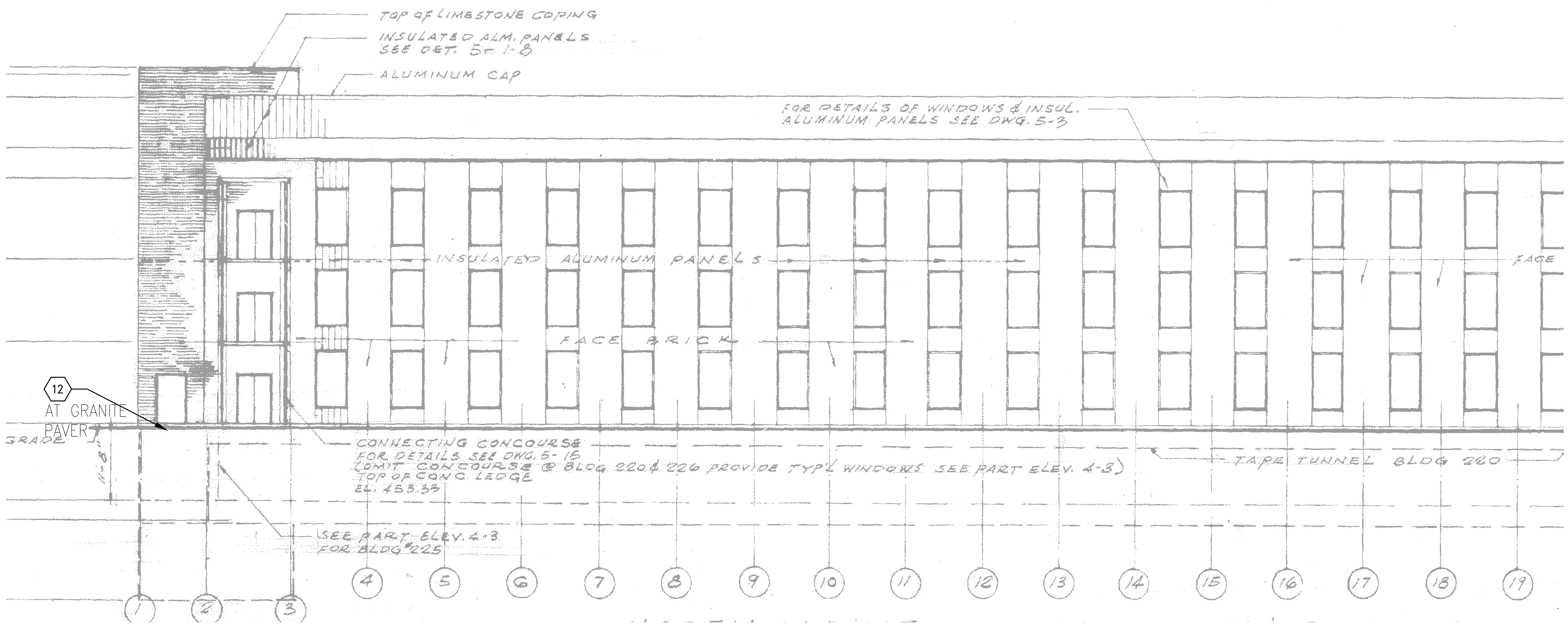
Sheet Title: **Building 225: North Elevation 3**

Sheet # **A136**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
B. CLEAN GENERAL SOILING AT CURTAIN WALL JOINTS TO REMOVE BUILDUP. TIGHTEN ALL FASTENERS.
D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
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G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
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I. REPLACE PARGING AT BASE OF WALLS 100%.
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K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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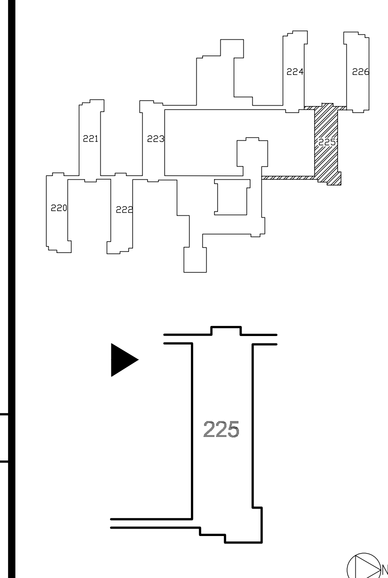

Drawn: Sara Baum Checked: ADE
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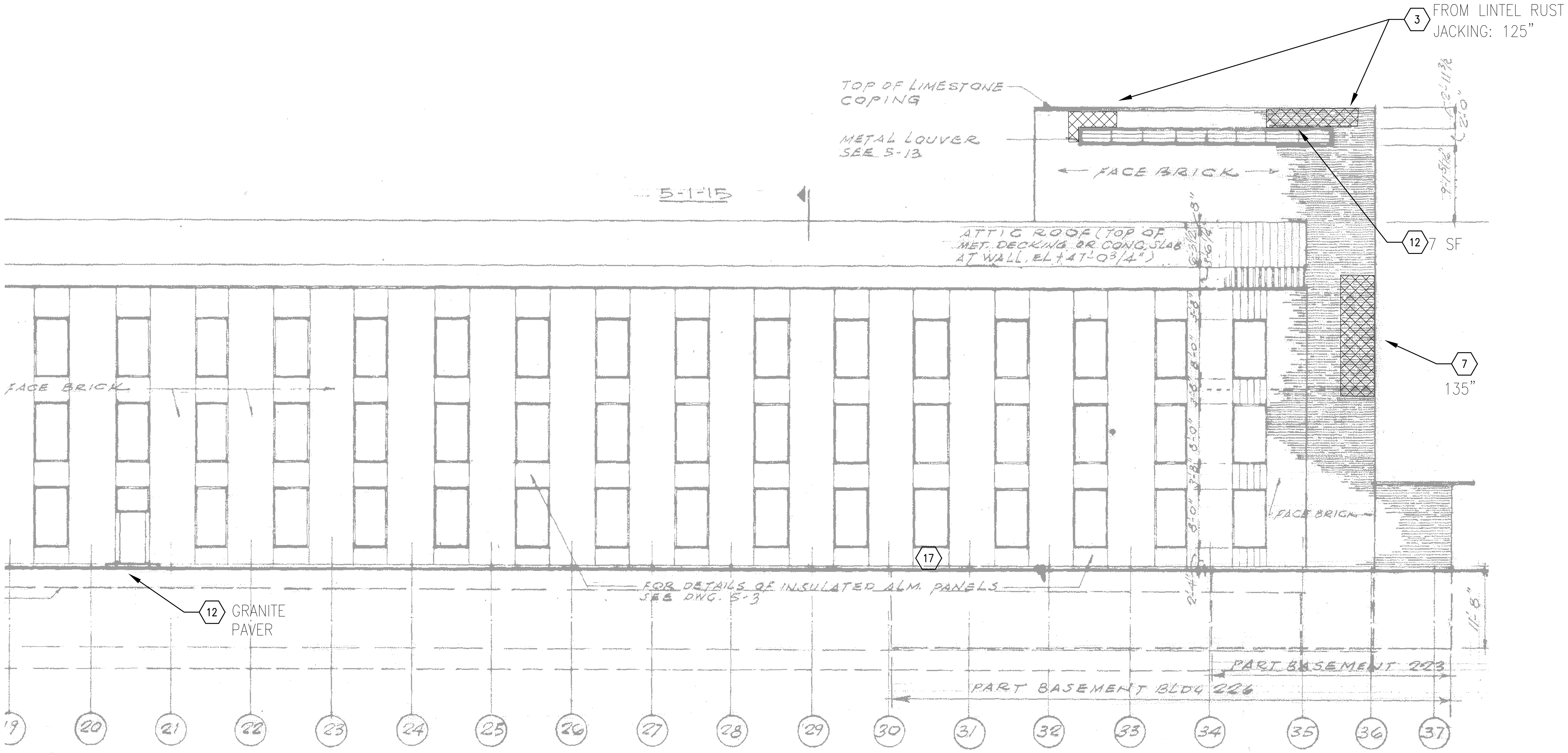
Sheet Title: **Building 225: South Elevation 1**

Sheet # **A137**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
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4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
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8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
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14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
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22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
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GENERAL NOTES

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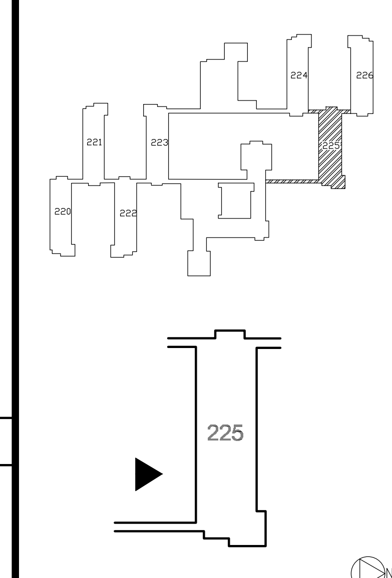

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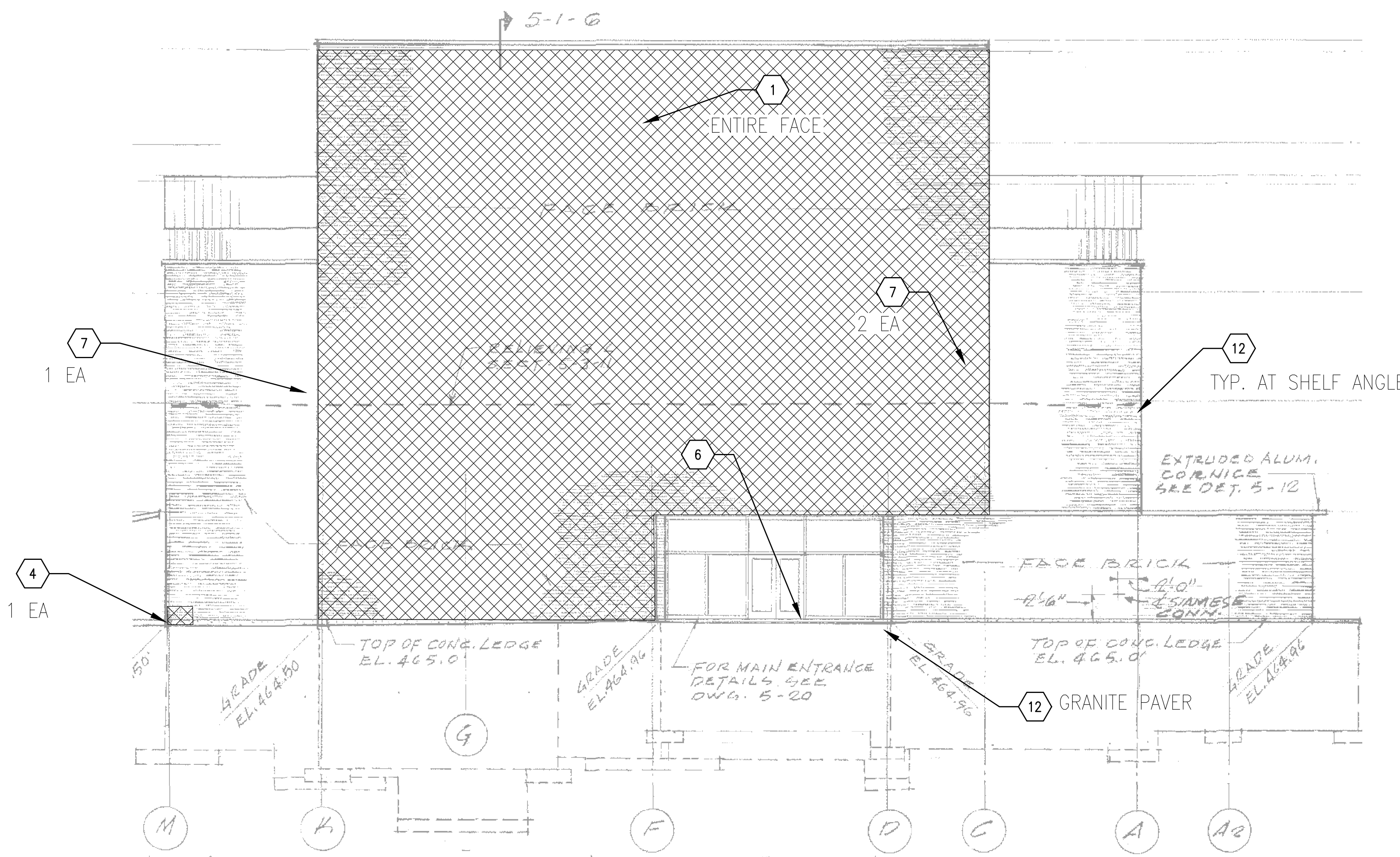
Scale: 1/16" = 1'-0"
NOT TO SCALE

Sheet Title:
Building 225: South Elevation 2

Sheet #
A138



KEY NOTES

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GENERAL NOTES

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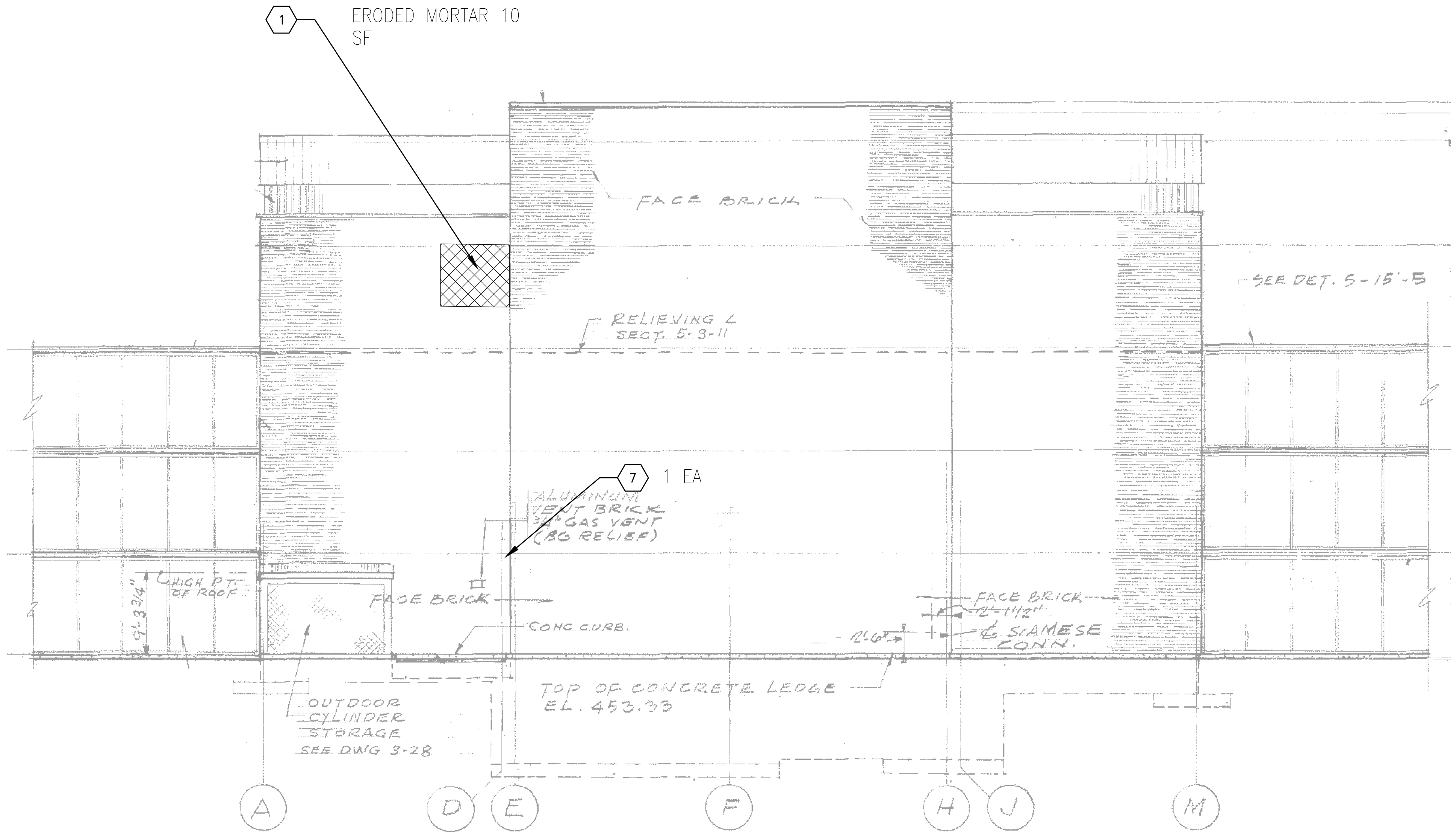
220 221 222 223 224 226 225

Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 225: East Elevation**

Sheet # **A139**



KEY NOTES

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GENERAL NOTES

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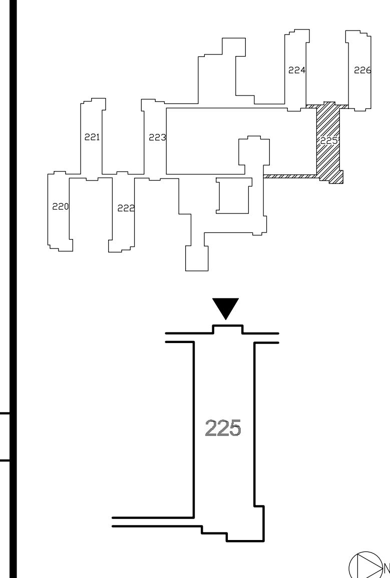

Drawn: Sara Baum
Checked: ADE
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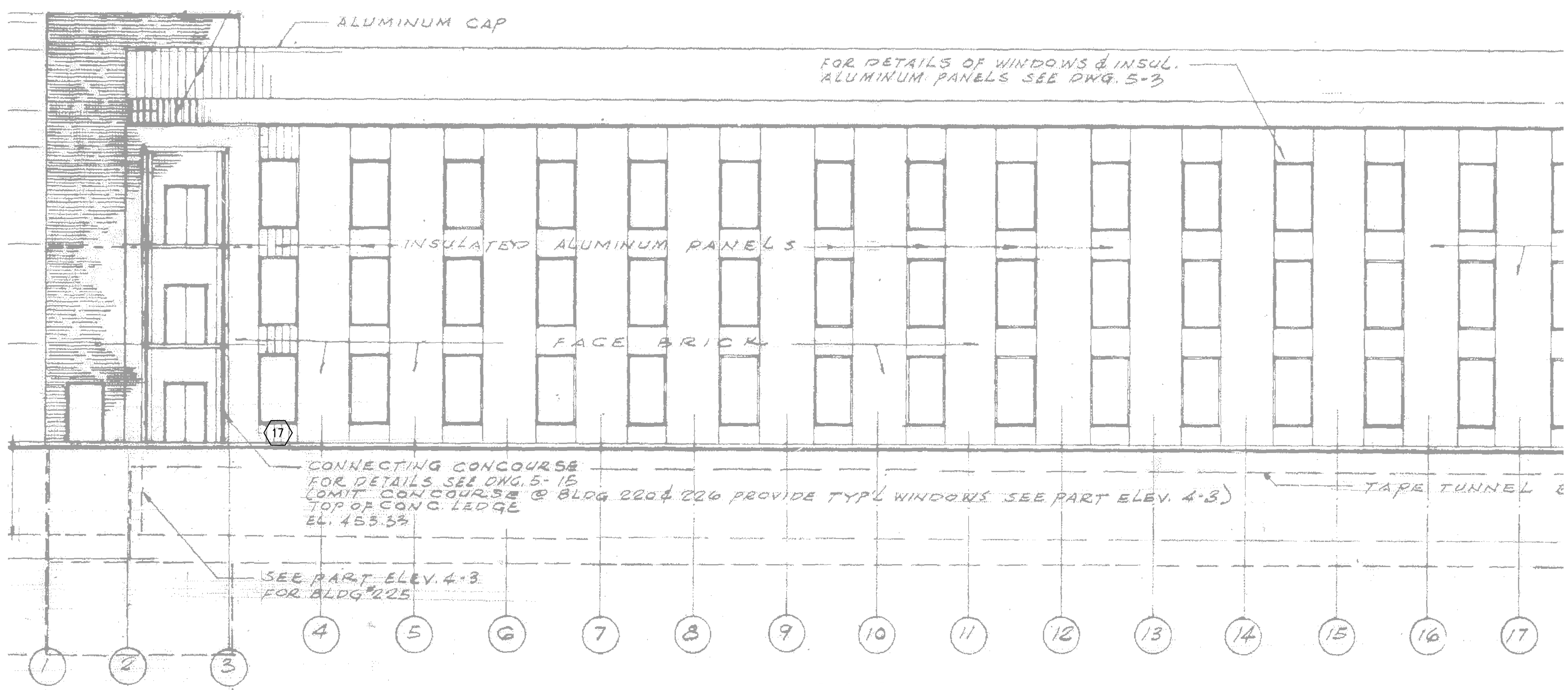
Sheet Title: **Building 225: West Elevation**

Sheet # **A140**



KEY NOTES

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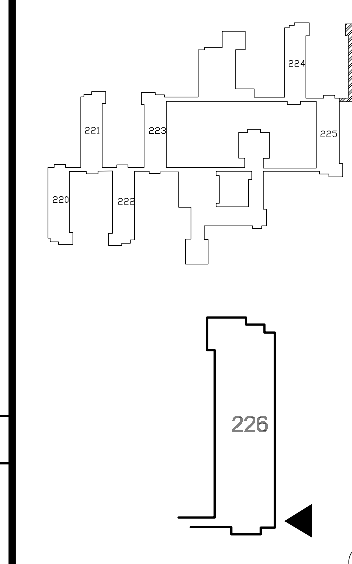

Drawn: Sara Baum
Checked: ADE
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Sheet Title: **Building 226: North Elevation 1**

Sheet # **A141**

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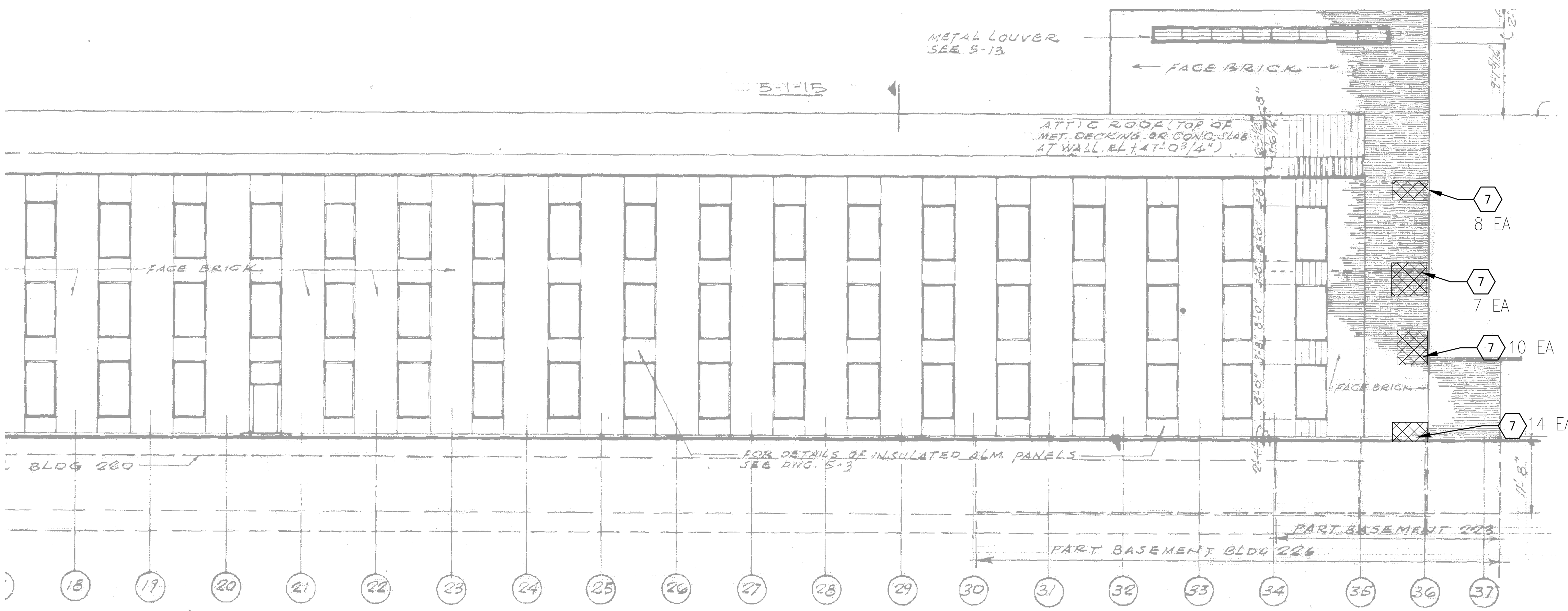

KEY NOTES

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D. REPLACE UP TO THREE WARPED/BOWING STOPS AT BOTTOM RAIL OF CURTAIN WALL AT CONNECTORS.
E. REPLACE WEATHERSTRIPPING AND GASKETS AT WINDOWS AND CURTAIN WALLS 100%.
F. REPLACE STOREFRONT ALUMINUM BASE, TYP.
G. REPLACE EXTERIOR SEALANT JOINTS 100% INCLUDING AT ALL OPENINGS, CURTAIN WALLS, AND SHELF ANGLES.
H. 5% OF BRICK ELEVATIONS.
I. REPLACE PARGING AT BASE OF WALLS 100%.
J. REPAIR TOPPING SLAB AT CONNECTOR ENTRANCE LANDINGS, TYP.
K. REDESIGN JOINT COVER AT TOP OF WINDOW CURTAIN WALLS TO PREVENT STAINING.
L. INVESTIGATE JOINT AT FLOOR PLATE RELIEVING ANGLE WITH A PROBE TO EXPOSE THE ANGLE AND BRICK DETAILING. CORRECT FOR CONCRETE BEAM SHRINKAGE.
M. REPLACE SOLAR FILM ON WINDOWS AT ALL GPL.
N. GRANITE PAVERS AT ENTRANCES EXHIBIT EROSION, RUST STAINING, PREVIOUS REPAIRS AT RAILING. CLEAN AND REPAIR GRANITE.

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Date: Issue:
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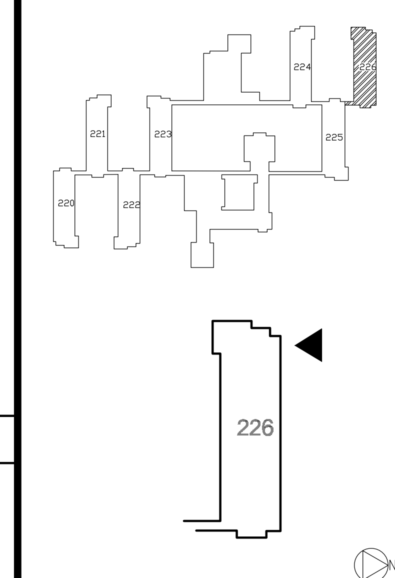
Key Plan



Drawn: Sara Baum
Checked: ADE
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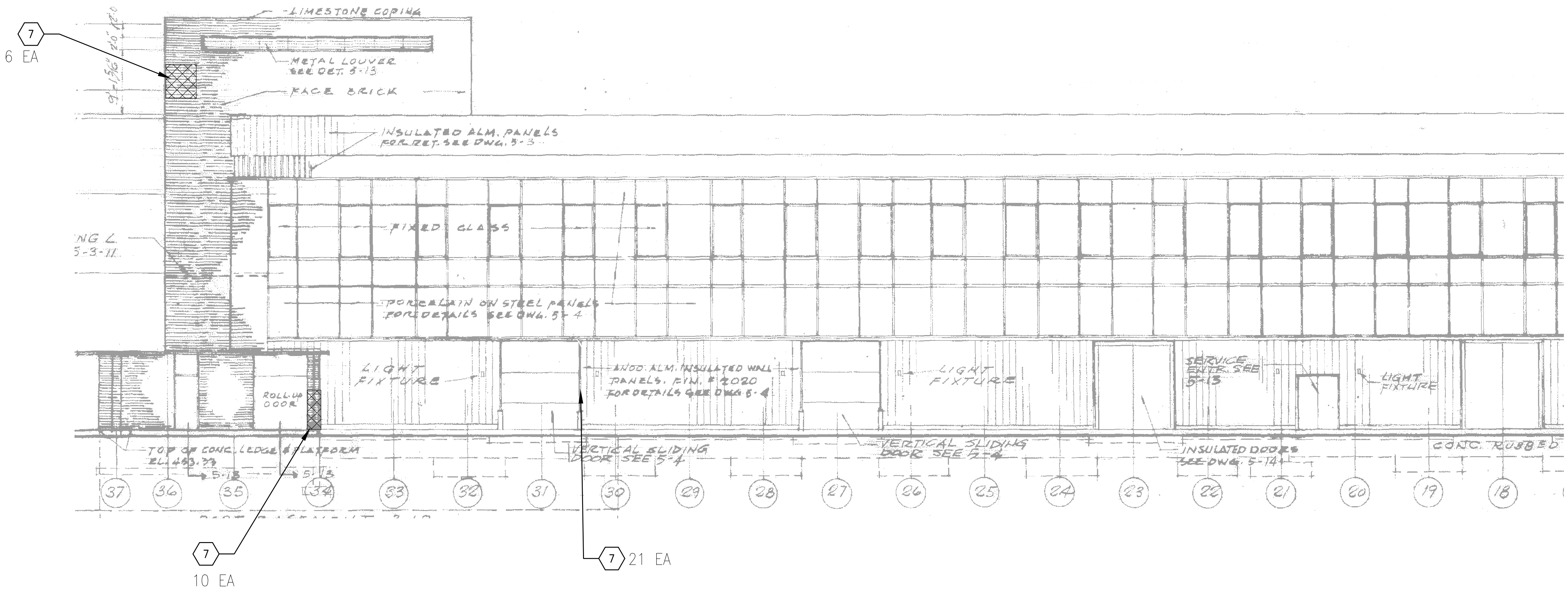
Sheet Title: **Building 226: North Elevation 2**

Sheet # **A142**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
- 2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
3. BRICK STEP CRACKING.
- 3A. CRACK IN CONCRETE OR CONCRETE STUCCO.
4. REPAIR SPALL WITH STONE DUTCHMAN THAT MATCHES EXISTING IN COLOR, TEXTURE, GRAIN, AND PROFILE.
5. REPAIR SPALL WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
6. PREPARE, PRIME, AND REPAINT CORRODED STEEL.
- 6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
8. PIN STONE AT AREA OF INCIPIENT SPALL USING THREADED STAINLESS-STEEL ROD.
9. REMOVE CALCIUM CRUST.
10. REMOVE RUST STAIN.
11. REMOVE MASTIC/PAINT.
12. BRICK OR STONE DISPLACEMENT.
13. TOOL STONE DEFECT TO ALLOW MASONRY TO DRAIN.
14. REPLACE FAILED SEALANT.
15. REMOVE ABANDONED METAL FASTENER. PATCH HOLE WITH PATCHING MORTAR THAT MATCHES EXISTING MASONRY IN COLOR, TEXTURE, AND PROFILE.
16. CLEAN METAL TO REMOVE CONDENSATION STAINING.
17. DENTED ALUMINUM. NO REPAIR.
18. PREPARE, PRIME AND REPAINT AT AREAS OF PEELING PAINT.
19. REMOVE GRAFFITI.
20. REPLACE ALUMINUM ELEMENT.
21. REPLACE BROKEN GLASS.
22. EROSION AT CONCRETE. NO REPAIR.
23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

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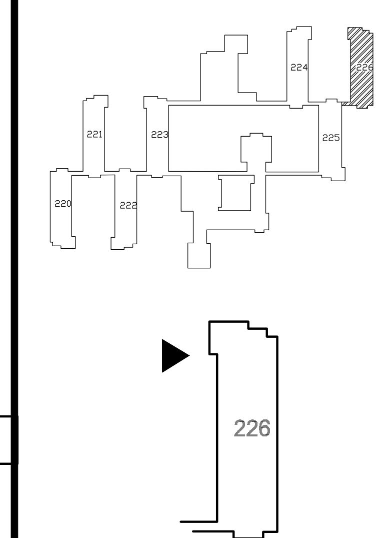

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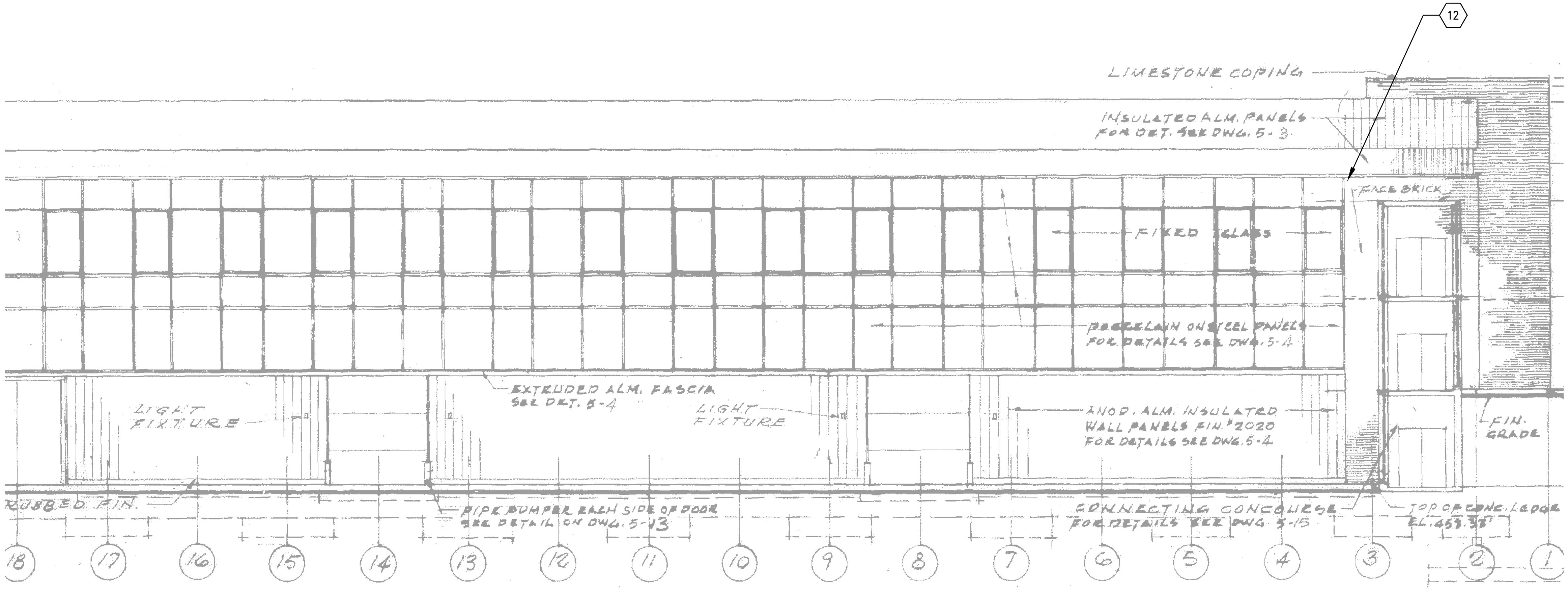
Sheet Title: **Building 226: South Elevation 1**

Sheet # **A143**



KEY NOTES

1. WHERE HATCHED, REPOINT OPEN JOINTS 100%.
2. REMOVE BIOLOGICAL GROWTH WITH ARCHITECTURAL BIOCIDE.
2A. TRIM LARGE VEGETATION TO BE 2 FEET OFF OF BUILDING.
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6A. CLEAN POLISHED METAL TO REMOVE CORROSION.
7. REPAIR WALL AT VERTICAL CRACKS. REPLACE BROKEN BRICKS.
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23. REVERSE RETROFIT WEEPS. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
24. REMOVE INAPPROPRIATE SILICONE SEALANT. RESTORE WINDOW TO ALLOW PROPER DRAINAGE.
25. ORIGINAL DOOR.
26. EXTERIOR STAIRCASE DETERIORATION.

GENERAL NOTES

A. CLEAN GENERAL SOILING AT MASONRY ELEVATIONS.
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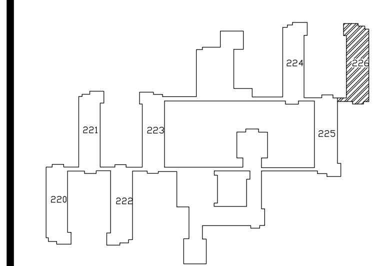

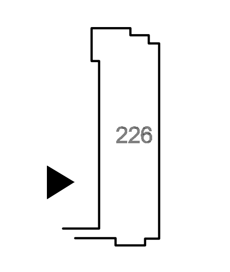

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Sheet Title:
Building 226: South Elevation 2

Sheet #
A144

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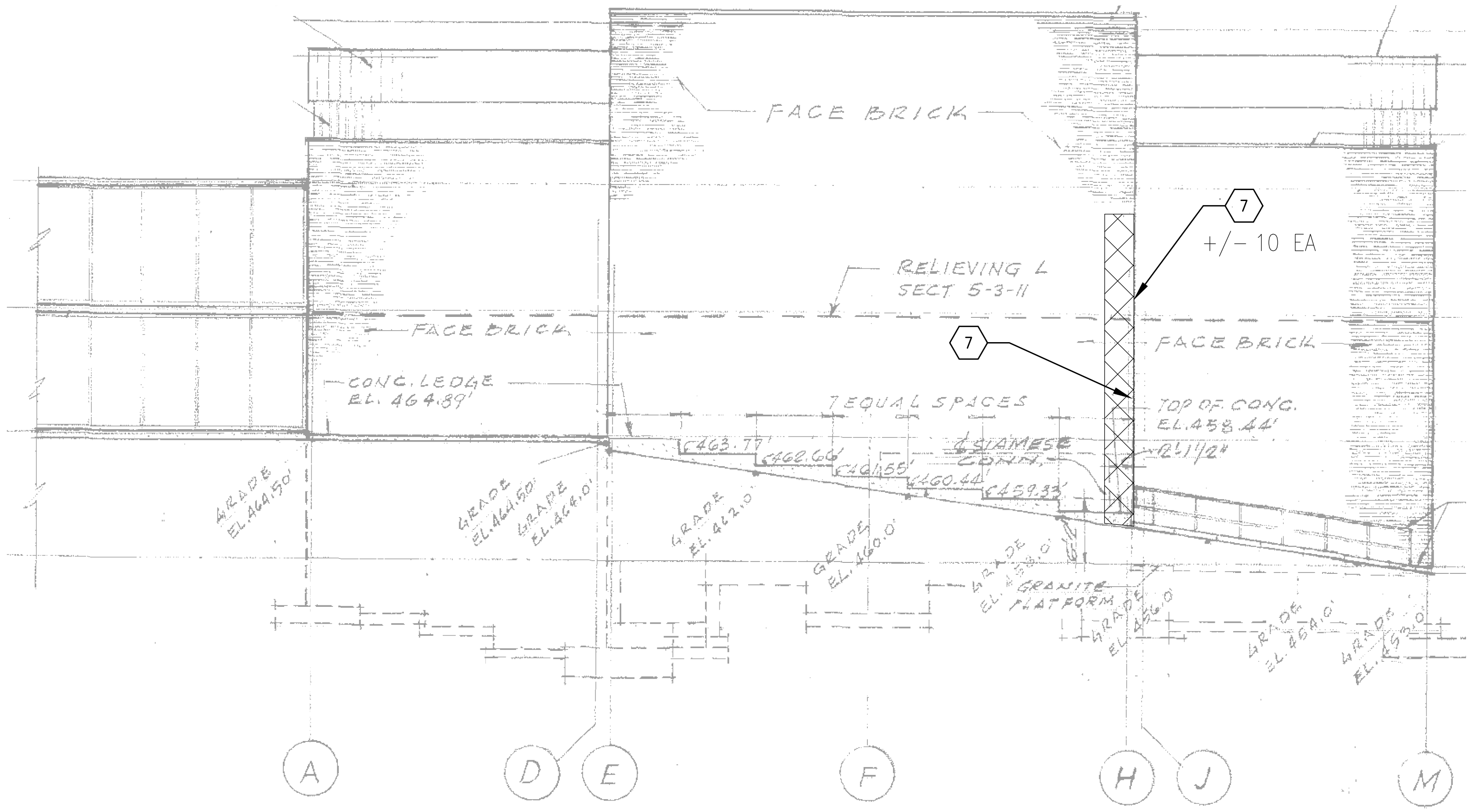

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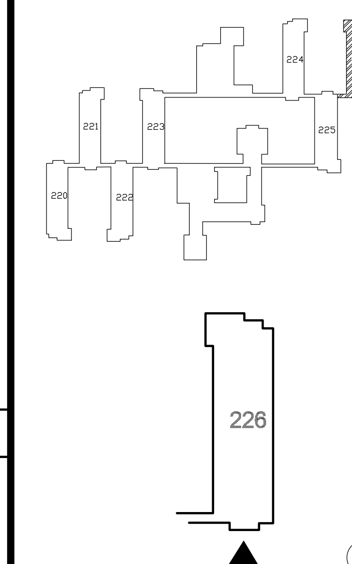

Drawn: Sara Baum
Checked: ADE
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Sheet # **A145**

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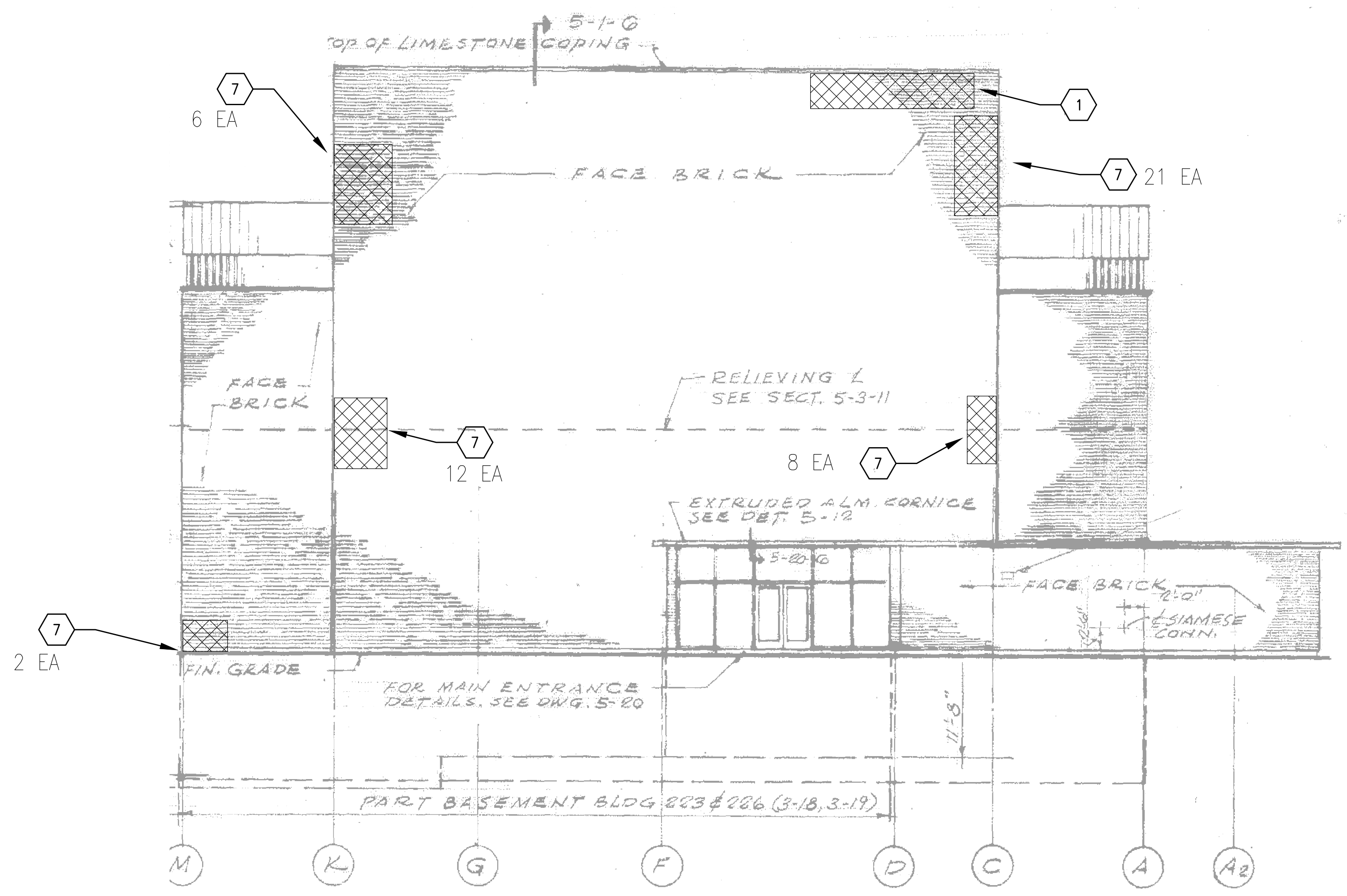

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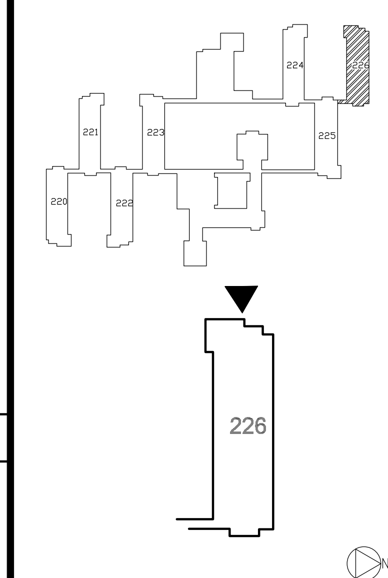

Drawn: Sara Baum
Checked: ADE
Scale: NOT TO SCALE 1/16" = 1'-0"
Sheet Title: **Building 226: West Elevation**

Sheet # **A146**

SECTION I:
APPENDIX

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INDEX FOR DIGITAL FILES

NIST Digital Archives
NIST Digital Archives contain original NIST publications including histories of the Gaithersburg campus. The Digital Archives also include original construction documents and drawings, previous facilities reports, documents relating to the GPL's eligibility for the National Register of Historic Places, and HABS photographs.

NIST Vertical Files
NIST Vertical Files located within the NIST Library is a significant repository of original documents and photographs dating to the design and construction of the new campus in the 1960s. This includes records from the NIST Relocation Committee collected within the Iris Lloyd File dating to 1956. Vertical Files also contain original construction photographs, 1960s newspaper and magazine articles about the new campus.

Records organized by repository and topic:

- NIST GPL Document Archive
  - MTFA Photographs
  - NIST Digital Archive
    - Drawings and Construction Documents (1962-2015)
      - Construction Documents
        - As-Built Construction Documents (2009-2015)
          - Drawings
          - Specifications
        - Original Construction Documents (1962)
          - Drawings
          - Specifications
      - Floorplans
        - AutoCAD Drawings
          - By Building
        - PDF Drawings
          - By Building
    - HABS Photographs (n.d.)
    - Maps and Site Plans (2016)
    - National Register Documents (2021)
    - Previous Reports and Documentation (1958-2021)
  - NIST Vertical Files
    - Historic Photographs (1962-1966)
    - Maps and Site Plans (1962-2021)
    - NIST Histories (1966-1991)

Current Photographs Organized by Building and Space:

- NIST GPL Document Archive
  - MTFA Photographs
    - Research and Presentation Materials
    - Bldg 220
      - Exterior
        - _Roof
        - East Elevation
        - North Elevation
        - South Elevation
        - West Elevation
      - Interior
        - 1. First Floor
          - Bathrooms
          - Corridors
          - Laboratories
          - Lobby
          - Offices
          - Stairs
        - 2. Second Floor
          - Bathrooms
          - Breakroom
          - Corridors
          - Laboratories
          - Offices
          - Stairs
        - 3. Third Floor
          - Bathrooms
          - Corridors
          - Laboratories
          - Offices
          - Stairs
        - 4. Attic
        - 5. Elevator
    - Bldg 221
      - Exterior
        - _Roof
        - East Elevation
        - North Elevation
        - South Elevation
        - West Elevation
      - Interior
        - 1. First Floor
          - B102 Receiving
          - Bathrooms
          - Corridors
          - Laboratories
            - B105
          - Lobby
        - Offices
          - Office Support
        - Stairs
      - 2. Second Floor
        - Bathrooms
        - Corridors
        - Laboratories
        - Offices
        - Stairs
      - 3. Third Floor
        - Bathrooms
        - Corridors
        - Laboratories
        - Offices
        - Stairs
      - 4. Attic

- Bldg 222
  - Exterior
    - _Roof
    - East Elevation
    - North Elevation
    - South Elevation
    - West Elevation
  - Interior
    - 1. First Floor
      - A112 Kitchen
      - A158 Mail and Copy
      - B110 Mail and Copy
      - Bathrooms
      - Corridors
      - Laboratories
      - Lobby
      - Offices
    - 2. Second Floor
      - Bathrooms
      - Corridors
      - Kitchen
      - Laboratories
        - B211
      - Offices
        - A222
        - A228
      - Stairs
    - 3. Third Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 4. Attic
    - 5. Stairs and elevators
      - Passenger elevator
      - Stair 4
    - 6. Structure

- Bldg 223
  - Exterior
    - _Roof
    - East Elevation
    - North Elevation
    - South Elevation
    - West Elevation
  - Interior
    - 0. Basement
      - Corridors
      - Laboratories
      - Offices
    - 1. First Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Lobby
      - Offices
    - 2. Second Floor
      - A254 Break Room
      - A256 Mail Room
      - A258 Computer Room
      - Bathrooms
      - Corridors
      - Laboratories
      - Offices
        - A261 Conference
        - B254
    - 3. Third Floor
      - Bathrooms
      - Computer Room A314
      - Corridors
      - Laboratories
        - A350
      - Office Support
        - Mail Room B311
        - Mail-Copier Room
      - Offices
        - A335
        - A357
      - Stairs
    - 4. Attic
    - 5. Stairs and elevators

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  - Exterior
    - _Roof
    - East Elevation
    - North Elevation
    - South Elevation
    - West Elevation
  - Interior
    - 1. First Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Lobby
      - Offices
      - Stairs
    - 2. Second Floor
      - Bathrooms
      - Break Room
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 3. Third Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 4. Attic

- Bldg 225
  - Exterior
    - _Roof
    - East Elevation
    - North Elevation
    - South Elevation
    - West Elevation
  - Interior
    - 0. Basement
    - 1. First Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Library
      - Mail Room
      - Offices
      - Stairs
    - 2. Second Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 3. Third Floor
      - Bathrooms
      - Break Room
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 4. Attic

- Bldg 226
  - Exterior
    - _Roof
    - East Elevation
    - North Elevation
    - South Elevation
    - West Elevation
  - Interior
    - 1. First Floor
      - Bathrooms
      - Break Room
      - Corridors
      - Laboratories
      - Lobby
      - Offices
      - Stairs
    - 2. Second Floor
      - Bathrooms
      - Breakroom
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 3. Third Floor
      - Bathrooms
      - Corridors
      - Laboratories
      - Offices
      - Stairs
    - 4. Attic
    - 5. Elevator
    - 7. Window Details

- Concourse 101-223
  - Exterior
  - Interior
    - Second Floor (only floor)

- Concourse 220-221
  - Exterior
  - Interior
    - First Floor
    - Second Floor
    - Third Floor

- Concourse 221-222
  - Exterior
    - East
    - West
  - Interior
    - First Floor
    - Second Floor
    - Third Floor

- Concourse 222-223
  - Exterior
  - Interior
    - First Floor
    - Second Floor
    - Third Floor

- Concourse 223-Shops-224
  - Exterior
    - 224-Shops
  - Interior
    - Basement Floor

- Concourse 224-225
  - Exterior
  - Interior
    - Basement Floor
    - First Floor
    - Second Floor

- Concourse 225-226
  - Exterior
    - East
    - West
  - Interior
    - Basement Floor
    - First Floor
    - Second Floor

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