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## FINAL ASSESSMENT REPORT

### PREPARED FOR:

Department of Veterans Affairs  
Bay Pines VA Healthcare System  
10000 Bay Pines Boulevard  
Bay Pines, FL 33744

Project No. 516-22-120  
Correct Structural System for Building 1

J.S. Held, LLC No: 22050462

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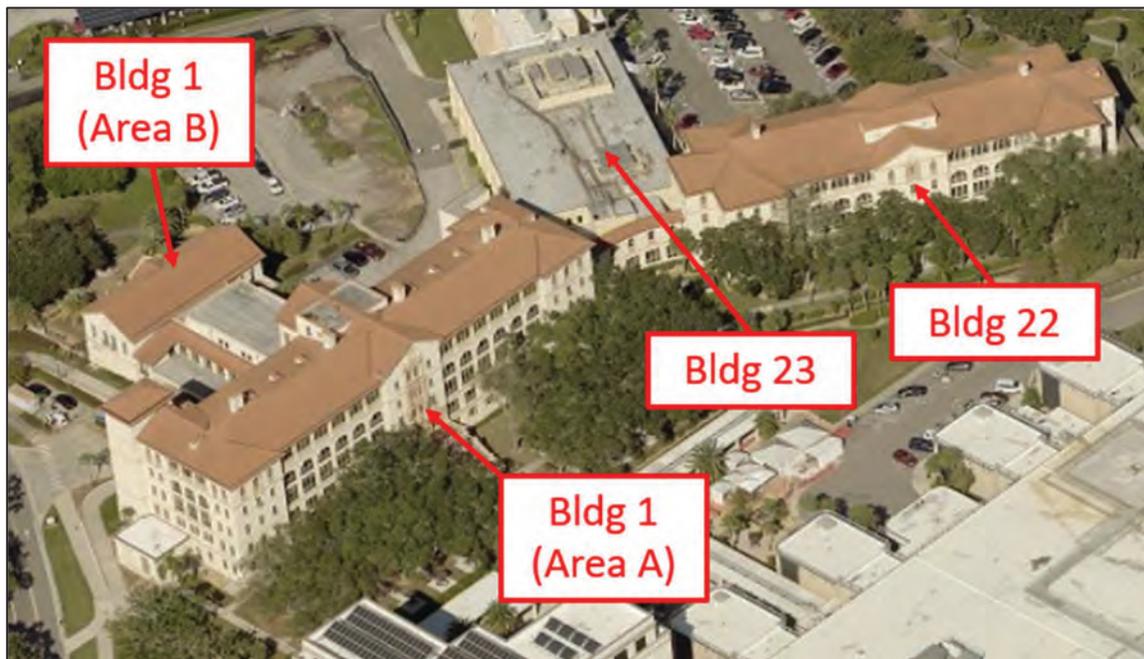
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## INTRODUCTION AND PURPOSE

This report summarizes a condition assessment of Building 1 of the Bay Pines VA Medical Campus in Bay Pines, Florida (**Figure 1**). Originally constructed circa 1933, Building 1 served as the main hospital on the Bay Pines VA Medical Campus until a larger replacement hospital was constructed in 1983, at which time Building 1 underwent its first restoration and was subsequently transitioned to housing the campus canteen services as well as providing for behavioral health services and space for administration and support. The five-story building encompasses approximately 94,000 square feet and is one of the buildings within the Bay Pines Administration and Hospital Historic District. The district was added to the National Register of Historic Places in June 2012.

In 2021, a renovation of floors two through five for the purpose of providing outpatient services began. As only the second major renovation in its nearly 90-year history, there are concerns regarding the integrity of the building's structural elements as well as the condition of the building envelope components.

This assessment report is intended to address the general conditions of the structural elements and building envelope components of Building 1 and provide an opinion of the building's structural stability for the purpose of immediate occupancy. The findings presented in this assessment report are based on visual observations as well as intrusive and non-destructive testing. Included in this report are repair recommendations and associated cost/schedule analyses.



**Figure 1: Aerial image showing Building 1 and connecting buildings**

## EXECUTIVE SUMMARY

This condition assessment comprised Building 1 of the Bay Pines VA Medical Campus located in Bay Pines, Florida. The areas evaluated in this assessment included the building's roofs, attic, envelope, the first story, basement, and crawlspace. Evaluation of stories two through five was limited to the historic lobby or the second story and an interior assessment of the building envelope along the exterior walls.

The Bay Pines VA Healthcare System (BPVAHS) commissioned this condition assessment in support of a building renovation and consideration for future repairs. The goal of this study was to evaluate the general condition of Building 1 within the defined areas and identify deficiencies that may affect continued use. The evaluation considered the overall condition of the building, with a focus on identifying existing structural deficiencies and conditions that may develop into future deficiencies, including general recommendations for repair, rehabilitation, demolition, or a combination thereof.

### Building Condition

Our assessment revealed the primary structure (slabs, beams, columns, bearing walls, etc.) of Building 1 be in poor-to-fair condition. There were no apparent signs indicative of global instability or impending structural failure. However, the following localized structural deficiencies and conditions (listed in descending order of urgency) should be addressed or are expected to need repair in the estimated timeframes outlined in this report:

- **Significant spalling or similar displacement of concrete from beams and columns was observed throughout the crawlspace and basement. These conditions were determined to be critical below the kitchen of the cantina and below the mechanical room at the northwest portion of the west building extension and temporary shoring of these areas is recommended prior to the conclusion of the ongoing renovation and return to full building occupancy.**
- Surface corrosion along steel beams and the underside of the metal floor deck underside was observed from the basement.
- Water intrusion through the roof membrane, flashing, and roof framing has allowed water to enter the roof framing system causing deterioration of roof rafters and roof decking within the attic space.
- A crack exists along the inside face of the east gable end masonry wall within the attic.

Non-structural elements of Building 1 (roof coverings, façade, interior finishes, etc.) appeared to be in fair-to-good condition and included the following typical conditions.

- Exterior: Broken roof tiles, missing gutters and flashings, deterioration of exterior masonry, and failure of sealant joints. Multiple cracks in stucco exterior wall coverings. Ponding water on the loading dock roof.

- Interior: Moisture intrusion at the attic and crawlspace levels, delamination of interior wall, floor, and ceiling finishes, and broken floor tiles

**Despite the deficiencies and conditions noted above, it is the opinion of J.S. Held that continued occupancy of the first story of Building 1 is safe and that construction as part of the ongoing renovation need not be limited.**

### Cost and Schedule Analysis

The construction renovation summary is based on JS Held site inspections and clarification to scopes reviewed in meetings with VA representatives. Quantities are based on elevations from Architectural plans I-29, I-30, & I-31 dated 02/08/1983 and photos/videos documented by JS Held during site inspections and summarized in this final assessment report.

The majority of renovation costs include structural upgrades to the basement and crawl space, including the repair of exposed/corroded rebar, spalling, and cracking in concrete columns, joists, walls, and soffits in the crawlspaces. Remaining costs include upgrades to the Building Facade including, but not limited to; replacement/fixing decorative terra-cotta, repair to any stucco cracks, repair to wood on the roof overhang, remove/replace sealant at exterior windows and doors, demo/replace tile roof identified on the fifth story, demo/replace built-up roof above the elevator penthouse, new ladder from lower to upper roof, remove/replace copper gutter identified above the fifth-story windows and elevator penthouse, painting the entire exterior building, termite services to the attic, temporary scaffolding to the exterior of the building, and temporary overhead pedestrian walkway for safe entrance/exit to the main entrance of the building.

\*The J.S. Held renovation estimate is subject to change based on 100% CD plans and details.

### Virtual Walkthrough

As part of the investigation, J.S. Held conducted a HoloBuilder survey to create a virtual walkthrough of Building 1 as it existed at the time of inspection. These conditions are representative of those presented in this assessment report and can be viewed utilizing the following link:

<https://app.holobuilder.com/app/?p=c55a059a-c0cf-41e3-a443-be962ac79cee>

## SCOPE

J.S. Held was engaged by the Bay Pines VA Healthcare System (BPVAHS) to conduct a condition assessment of the building's roofs, attic, envelope, first story, basement, and crawlspace for:

- Determining the conditions of the building components in the aforementioned areas.
- Determining the urgency of retrofitting compromised building components in the aforementioned areas.
- Determining requirements and providing recommendations to make identified areas in question permanently safe and structurally sound.
- Providing temporary solutions to make such areas safer until permanent repairs can be made.
- Estimating costs and schedule for the remedial actions proposed in the assessment.

The scope of our investigation was limited to the building's exterior, first-story, crawlspace, and basement, though portions of stories two through five were also evaluated for historic and building envelope purposes. Our investigation focused on readily visible elements without removing finishes, cladding, coverings, or other obstructions to expose concealed conditions; however, our investigation was supported by the use of infrared drone photography and concrete testing within the basement and crawlspace.

The following items were outside the scope of our assessment and are not included in this report:

- Structural building conditions within stories two through five
- Hazardous materials sampling, testing, and inspection
- Review of existing conditions for building or energy code conformance
- Review of existing MEP systems, equipment, or utility services

In general, structural and other building elements assessed for this report were rated using the following qualitative scale:

- **Good:** First signs of light deterioration may be visible but the overall performance of the element is not affected. Repairs are not expected for at least 10-15+ years.
- **Fair:** Average wear for building age. Moderate signs of deterioration. Repairs expected within 10 years.

- **Poor:** Signs of advanced deterioration. At or near the end of the expected lifecycle.

In addition to the definitions above, some elements may be referred to as:

- **Unknown:** Structural element covered by finishes or otherwise not visible.
- **Critical:** Signs of severe deterioration. Temporary shoring is recommended to be installed in critical areas for the near term and prior to the implementation of permanent repairs, though shoring is not required for continued occupancy of the first-story building or continued work as part of the ongoing construction.

It should be noted that any items identified as **Critical** have been reported to BPVAHS personnel prior to the issuance of this report as a matter of structural urgency. These included:

- Areas of the first-story concrete floor structure are deemed to be in critical condition and for which temporary shoring is recommended.
- A roof ladder from a low slope roof to a higher low roof area that has become detached could present a life safety issue where a user to be unaware of its existence.

## EXISTING BUILDING INFORMATION

As part of the investigation, J.S. Held was provided with original construction drawings dated 1931 and renovation drawings dated 1983. The building is generally constructed of exterior masonry bearing walls atop a concrete foundation, interior concrete floor slabs and columns, and wood-framed roofs. The exterior is clad with stucco and the roof covering consists of clay tiles. As part of the 1980's renovation, structural deficiencies were identified throughout the building and repairs included the jacketing/encasement of multiple concrete structural elements within the crawlspace and basement (e.g. pile caps, columns, beams, and joists). To the best extent possible, efforts have been made to refer to structural elements in this report with the same nomenclature used in the 1983 renovation drawings.

## SITE INSPECTION

J.S. Held was provided access to Building 1 between June 21, 2022, and July 5, 2022. Building conditions were evaluated by the following J.S. Held employees at varying times throughout the inspection period:

- Mr. Andrew Lovenstein, P.E.
- Mr. Brandon Davis, P.E.
- Mr. Gibson M. Jones Jr., R.A.
- Mr. Osvaldo Arevalo, P.E.
- Mr. Matt Staffeld, P.E.
- Mr. Ilan Caballero, P.E.
- Mr. Scott Hollingsworth, P.G.
- Mr. Andrew Feliciano, E.I.
- Mr. Wes Kendrick, E.I.
- Mr. Scott Jones, E.I.

In addition, J.S. Held subcontracted All About Pest to conduct a termite inspection for the entirety of Building 1 and VCS, Inc. for conducting a corrosion potential survey within the basement and crawlspace. All subcontracted work was completed within the inspection period above.

Mr. Lovenstein and Mr. Jones returned to Building 1 on August 11, 2022, to make additional observations regarding moisture intrusion.

## SITE INVESTIGATION AND OBSERVATIONS

### Basement and Crawlspace

J.S. Held inspected the basement and crawlspace areas from June 21-23, 2022. Personnel conducting the basement and crawlspace inspection include Mr. Matthew Staffeld, PE, Mr. Osvaldo Arevalo, PE, Mr. Wesley Kendrick, EI, and Mr. Scott Jones, EI. Additionally, concrete cores were taken by Mr. Scott Hollingsworth, PG, and Mr. Wesley Kendrick, EI on July 5, 2022, while representatives of VCS, Inc. performed half-cell potential testing.

For this report, “Crawlspace A” will refer to the crawlspace located beneath the five stories located along the east side of Building 1. “Crawlspace B” will refer to the crawlspace located beneath the two stories located on the west end of Building 1, and “Basement” will refer to the below-grade room interconnecting the two crawlspaces.

Concrete elements within the crawlspaces included columns, beams, and floor joists constructed of cast-in-place concrete. The overhead steel beams, girders, and pan deck of the composite metal deck in the basement were constructed on-site and supported by cast-in-place concrete columns. J.S. Held evaluated

and categorized these members into ‘good’, ‘fair’, or ‘poor’ conditions. Representative photos of ‘good’, ‘fair’, and ‘poor’ members may be found in **Appendix A: Representative Conditions – Basement and Crawlspace** attached to this report.

Generally, ‘**Good**’ condition concrete members evidenced no concrete spalling, exposed rebar, or significant (non-shrinkage) cracks. ‘**Fair**’ concrete members generally evidenced limited concrete spalling, exposed rebar, or cracks. ‘**Poor**’ concrete members exhibited significant concrete spalling, exposed and corroded rebar, or cracks. It should be noted that the first-story floor overlying several ‘poor’ members was inspected and no significant distress was observed. An approximate count of ‘fair’ and ‘poor’ concrete members by crawlspace can be found in **Tables 1 and 2** below, which are intended to provide an overview of the crawlspace conditions. Please note that the table does not include all structural elements evaluated as many were considered to be in ‘good’ condition. Color-coded maps identifying ‘**Good**’, ‘**Fair**’, and ‘**Poor**’ conditions can be found in **Appendix A** following the representative conditions photographs.

Crawlspace A				
	Total number of structural members in fair or poor condition			
Condition	Column	Beam/Joist	Underside of Slabs within Bays	Wall Section within Bays
Fair	22	55	43	14
Poor	33	45	20	12

**Table 1: Approximate count of ‘fair’ and ‘poor’ members within Crawlspace A**

Crawlspace B				
	Total number of structural members in fair or poor condition			
Condition	Column	Beam/Joist	Underside of Slabs within Bays	Wall Section within Bays
Fair	9	13	10	7
Poor	9	18	8	0

**Table 2: Approximate count of ‘fair’ and ‘poor’ members within Crawlspace B**

While the majority of the cast-in-place concrete columns, beams, and floor joists were in fair to poor condition, there were three (3) ‘**Critical**’ areas identified where temporary shoring should be installed until permanent repairs can be implemented. These areas were identified at the following locations and are shown in the floor plan diagram of **Appendix B: Shoring of Basement and Crawlspace Critical Areas**.

- The floor joists and slab area bound between columns 29-30-50-53-73-91-87-29 below the kitchen (Crawlspace A) are in critical condition. Approximately 30 floor joists exhibited significant concrete cracking and spalling and the rebar was exposed. The steel reinforcement exhibited advanced corrosion and section loss which has resulted in a significant reduction in load capacity in the floor joists.



**Figure 1: Critical area bound by columns 29-30-50-53-73-91-87-29 in Crawlspace A**

- Columns 169 and 173A (Crawlspace B) are spalling at the corners of areas with previous structural modification where loads were transferred from the steel beams through the bolted connections to the concrete columns. The failed repair resulted in a critical condition. This area is below the equipment room at the northwest corner of the west building extension



**Figure 2: Critical columns 169 and 173A in Crawlspace B**

- Three floor joists between columns 167-180-181-172-172A-168-167 (Crawlspace B) are in critical condition. The floor joists exhibited significant concrete cracking and spalling and the rebar was exposed. The steel reinforcement exhibited advanced corrosion and section loss which has resulted in a significant reduction in load capacity in the floor joists.



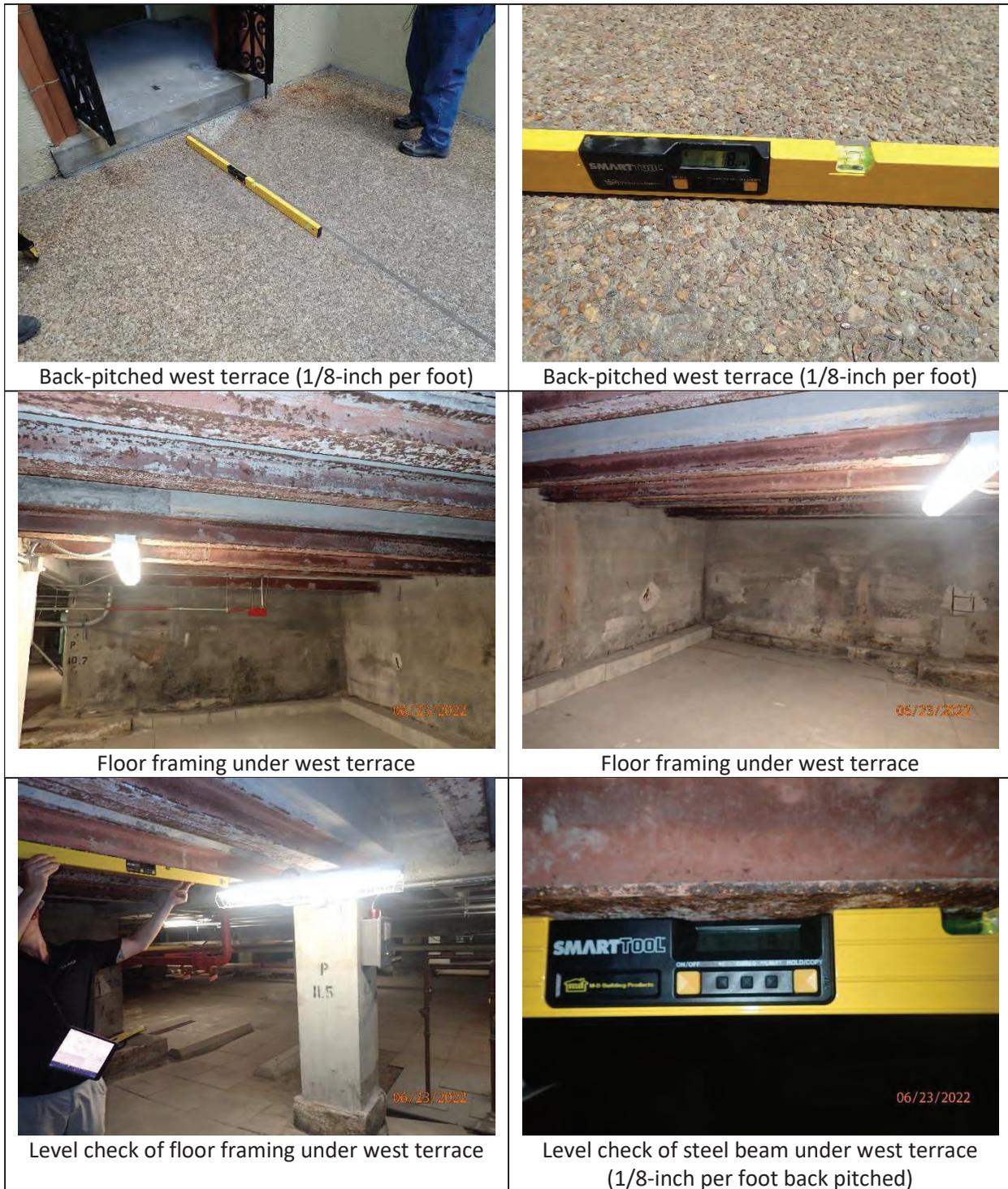
**Figure 3: Critical joists bound by columns 167-180-181-172-172A-168-167 in Crawlspace B**

Within the basement, approximately ten (10) locations of surface corrosion of the composite metal deck underside were brushed with the use of a steel brush and the claw of a welder's hammer. The scratched (brushed) surfaces were inspected for pitting or flaking. No instances of pitting or flaking, indicative of potential loss of structural load-bearing capacity were observed during our inspection. The tested areas were thus rated ***'Fair'***.

Evidence of prior repairs to the reinforced concrete elements was observed in both Crawlspace A and B. The repairs varied in extent and type but were typically limited to epoxy injection within concrete cracks, surface applications of cementitious mortar to cover chipped or spalled concrete, or concrete jackets to the columns, pile caps, and beams. In many cases, the repairs appeared to have been consistent with repairs detailed in the 1983 Renovation and Demolition plans. While most of the repairs were intact and appeared to be functioning as intended, there were several instances where the repairs had failed. Of note, the concrete jacket around column 173 A in Crawlspace B was separated from the original column and was supporting loads imposed by the addition of steel beams and mechanical equipment racks. The locations of failed repairs were accounted for during our assessment of the crawlspace and basement areas.

Ponding water was reported on the surface of the terrace outside the west entrance above Crawlspace B, particularly during periods of heavy rainfall. The finished floor of the terrace was back-pitched toward the doorstep when checked with a hand level. No visible evidence of deformation or vertical displacement was observed on the steel framing joists or concrete slab substrate under the west terrace within Crawlspace B. A slope check of the wide flange (W) steel joists with a hand level indicated that these floor framing components were back-pitched toward the interior, which caused site storm runoff to accumulate near the doorstep. This condition is attributable to the initial improper installation. (See Figure 4 on the next page).

**[SPACE INTENTIONALLY LEFT BLANK]**



Back-pitched west terrace (1/8-inch per foot)

Back-pitched west terrace (1/8-inch per foot)

Floor framing under west terrace

Floor framing under west terrace

Level check of floor framing under west terrace

Level check of steel beam under west terrace (1/8-inch per foot back pitched)

**Figure 4: West terrace and corresponding area of Crawlspace B below**

## REPAIR RECOMMENDATIONS

### Steel Deck

Recommended repairs/maintenance methods include non-abrasive cleaning to remove the surface corrosion and then application of intumescent paint to prevent exposure to the humid environment of the basement as well as restoration of the fireproofing that has been reportedly removed.

### West Terrace

It is recommended that the back pitching be corrected by providing a new suitable tapered topping to a new finish flooring that would allow site storm runoff to drain away promptly.

### Concrete

J.S. Held recommends that repairs of the observed distressed reinforced concrete elements consist of epoxy injection or partial-depth repairs. Epoxy injection should be utilized for cracks within concrete members that have not induced corrosion of the reinforcement or spalling of the concrete. This type of distress was typically found in members classified as **'Good'** or **'Fair'** condition. Epoxy injection restores the integrity of the concrete member when epoxy adhesives are injected within the crack through drilled port holes, filling in the voids between the fractured portions of the concrete. The epoxy also acts as a sealant and prevents moisture penetration along the crack.

For concrete members that exhibit spalled concrete and exposed rebar, a partial-depth repair is required. A partial-depth repair involves the removal of the corroded steel reinforcement and the surrounding concrete past the affected area until sound steel reinforcement and concrete are identified. Minimally, if corroded reinforcement in the repair is exposed and found to have loose oxidation products or is not bonded to the surrounding concrete, it is recommended that the concrete be removed from around the bar. The clear space behind the reinforcing steel should be not less than  $\frac{1}{4}$  inch plus the dimension of the maximum size aggregate in the repair material (typically a total of three inches or more). In addition, concrete removal along the reinforcing bar shall continue until the bar is essentially free from corrosion products. In some cases of advanced corrosion, it may be appropriate to replace the affected reinforcement and concrete along the entire length of the member. Once the affected concrete and rebar are removed, new reinforcement steel should be spliced with the existing steel by doweling into the existing concrete adjacent to the existing steel. Appropriate epoxy adhesives and bonding agents should be used to complete a proper partial-depth repair.

The repairs should be performed in accordance with the ICRI, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion (ICRI 310.1R-2008) [formerly No. 03730]," International Concrete Repair Institute, Rosemont, IL, 2008

Estimated quantities of concrete repairs used for the development of a cost estimate and schedule are included in Tables 3 through 5. These tables include estimated quantities for all concrete members recommended for any type of repair (i.e. epoxy injection and partial-depth repairs) but does not distinguish between the type of repair.

<b>Crawlspace A</b>					
	Member				
	Columns	Joists	Slab	Walls	Beams
<b># Members</b>	49	134	32	27	15
<b>Quantity</b>	570	877	317	157	43
<b>Dimensions</b>	Square Feet	Linear Feet	Square Feet	Square Feet	Linear Feet

**Table 3: Estimated quantities of repairs in Crawlspace A**

<b>Crawlspace B</b>					
	Member				
	Columns	Joists	Slab	Walls	Beams
<b># Members</b>	15	17	12	5	8
<b>Quantity</b>	100	98	131	20	22
<b>Dimensions</b>	Square Feet	Linear Feet	Square Feet	Square Feet	Linear Feet

**Table 4: Estimated quantity of repairs in Crawlspace B**

<b>Basement</b>			
	Member		
	Concrete Columns	Steel Beams	Steel Deck
<b># Members</b>	3	21	N/A
<b>Quantity</b>	3	600	3100
<b>Dimensions</b>	Square Feet	Linear Feet	Square Feet

**Table 5: Estimated quantity of repairs in Basement**

Information regarding concrete materials testing performed as part of this investigation and considered for the recommendations made herein can be found in **Appendix C: Materials Analysis, Appendix D: VCS Corrosion Potential Survey Report, and Appendix E: AAR Concrete Core Compressive Strength Report.**

## Building Envelope

J.S. Held conducted a building envelope survey of the exterior facades, roof surfaces, and interior windows for stories one through five on June 28-29, 2022. Personnel attending the building envelope survey included Mr. Andrew Lovenstein, PE, Mr. Gibson Jones, RA, Mr. Ilan Caballero, PE, and Mr. Andrew Feliciano, EI. The building envelope survey included walking the flat roofs, the exterior, and the interiors of all floors and attic, and conducting both traditional and drone photography. J.S. Held categorized these observations into ‘Good’, ‘Fair’, or ‘Poor’ conditions. Representative photos of ‘good’, ‘fair’, and ‘poor’ members may be found in **Appendix F: Representative Conditions – Building Envelope** attached to this report.

### 1. Low-Sloped Membrane Roofs

- a. Good—the general condition of the low-sloped membrane roofs was free from tears/gouges, uplifted/displaced sections, and openings that were not for plumbing or drainage. Alligator cracking was observed at the curbed portions near metal flashing, and roof patches were observed sporadically.
- b. Fair—some instances of ponding water and raised membrane seams were observed. These conditions could potentially result in long-term deterioration of the roofing system if they are unaddressed.
- c. Poor – a heavily corroded and deteriorated fixed ladder located between two adjacent roofs was observed. This fixed ladder evidenced multiple loose connections and it was found to be in an unsafe condition to use.

### 2. Sloped Tile Roof

- a. Good—the general condition of the tile roofing system was serviceable and capable of performing as intended for several more years despite sporadic cracked and broken tiles. Previous repair activity was observed in the form of a sealant to try and re-bond the cracked and broken tiles.
- b. Fair—one slipped hip cap was observed at the southwestern most turret. Sporadic cracked tiles, most of them which had been repaired in the past, were observed.

### 3. Attic

- a. Good—generally speaking, the typical condition of the attic space above the fifth story of Building 1 was consistent with wooden rafters and the wooden plank decking being free from discoloration or deterioration. A history of repair activity indicated general upkeep of the attic space including instances of plywood decking replacement and sistering of rafters. There was one instance of a replaced rafter along the north end of the attic space.

- b. Fair—some instances of wear were observed within the attic space. Specifically, 1/4-inch stairstep cracks were observed in the masonry wall situated on the central east wall of the attic. Approximately 28 square feet of stained plank decking was observed throughout the attic space. Three instances of a missing bolt from an L-bracket were observed along the south end of the attic space.
- c. Poor—approximately 50 square feet of deteriorated plank decking was observed throughout the attic space. One deteriorated rafter tail was observed near the northeast side of the attic. We recommend removing and replacing the approximate 50 square feet of deteriorated plank decking and spraying the repaired areas with a borate solution to prevent any wood rot from termites and other insects. We also recommend sistering the deteriorated rafter tail and also spraying the area with a borate solution to prevent further wood rotting in this area. Completed termite inspection reports can be found in ***Appendix G: Termite Inspection Reports.***

#### 4. Windows

- a. Good – the vast majority of windows were in good condition. More specifically, most of the insulated windows did not evidence breakage of glass, bent or distorted frames and/or lateral displacement, or other damage caused by wind and debris during the hurricane.
- b. Fair - daylight was observed along the interface between the window frame and exterior walls within multiple windows. A closer inspection of these areas revealed that the sealant between these two interfaces was cracked. This could allow a point of entry for water to enter the interior.
- c. Poor - multiple windows, mostly on the upper floors, were fogged. This condition was a result of deteriorated or shrunken window seals and windowpane spacers. Particularly, shrunken seals within the insulated glass panes where the spacers designed to maintain a sealed separation between the glass panes had become deteriorated. Also, one cracked windowpane on the east elevation of the first story was observed.

#### 5. Exterior

- a. Good—the general condition of the exterior stucco was serviceable without any evidence of bowing, impacts, or openings. Hairline cracks were observed sporadically and were often found around window openings and within the field of large wall sections.
- b. Fair - Cracks were observed on the exterior around the attic vent. Some cracks were painted, and sealant consistent with previous repairs was also observed within the cracks. Also, two decorative columns along the front elevation were chipped and/or partially broken.

- c. Poor - some evidence of water intrusion into the stucco system and bulging at the head condition of windows at the west entry of Building 1. Multiple areas of deteriorated and/or rotted wooded soffit were observed.

Mr. Gibson Jones, RA, and Mr. Andrew Lovenstein, PE revisited Building 1 on August 11, 2022, to inspect areas with reported water intrusion. Existing drawings from the 1983 renovation were referenced to identify areas where water was entering the building envelope.

1. West building 1 (Area B) upper part of the second story.
  - a. Reported water intrusion at the roof to upper wall flashing and at the overhang of the sloped roof consistent with flashing issues and located along the areas where there are copper gutters and downspouts per the 1983 renovation drawings (Figures 5 and 6).
2. East building 1 (Area A) third-story window south side.
  - a. Reported water intrusion (active leak) at the head condition of the window from the exterior and sill above. The 1983 renovation drawings show details consistent with this location and condition (Figure 7).
3. East building 1 (Area A) fifth-story windows east side.
  - a. Reported water intrusion (active leak) at and through the unsealed joints at the center and edges of the pre-cast sill condition of the windows along the porch. The pre-cast sills as described in the section/detail shown are consistent with this location and condition per the 1983 renovation drawings (Figure 8).
4. East building 1 (Area A) Attic / Roof above fifth-story windows on the east side.
  - a. Reported water intrusion (active leak) at and through the unsealed portions of the copper gutter, flashing and roofing along and above the windows along the porch. The internal copper gutter and roofing details as described in the section/detail shown are consistent with this location and condition per the 1983 renovation drawings (Figure 9).
5. East building 1 (Area A) Roof above fifth-story windows west side.
  - a. Active water intrusion at the gutter and flashing along the east side above the porch. Repair in progress to roofing membrane and flashing. Tiles removed in area to roofing membrane, scupper downspout from upper flat roof removed and redirected, gutter observed to be holding water after recent morning rain.



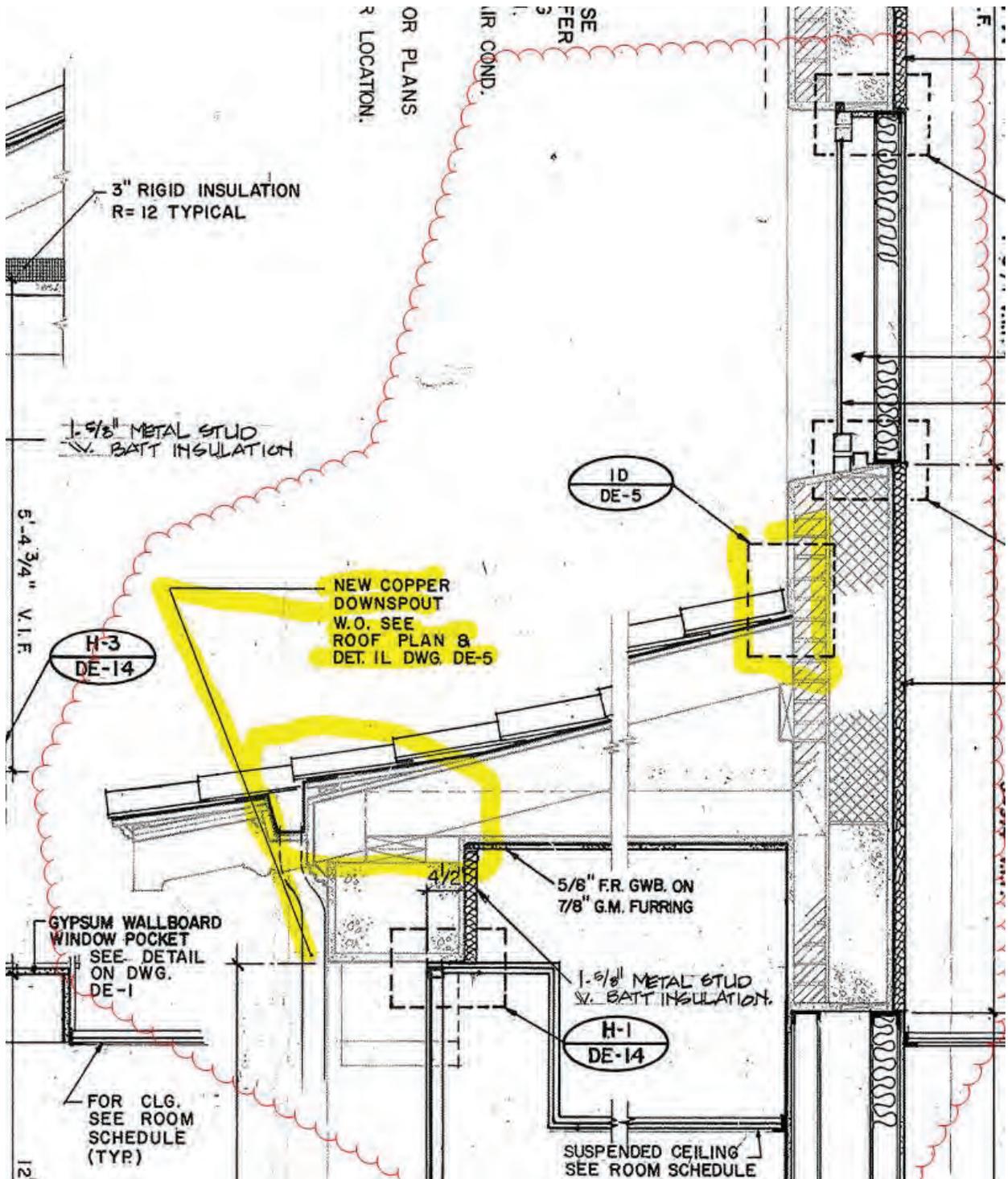


Figure 6: Area B where leaks reported as shown in detail section from 1983 renovation drawings.

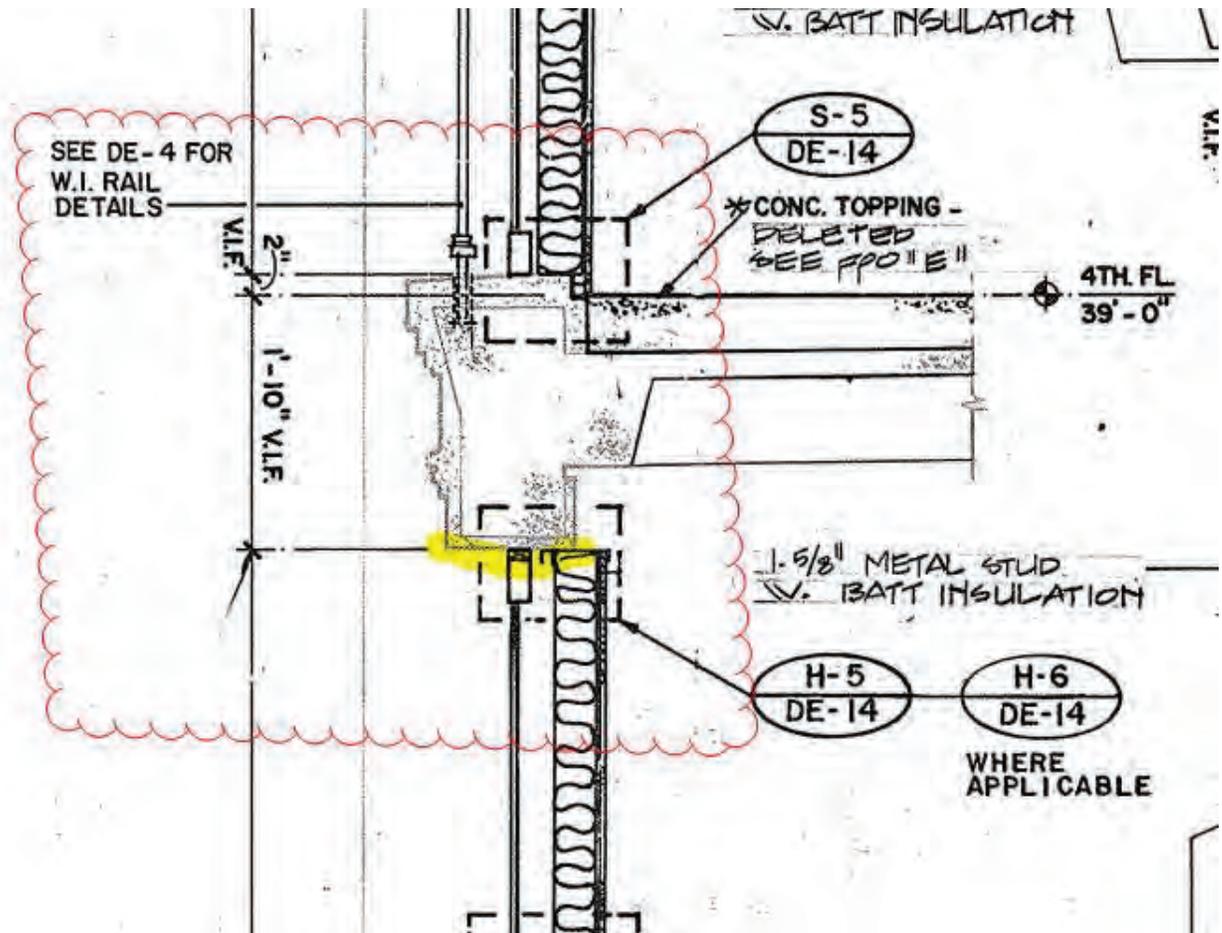


Figure 7: Third-story window head condition from 1983 renovation drawings

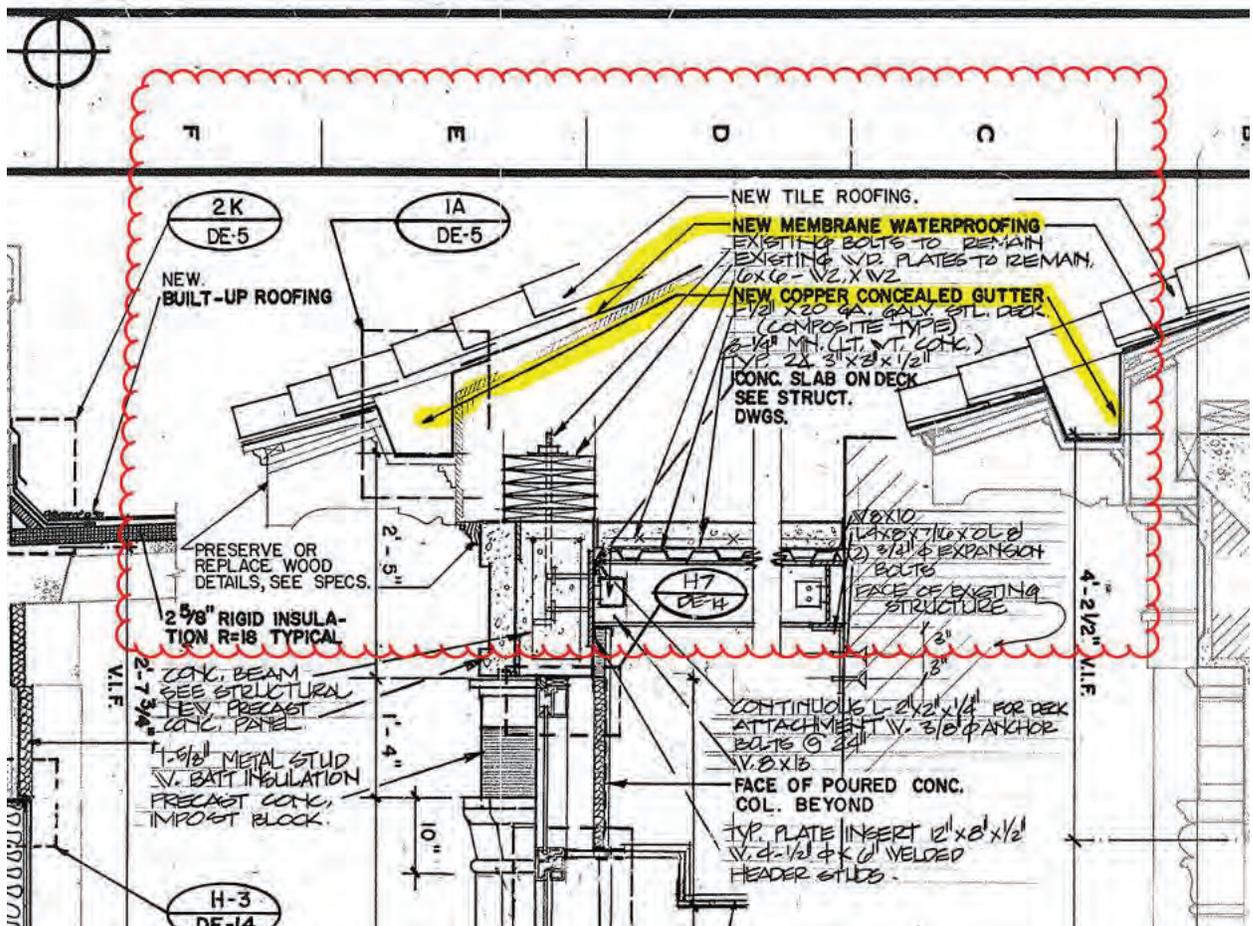


Figure 8: Concealed gutter detail at fifth story from 1983 renovation drawings

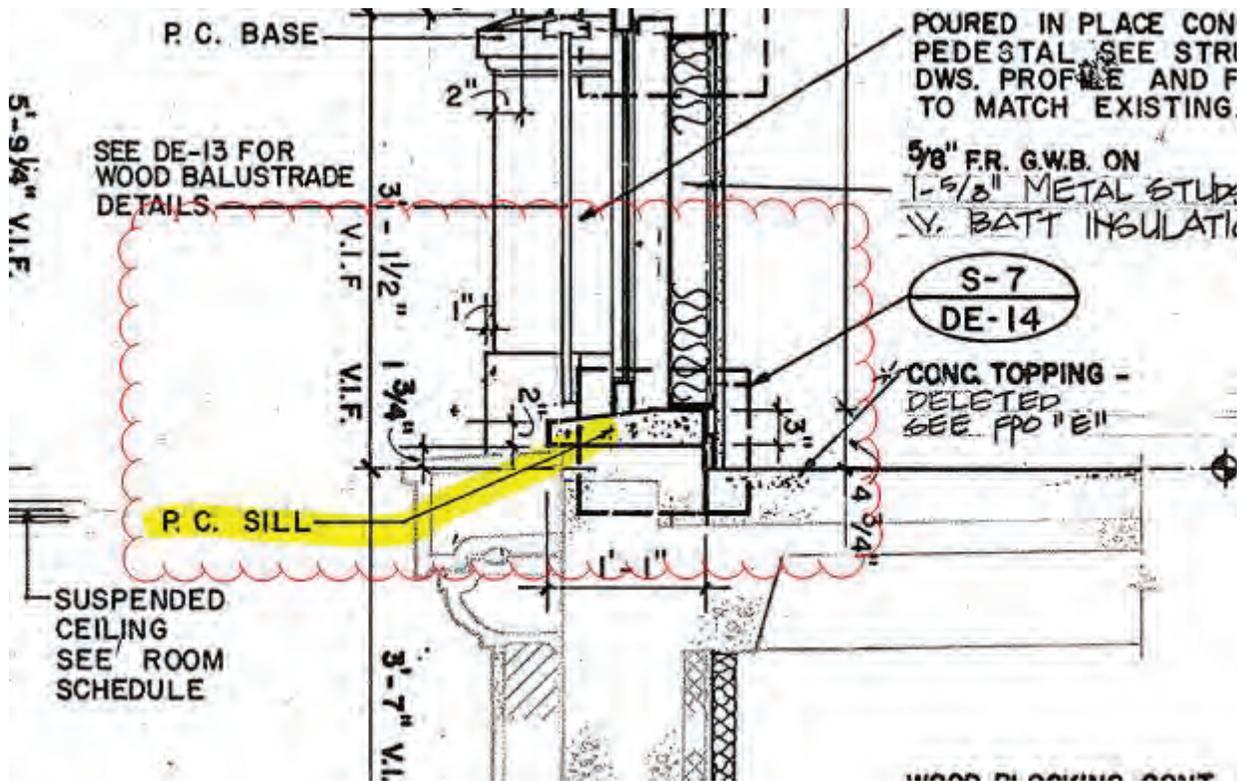


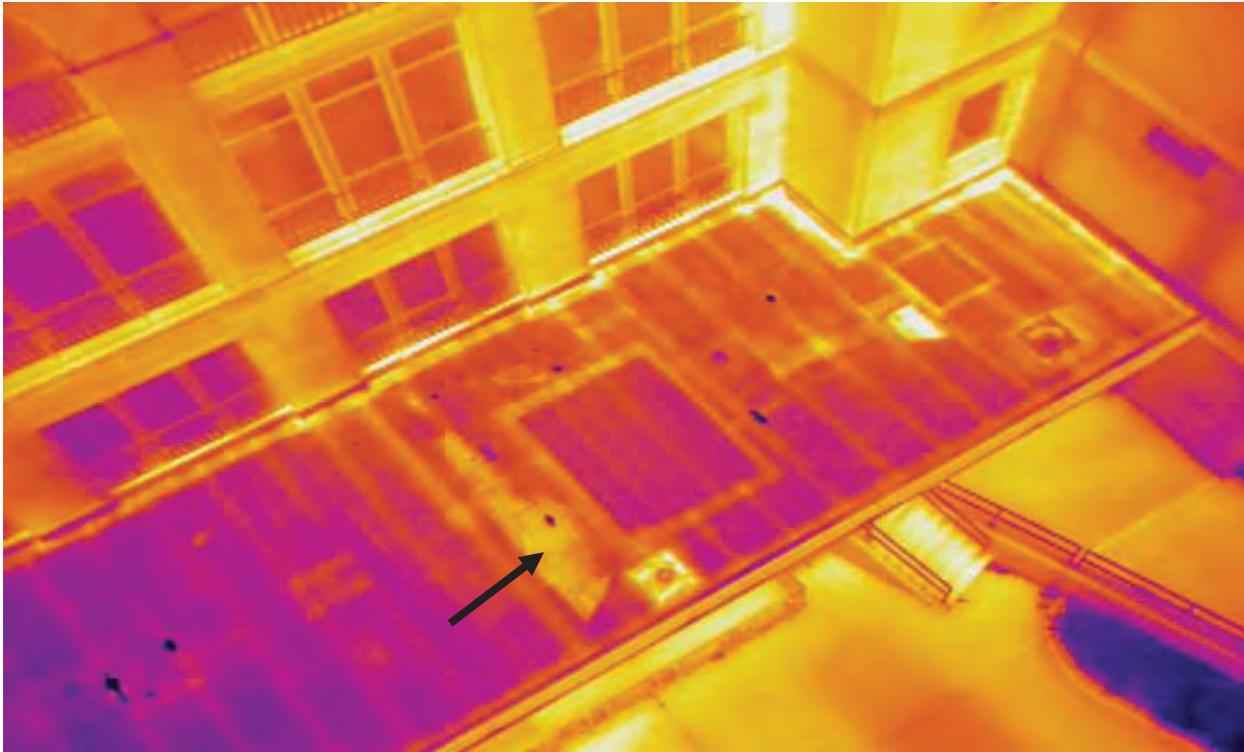
Figure 9: Pre-cast sill at fifth-story window detail from 1983 renovation drawings

## Infrared Roof Survey

J.S. Held conducted an infrared (IR) thermographic survey of the flat roof surfaces with the use of a DJI Matrice drone on June 27, 2022, around sunset. Personnel attending the IR survey include Mr. Andrew Lovenstein, PE, Mr. Gibson Jones, RA, and Mr. Wesley Kendrick, EI. Roofing materials are heated by the sun and ambient temperature during the day; as the roof begins to cool, any water that has penetrated the roofing assembly will cool slower than the roof surface and any dry materials below the surface. This differential cooling results in thermal gradients that emit different levels of heat energy. The IR camera analyzes the heat energy radiating from the dry and wet areas, and it produces thermograms (also called infrared images) showing a visual representation of these differences, thus indicating the likely presence of water beneath the roofing assembly. A thermal anomalous area was identified at the first-story loading dock roof adjacent to Area A (facing the west). This anomaly was located adjacent (to the north) to a prior repair patch. Inspection of the anomaly revealed a raised membrane seam and some ponding water without evidence of any openings, breaks, or tears in the membrane system. An overview of this anomaly may be found in Figures 10 and 11 below.

The following observations were made using the ‘Good,’ ‘Fair,’ ‘Poor’ rating scale:

- a. Good – The tile roofing and the majority of the low slope roofing observed did not reveal any anomalies.
- b. Fair – An infrared anomaly was observed near the center of the loading dock's low slope roofing. Water was ponding on this roof area. The roofing should be pitched to prevent ponding water.
- c. Poor – No poor conditions were observed via the Infrared observations



**Figure 10: Overview of IR Anomaly at Area A Loading Dock Roof (arrow)**



**Figure 11: Overview of IR Anomaly at Area A Loading Dock Roof (arrow)**

## Historical Assessment

J.S. Held conducted a building envelope survey of the historic elements of the exterior facades and the historic interiors for stories one and two on June 24, 28 and 29, 2022. The historical assessment led by Mr. Gibson Jones, RA, also included Mr. Andrew Lovenstein, PE, Mr. Ilan Caballero, PE, and Mr. Andrew Feliciano, EI. The survey also included digitally scanning of the first and second-story lobbies with a Matterport camera by Mr. Brandon Weber. J.S. Held categorized these observations into ‘Good,’ ‘Fair,’ or ‘Poor’ conditions. Representative photos of ‘good,’ ‘fair,’ and ‘poor’ members may be found in **Appendix H: Representative Conditions - Historical Assessment** attached to this report.

1. First and second-story Lobbies
  - a. Good—the general condition of the first and second-story lobby finishes is good. The renovation of Building 1 excludes the lobbies in stories one and two. The tiled floor finishes, the wall wainscot, and painted wood ceiling beams are well maintained and preserved.
2. Exterior Ornamentation
  - a. Good—the general condition of the exterior ornamentation in the “Spanish Baroque or Churrigueresque” style surrounding the windows and doors on the entry facades of areas A and B are well maintained and in generally good condition.
  - b. Poor—the polychromatic terra-cotta tiled cornice is cracked below the second-story balcony of the east main entrance stairs.
  - c. Poor – there is a polychromatic terra-cotta column that is broken on the east main entrance.
3. Porches and Colonnades
  - a. The porches of the second through fifth stories of Area A and the second story of Area B were originally screened in when constructed in 1933. They were enclosed during the 1983 renovation and the stucco finishes were covered over and windows installed into the screened openings. As part of the 2022 renovation, the framing and finishes have been removed exposing the original colonnades and porch construction and finishes. These architectural elements were modified before being placed on the National Historic Register in 1983.

## CONCLUSIONS

J.S. Held presents the following conclusions and recommendations based on our assessment of Building 1:

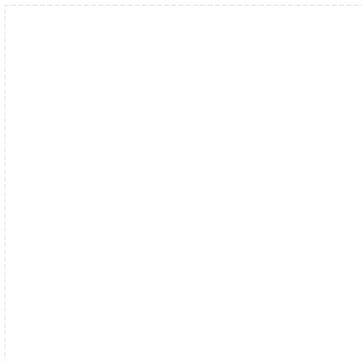
- Multiple structural elements of the first-story concrete floor structure were deemed to be in critical condition. It is recommended that temporary shoring be installed within the crawlspaces to support these areas prior to the conclusion of the ongoing renovation and return to full building occupancy.
- Multiple structural elements within the basement/crawlspace area were deemed to be in ‘**Poor**’ and ‘**Fair**’ condition as outlined in this report. The repair of elements deemed poor is more urgent than those deemed to be fair, though it may be more economically feasible to repair all poor and fair elements at the same time. A complete cost and schedule analysis assuming the completion of all recommended repairs can be found in **Appendix I: Cost and Schedule Analysis**.
- Surface corrosion of the metal floor deck underside and steel beams was observed from within the basement. This condition can be mitigated by cleaning and painting the steel components.
- A detached ladder from a low slope roof area to a higher low slope roof area presents a potential life safety concern for workers on the roof and should be corrected with urgency.
- Water intrusion through the roof membrane, flashing, and roof framing has entered the roof framing system and caused deterioration of the roof rafters and decking. It is recommended that the roof underlayment and flashing be repaired along with all deteriorated plank roof decking and rafter tails within the attic space.
- A crack on the inside face of the east gable end masonry wall as viewed from within the attic exhibited signs of being long-term in nature and structurally insignificant, though a localized repair can be performed.
- Repairs to the building envelope include repairing and painting the cracked stucco exterior wall coverings, and replacement of deteriorated components such as flashings and sealants as required.

## CLOSING

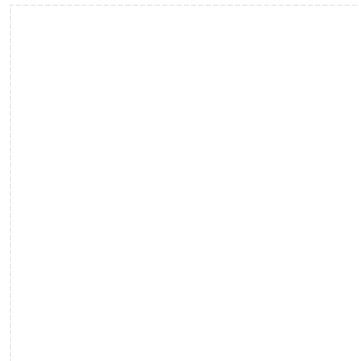
Thank you for the opportunity to provide professional services. The opinions and conclusions in this report have been formulated within a reasonable degree of professional certainty. Please note that J.S. Held Engineering Services opinions are based on the information provided and/or obtained as well as our training, knowledge and experience. To the extent that hidden conditions exist, and/or additional information is made available, J.S. Held Engineering Services reserves the right to revise or update any of the observations, assessments, and/or opinions as conditions change or additional information is provided for our review.

### J.S. Held LLC

FL Certificate of Authorization No. 32532



Andrew Lovenstein, PE, SI  
Senior Engineer II  
FL License No. 58097



Gibson M. Jones Jr., R.A.  
Register Architect  
Florida Registered Architect No. AR-0015447

This item has been electronically signed and sealed by Andrew Lovenstein, PE, SI and Gibson M. Jones, RA, on October 14, 2022, using a Digital Signature. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

## APPENDIX A: REPRESENTATIVE CONDITIONS – BASEMENT AND CRAWLSPACE

Location	Structural Component	Label/ Grid	Condition	Distress Description	Photo
Crawlspace A	Joists and Slab	52-53, 72-73	Critical	Spalled concrete, exposed and corroded rebar with section loss	
Crawlspace A	Joists	79-80, 97-98	Poor	Spalled concrete	
Crawlspace B	Column	N.5-14.9 (173A)	Critical	Spalled concrete, failed repair	

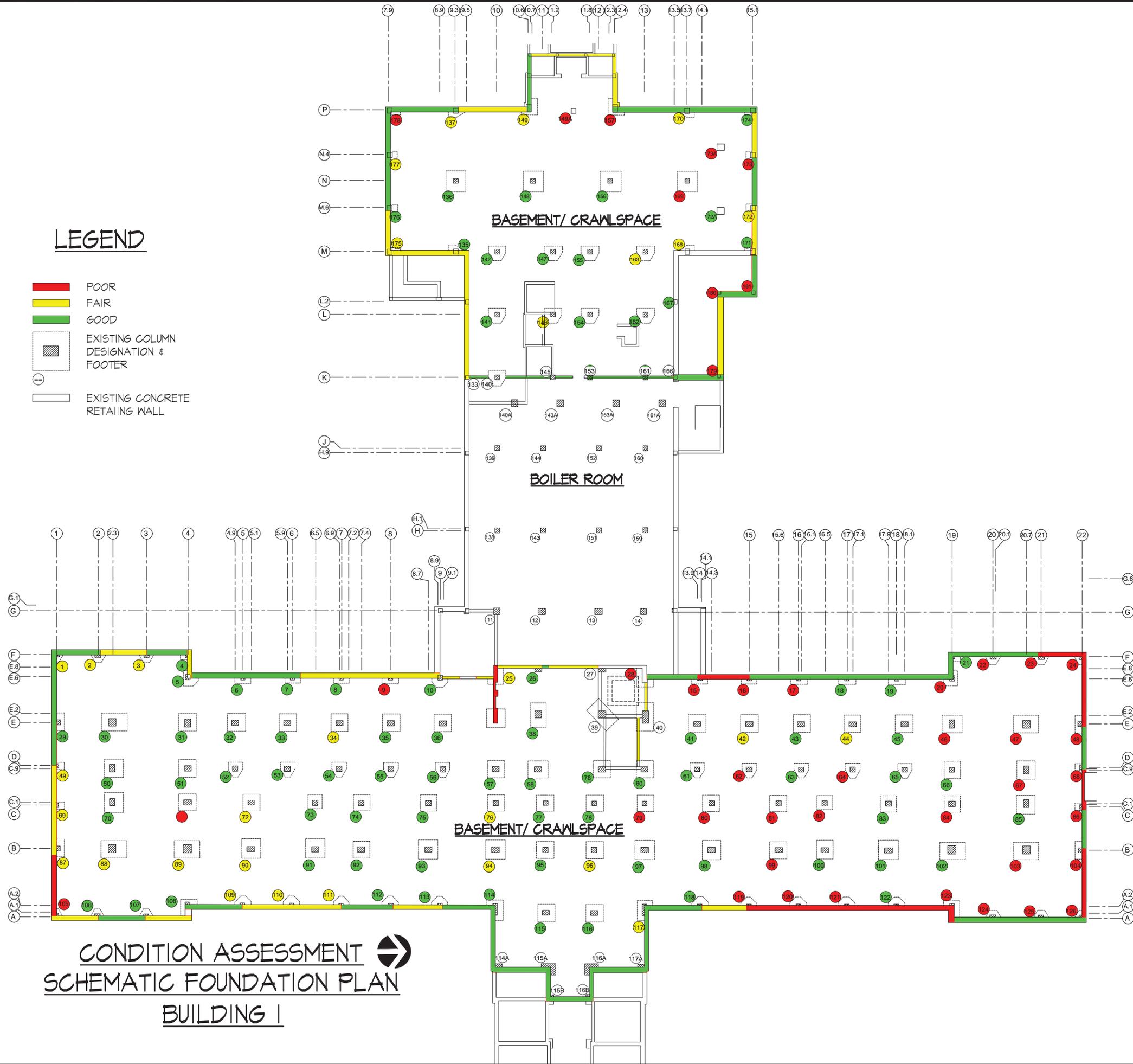
Location	Structural Component	Label/ Grid	Condition	Distress Description	Photo
Crawlspace A	Column	E-20.7	<b>Poor</b>	Spalled concrete	
Crawlspace A	Column	B-20.7	<b>Fair</b>	Spalled concrete	
Crawlspace A	Column and Pile Cap	C.9-18.1	<b>Good</b>	None	

Location	Structural Component	Label/ Grid	Condition	Distress Description	Photo
Crawlspace A	Beam	C.1-19 – C.1- 20.7	Fair	Spalled concrete	
Crawlspace A	Slab underside	23-24, 47-48	Fair	Exposed rebar	
Crawlspace A	Pile cap	64	Poor	Cracked pile cap and column	

Location	Structural Component	Label/ Grid	Condition	Distress Description	Photo
Basement	Composite metal deck underside	K-J	<b>Fair</b>	Light surface corrosion	

**LEGEND**

- POOR
- FAIR
- GOOD
- EXISTING COLUMN DESIGNATION & FOOTER
- EXISTING CONCRETE RETAINING WALL



**CONDITION ASSESSMENT**  
**SCHMATIC FOUNDATION PLAN**  
**BUILDING I**

**JS HELD**  
 Forensics A&E  
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 754-212-5512 tel.

DEPARTMENT OF VETERANS AFFAIRS - BLDG 1  
 10000 BAY PINES BLVD  
 BAY PINES, FL 33744  
 JOB NUMBER: 22050462

NO.	REVISIONS:	DATE:

DRWN. C/WB    CHK. AL  
 SCALE: NTS  
 DATE: 7-11-2022

**LEGEND**

- POOR
- FAIR
- GOOD
- EXISTING COLUMN DESIGNATION
- EXISTING CONCRETE RETAINING WALL



**SLAB UNDERSIDE & FLOOR JOIST  
ASSESSMENT SCHEMATIC PLAN  
BUILDING I**

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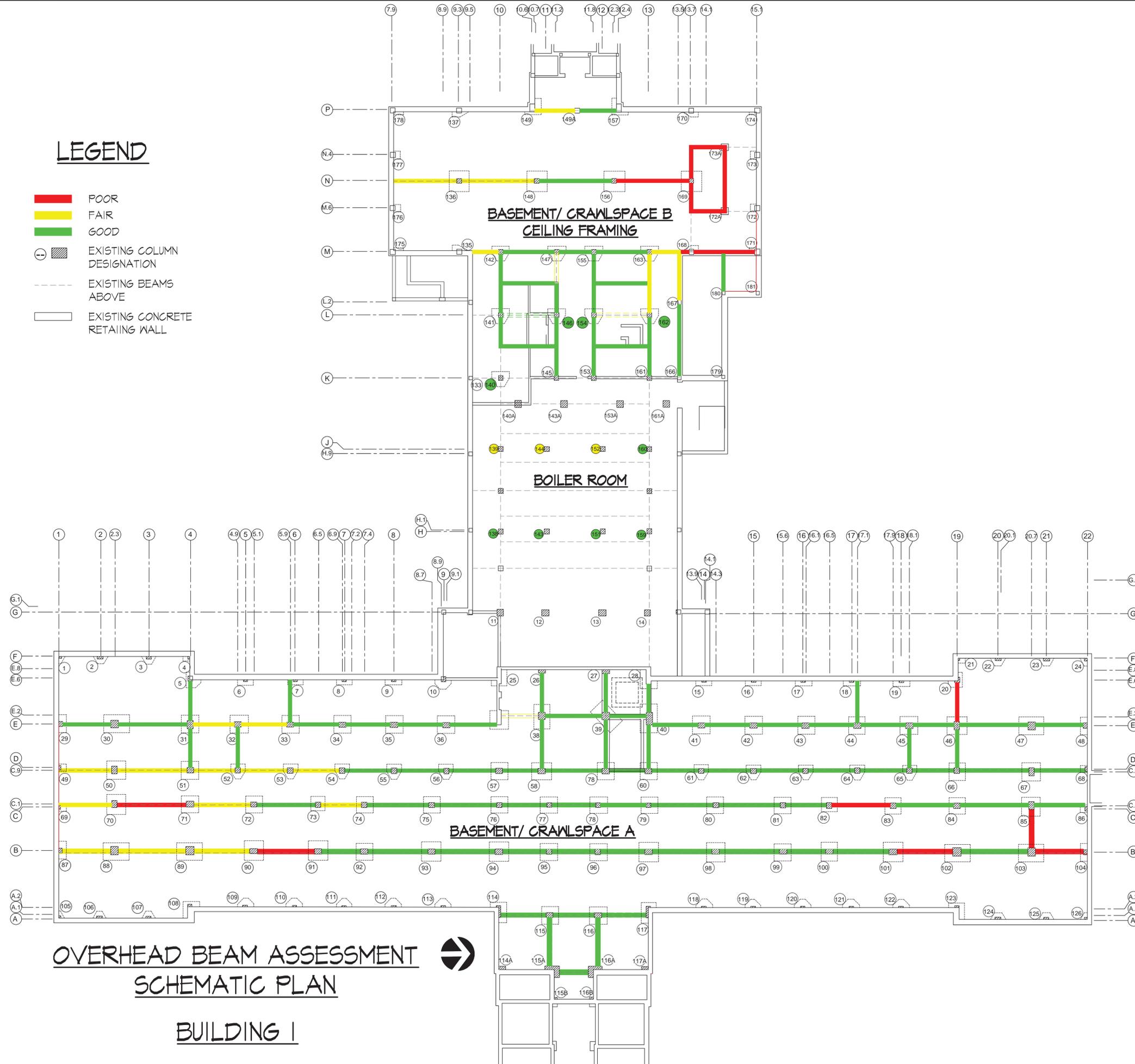
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BAY PINES, FL 33744  
JOB NUMBER: 22050462

NO.	REVISIONS:	DATE:

DRWN. **CWB**    CHK. **AL**  
SCALE: **NTS**  
DATE: **7-11-2022**

# LEGEND

- █ POOR
- █ FAIR
- █ GOOD
-  EXISTING COLUMN DESIGNATION
-  EXISTING BEAMS ABOVE
-  EXISTING CONCRETE RETAINING WALL



**OVERHEAD BEAM ASSESSMENT**  
**SCHEMATIC PLAN**  
**BUILDING I**

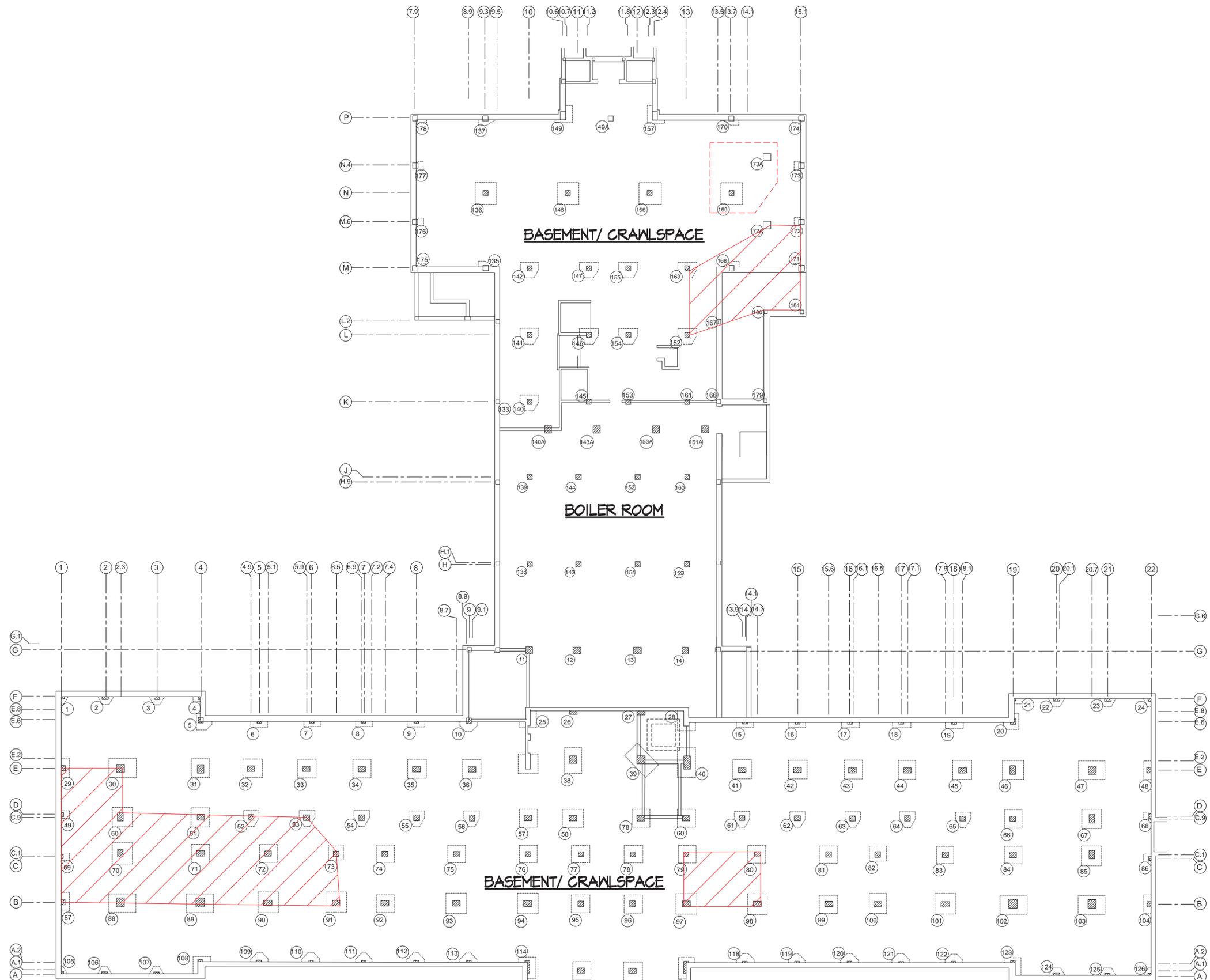
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NO.	REVISIONS:	DATE:

DRWN. **CWB**    CHK. **AL**  
 SCALE: **NTS**  
 DATE: **7-11-2022**

## APPENDIX B: SHORING OF BASEMENT AND CRAWLSPACE CRITICAL AREAS



**CRITICAL AREAS REQUIRING SHORING**  
**BUILDING I**



**LEGEND**

-  EXISTING COLUMN DESIGNATION & FOOTER
-  SHORING OF BEAMS AND JOISTS FRAMING INTO COLUMNS
-  SHORING OF BEAMS AND JOISTS



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DRWN. CWB	CHK. AL
SCALE: NTS	
DATE: 7-11-2022	