

SPECIFICATIONS AND PROPOSAL

FOR

REPAIR ELEVATOR AT ALOHA TOWER

HONOLULU HARBOR, OAHU, HAWAII

JOB S10842R

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

NOTICE TO BIDDERS
Hawaii Revised Statutes (HRS),
Chapter 103D

The receiving of bids for REPAIR ELEVATOR AT ALOHA TOWER, HONOLULU HARBOR, OAHU, HAWAII, JOB S10842R, will begin as of the HiePRO Release Date. Bidders shall register and submit complete bids through HiePRO only. Refer to the following HiePRO link for important information on Vendor Registration: <https://hiepro.ehawaii.gov/welcome.html>.

The solicitation plans, specifications, proposal, and additional documents designated or incorporated by reference shall be available in HiePRO.

HiePRO OFFER DUE DATE & TIME is **October 17, 2024, at 2:00 p.m., Hawaii Standard Time (HST)**. **Bidders shall submit and upload the complete proposal to HiePRO prior to the offer due date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HiePRO. Bidders shall not include confidential and/or proprietary documents as part of their proposal. The record of each bidder and their respective proposal shall be open to public inspection. FAILURE TO UPLOAD THE PROPOSAL TO HiePRO SHALL BE GROUNDS FOR REJECTION.**

The scope of work consists of repairing the elevator at Aloha Tower. Major items of work include demolition and removal of existing elevator equipment and elevator equipment closet at 11th floor; installation of new elevator equipment; construction of new elevator equipment closet with window air conditioning unit; replacement of mechanical elevator stop indicators at each floor with new electric indicators; refurbishment of existing elevator cab interior; painting of existing elevator door jambs at each floor;

painting; mechanical and electrical work; one year maintenance service contract; and all other related work required. The estimated cost of construction is between \$500,000.00 and \$700,000.00.

To be eligible for award, bidders shall possess a valid State of Hawaii General Building “B” license **at the time of bidding.**

The Hawaii Department of Transportation, Air and Water Transportation Facilities Division, 2016 GENERAL PROVISIONS FOR CONSTRUCTION PROJECTS, applicable to this project are available on the internet at:

<http://hidot.hawaii.gov/administration/con/>.

A virtual pre-bid conference is scheduled for **October 1, 2024, at 9:00 a.m., HST.** Interested bidders shall contact Mr. Branden Sumida, Project Manager, directly at branden.sumida@hawaii.gov, no later than five working days prior to the scheduled pre-bid conference to receive the meeting invitation. All prospective bidders and/or their respective representatives are encouraged to attend, however, attendance is not mandatory. All information presented at the pre-bid conference shall be provided for clarification and information only. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

All Request for Information (RFI) questions and Substitution Requests shall be submitted in HIePRO **no later than October 3, 2024, at 2:00 p.m., HST.** RFI questions received after the stated deadline shall not be addressed. Substitution Requests received after the stated deadline shall not be considered. Verbal RFI(s) shall not receive a response. All responses to RFI questions shall be provided for clarification and information only and issued by formal addendum. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

If there is a conflict between the solicitation and information stated in the pre-bid conference, the meeting minutes, and/or the responses to RFI questions, the solicitation shall govern and control, unless as amended by formal addendum.

Apprenticeship Preference. A five percent bid adjustment for bidders that are party to apprenticeship agreements pursuant to HRS, § 103-55.6, is applicable to this project.

Employment of State Residents on Construction Procurement Contracts. Compliance with HRS, § 103B-3, is a requirement for this project whereby a minimum of 80 percent of the bidder's work force on this project shall consist of Hawaii residents.

Campaign Contributions by State and County Contractors. Contractors are hereby notified of the applicability of HRS, § 11-355, which states that campaign contributions are prohibited from specified State or County government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body. For more information, contact the Campaign Spending Commission at (808) 586-0285.

Protests. Any protest of this solicitation shall be submitted in writing to the Director of Transportation, in accordance with HRS, § 103D-701, and Hawaii Administrative Rules, § 3-126.


The Equal Employment Opportunity Regulations of the Secretary of Labor implementing Executive Order 11246, as amended, shall be complied with on this project.

The U.S. Department of Transportation Regulation entitled "Nondiscrimination in Federally Assisted Programs of the U.S. Department of Transportation", Title 49, Code of Federal Regulations (CFR), Part 21, is applicable to this project. Bidders are hereby notified that the Department of Transportation shall affirmatively ensure that the contract entered into pursuant to this advertisement shall be awarded to the lowest responsible

bidder without discrimination on the grounds of race, color, national origin, or sex (as directed by 23 CFR, Part 200).

For additional information, contact Branden Sumida, Project Manager, by phone at (808) 587-1873, or by email at branden.sumida@hawaii.gov.

The State reserves the right to reject any or all proposals and to waive any defects in said proposals in the best interest of the public.



DREANALEE K. KALILI
Deputy Director of Transportation for Harbors

HIePRO RELEASE DATE: September 12, 2024

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INSTRUCTIONS FOR CONTRACTOR'S LICENSING

"A" general engineering contractors and "B" general building contractors are reminded that due to the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area where the general contractor has no license. Although the "A" and "B" contractor may still bid on and act as the "prime" contractor on an "A" or "B" project (*See, HRS § 444-7 for the definitions of an "A" and "B" project.*), respectively, the "A" and "B" contractor may only perform work in the areas in which they have the appropriate contractor's license (*An "A" or "B" contractor obtains "C" specialty contractor's licenses either on its own, or automatically under HAR § 16-77-32.*). The remaining work must be performed by appropriately licensed entities. It is the sole responsibility of the contractor to review the requirements of this project and determine the appropriate licenses that are required to complete the project.

SPECIAL PROVISIONS

The General Provision is amended as follows:

A. ARTICLE I - TERMS, ABBREVIATIONS, AND DEFINITIONS

1. Section 1.3 Definitions: The definition for “Subcontractor” is amended by deleting it and replacing it with the following:

“Subcontractor - An individual, partnership, firm, corporation, or joint venture, or other legal entity, as licensed or required to be licensed under Chapter 444, Hawaii Revised Statutes, as amended, which enters into an agreement with the Contractor to perform a portion of the work.”

Section 1.3 Definitions: The definition for “Proposal (or Bid)” is amended by deleting it and replacing with the following:

2. “PROPOSAL (OR BID) - The offer of a Bidder, on the prescribed HDOT form, submitted by the Bidder in response to a solicitation request, to perform the work required by the proposed contract documents, for the price quoted and within the time allotted.”

3. Add the following to section 1.3 Definitions.

“HAWAII ePROCUREMENT SYSTEM (HIePRO) - The State of Hawaii eProcurement System for issuing solicitations, receiving proposals and responses, and issuing notices of award.”

B. ARTICLE II - STANDARD PROVISIONS FOR COMPETITIVE SEALED BIDS AND AWARDS

1. 2.7 Request for Substitution of Specified Materials and Equipment Before Bid Opening is amended as follows:

- a. The last sentence in the first paragraph (line 147 to 152) be replaced with the following:

“Where a bidder intends to use a material or equipment of an unspecified brand, make, or model, the bidder must submit a request to the Department for review and approval at the earliest date possible. Requests shall be submitted via email to the Contact person listed in HIePRO for the solicitation and also posted as a question in HIePRO under the question/answer tab referencing the email with the request. The request must be posted in HIePRO no later than fourteen (14) calendar days before the bid opening date.”

- b. The first sentence in the second paragraph (line 154 to 156) shall be replaced with the following:

“It shall be the responsibility of the bidder to submit sufficient evidence based upon which a determination can be made by the Department that the alternate brand is a qualified equivalent.”

2. 2.8 Preparation and Delivery of Bid is amended as follows: Last paragraph (line 189 to 192) shall be replaced with the following:

“Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO.

FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.

If there is a conflict between the specification document and the HIePRO solicitation, the specifications shall govern and control, unless otherwise specified.”

3. 2.11 Bid Security is amended by deleting (a) and replacing it with:

“(a) Unless directed otherwise in the invitation for bids, each bid shall be accompanied by bid security which is intended to protect the Department against the failure or refusal of a bidder to execute the contract for the work bid or to supply the required performance and payment bonds. Bid security shall be in an amount equal to at least five percent of the base bid and additive alternates. Bid security shall be in one of the following forms:

- (1) A deposit of legal tender;
- (2) A valid surety bid bond, underwritten by a company licensed to issue bonds in the State of Hawaii; or
- (3) A certificate of deposit; credit union share certificate; or cashier’s, treasurer’s, teller’s, or official check drawn by or a certified check accepted by a bank, savings institution, or credit union insured by the Federal Deposit Insurance

Corporation (FDIC) or the National Credit Union Administration (NCUA) and payable at sight or unconditionally assigned to the Department. These instruments may be utilized only to a maximum of one hundred thousand dollars (\$100,000.00). If the required amount totals over one hundred thousand dollars (\$100,000.00), more than one instrument not exceeding one hundred thousand dollars (\$100,000.00) each and issued by different financial institutions shall be accepted.

If bidder elects options (1) or (3) above for its bid security, said security shall be in its original form and shall be submitted before the bid deadline to the Contract Office, Department of Transportation, Aliiimoku Hale, 869 Punchbowl Street, Room 105, Honolulu, Hawaii 96813. **Original surety bid bonds do not need to be submitted to the Contracts Office. Bidders are reminded that a copy of its bid bond shall be included with its bid uploaded to HlePRO.**

4. 2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS is amended by deleting 2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS in its entirety and replacing with the following:

“2.12 PRE-OPENING MODIFICATION OF WITHDRAWAL OF BIDS. Bids may be modified or withdrawn prior to the bid opening date and time. Withdrawal or revision of proposal shall be completed, and submitted and uploaded to HlePRO prior to the bid opening date and time.”
5. 2.14 Public Opening of Bids is amended by deleting 2.14 Public Opening of Bids in its entirety.
6. 2.20 Bid Evaluation and Award is amended by replacing 2.20(a) and 2.20(b) with the following:

“(a) The award shall be made to the lowest, responsive, responsible bidder within 120 days after bid opening and shall be based on the criteria set forth in the invitation for bids. The Department may request the bidders to allow the Department to consider the bids for the issuance of an award beyond the 120 day period. Agreement to such an extension must be made by a bidder in writing. Only bidders who have agreed to such an extension will be eligible for the award.

(b) No bid shall be withdrawn or corrected for a period of 120 days after bid opening except for a mistake as described in this article;

however, a bidder may withdraw a bid without penalty anytime prior to award of the contract if it finds it is unable to comply with the provisions regarding the employment of State of Hawaii residents as described in Section 7.2 and 103B-3, H.R.S.”

C. ARTICLE VII - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

1. 7.1 Insurance Requirements is amended by deleting paragraph “(b)(4) Builder’s Risk for All Work” in its entirety.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HONOLULU, HAWAII

SPECIFICATIONS

PART I

GENERAL PROVISIONS

The Hawaii Department of Transportation AIR and WATER Transportation Facilities Division General Provisions for Construction Projects dated 2016 is not physically included in these specifications. The General Provisions are available at

<http://hidot.hawaii.gov/administration/con/>

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HONOLULU, HAWAII

SPECIFICATIONS

PART II

TECHNICAL PROVISIONS

ARTICLE X - PROJECT DESCRIPTION

10.1 GENERAL - The work to be done under this project includes furnishing all labor, materials and equipment necessary to repair the elevator at Aloha Tower, Honolulu Harbor, Oahu, Hawaii. Address: 1 Aloha Tower Drive, Honolulu, HI 96813.

Bidders are advised to examine the existing conditions at the project site to familiarize themselves with the nature and extent of work involved. Appointments may be made with the Harbors Engineer for clarification of the work involved and the character and quality of materials specified.

Approximate repair locations are indicated on the plans. Actual methods of repair may vary from that indicated on the drawings. The Construction Engineer reserves the right to alter repair methods, sizes, and locations to suit field conditions.

10.2 SCOPE OF WORK - The work to be done includes, but is not necessarily limited to, the following major items of work:

- A. Mobilization and demobilization.
- B. Providing a detailed site-specific Best Management Practices (BMP) Plan.
- C. Lead Paint Control Measures.
- D. Selective Demolition.
- E. Construction of new elevator equipment closet with new window air conditioning unit.
- F. Furnishing and installing new elevator equipment and refurbish elevator cab interior.
- G. Preparing and painting of existing elevator door jambs at each floor; exposed interior items and surfaces; and existing surfaces affected by work under this project.
- H. Mechanical work.
- I. Fire Sprinkler System.
- J. Fire Alarm System.
- K. Electrical work.

10.3 CONTRACT DRAWINGS - The location and size of the repair areas shown on the plan are approximate and are included for bidding purposes only. All structures and portions of structures shown on the plan are existing unless specifically noted. Existing conditions shown are based on the best available information. No guarantee is given that they are more than approximately correct.

10.4 WORK SCHEDULE - The work schedule and assignment of storage area(s) shall be coordinated with the Harbors Oahu District Manager and the Construction Engineer and shall be subject to their written approval. The Contractor shall turn in a work schedule two (2) weeks prior to actual construction for approval by the Harbors Oahu District Manager and the Construction Engineer. The Contractor shall be responsible for maintaining the work and storage areas in neat and orderly condition.

Activities by tenants/users will take precedence over the Contractor's activities. The exact scheduling of the work and restrictions on the Contractor's activities will be established at the pre-construction meeting.

Phasing and careful coordination of the work will be required to allow continuous use of the project location and adjacent areas. The Contractor shall be responsible for coordination with the all tenants/users of the area and the Construction Engineer and Harbors District Operations Staff on a daily basis regarding scheduling of all work at no additional cost to the State.

The Contractor shall coordinate its work so as to minimize interference with tenant, pier and Aloha Tower operations. All work shall be scheduled to minimize interference with any operations in the project area. Weekend and night work may be required.

The exact scheduling and sequencing of the work and restrictions on the Contractor's operation while working at the project site will be established at the pre-construction meeting. The Contractor shall attend the pre-construction meeting to coordinate its work with others and shall complete all work within the work schedule.

10.5 LIABILITY AND RESPONSIBILITY - The Contractor shall provide, erect, and maintain warning signs, lights, barricades, fences, watchmen and/or other means as necessary to prevent unauthorized persons from wandering onto the job site where they may suffer injury or create a hazard to the construction operations or the work in progress. The Contractor shall also take all reasonable precautions for safety in its operations and to prevent injury to its employees and to others at the job site.

The Contractor shall be responsible for any and all damages to Aloha Tower and adjacent facilities caused by its operations and negligence. The Contractor shall, at its own expense, make prompt restitution for damages to the facilities caused by its operations or negligence. The Contractor shall hold the State harmless from all claims for loss or injury.

The Contractor shall remove defective work and replace the required work at no cost to the State.

The Contractor SHALL verify existing conditions in the field prior to ordering any materials. The existing conditions are based on the best available information. The Contractor shall make no claim for extra compensation should actual existing conditions differ from those shown on the plans.

Hawaii One Call. The Contractor shall comply with the Hawaii One Call law, HRS Section 269E-4. This includes, but is not limited to, coordination with the Hawaii One Call Center (HOCC) for any work involving excavation at least five (5) working days but not more than twenty-eight (28) calendar days prior to commencing excavation. The Contractor shall provide to HOCC a description of the excavation site that may include the county, place, address, and measurements as needed. HOCC contact information: telephone 811; website <http://www.digsafelyhawaii.com>.

10.6 BEST MANAGEMENT PRACTICES (BMPs) - The Contractor must follow standard best management practices (BMPs) for air pollution, water pollution, noise and solid waste control, as required by Federal, State and County regulations, to protect the environment from effects of construction activity, including prohibiting any construction debris or other deleterious materials to fall, flow or otherwise enter harbor waters.

The Contractor shall submit a site-specific BMP plan to the Construction Engineer for review and comment before work begins. The plan shall satisfy the requirements of ARTICLE XII - TEMPORARY WATER POLLUTION, DUST, AND EROSION CONTROL. This plan shall describe and detail the methods and procedures to be used to prevent air and water pollution, including preventing any materials, wastes, and debris from entering any adjacent storm drain system and harbor to the satisfaction of the Construction Engineer. The Contractor shall revise the BMP plan, at no additional cost to the State, should it be determined by the Construction Engineer that the plan is insufficient to prevent pollution

10.7 PERMITS - The Contractor will require permits for all welding and burning operations, if welding is contemplated. The Contractor shall obtain the required work permit from the Harbors Oahu District Manager.

A Building Permit from the City and County of Honolulu will not be required for this project.

10.8 SUBMITTALS - The Contractor shall submit for review one (1) copy of the following items in PDF format.

- A. Best Management Practices (BMP) Plan including removal of hazardous material in accordance with Article XII of these Technical Specifications.

- B. Health and Safety Plan
- C. Proof of valid TWIC and MARSEC credential card for all Contractor and Subcontractor workers.
- D. Pre-Construction Survey
- E. Demolition and Removal Plan and Schedule

10.9 STANDARD SPECIFICATIONS - The term "Standard Specifications" as used in these Technical Specifications, shall mean the Hawaii Standard Specifications for Road and Bridge Construction, State of Hawaii, Department of Transportation, Highways Division, 2005.

10.10 AS BUILT DRAWINGS - The Contractor shall keep one (1) set of drawings at the job site and make all field changes thereon. After completion of the project, a PDF/A format digital file marked up with all the field changes shall be submitted to the Construction Engineer.

10.11 HARBOR SECURITY - The Contractor shall submit required documentation of all Contractor and subcontractor's employees, their representatives, suppliers, manufacturers, and alike, and of all necessary vehicles needing access to the project site to the Construction Engineer and Oahu District Manager before starting work on the project. The documentation will include the following:

- A. Authorized personnel's first name, middle initial(s), and last name by company name.
- B. Vehicle(s) license plate number(s) by company name.
- C. The Contractor may be directed to use a specified entrance to enter and exit the harbor. Upon every entry, each employee must present and possess a photo identification (ID) card.
- D. All Contractor's and sub-contractor's employees, their representatives, suppliers, manufacturers, and authorized personnel needing access to the project site shall wear their photo ID card at all times.
- E. Contractor's vehicles must be identified with a company logo and will be subject to search. Any employee's personal belongings will also be subject to search.

- F. If the Contractor wishes to remove any fencing or open any locked gates, they shall coordinate with and request approval from the Construction Engineer and Oahu District Manager. If approval is granted, the Contractor shall then be responsible for securing open fencing or gate(s) immediately after entering or posting security personnel to monitor ingress and egress. Inspections of vehicles and equipment moving through the access points will be done in accordance with current MARSEC level and directives.
- G. If security personnel are required, the Contractor shall hire the same contract security that provides service to the State of Hawaii, Department of Transportation, Harbors. In the event that the security contract for Harbors changes, contractor must hire the new security contractor.
- H. By the end of each day, the Contractor shall re-erect and restore all fencing/barrier/perimeter security measures to the satisfaction of the Construction Engineer and the Oahu District Manager. Electricity and lighting shall also be restored and in satisfactory working order, to no less than pre-construction conditions, by the end of each day, to the satisfaction of the Construction Engineer and Oahu District Manager.
- I. Under no circumstances shall perimeter security be compromised. If determined by the State, and solely by the State, that the Contractor has left the project site in a condition that compromises security of the harbor, the State reserves the right to make the necessary arrangements to provide and enhance perimeter security, including restoration of electrical power and lighting, at the sole expense of the Contractor.
- J. At times, the maritime security level for the State of Hawaii and/or the general color-coded security level for State of Hawaii may be temporarily elevated. In these events, the Contractor may be prohibited to access the project site and may be required to stop work as directed by either the Construction Engineer or Oahu District Manager. The Department of Transportation, Harbors will consider impacts to the work and schedule as a result of prolonged work stoppages.
- K. Maritime Security Awareness training is mandatory for all personnel entering the Harbor facility. The Contractor shall be responsible to ensure all of its employees, representatives, subcontractors, vendors, and all alike, requiring access to the harbor area for this project, have been trained and possess the required maritime security card before entering the Harbor's property. Prior to starting work on this project, the Contractor shall provide a list of names (full legal name) and birth dates of all employees, representatives, subcontractors, vendors, and all alike, as well as their vehicles license number, year, make, color and model that will be entering the project site, together with a letter attesting that all personnel have

received this training to the Harbors Oahu District Manager and Construction Engineer. All employees, representatives, subcontractors, vendors, and all alike, shall wear their respective company's identification card bearing the company's name, the individual's first and last name, and middle initial(s), and a recent photograph of the individual on the front of the identification card at all times while on Harbor's property.

With the possible exception of Item J above, all other requirements indicated shall be considered incidental to the project and shall be provided by the contractor at no cost to the State.

The Contractor's personnel requiring unescorted access to secure areas of maritime facilities will be required to obtain a Transportation Worker Identification Credential (TWIC). No escorting of personnel is allowed. The project area has been deemed to be within a secured area. TWIC was established by Congress through the Maritime Transportation Security Act and is administered by the Transportation Security Administration (TSA) and U.S. Coast Guard. To obtain a TWIC, the applicant must provide biographic and biometric information such as fingerprints, sit for a digital photograph and successfully pass a security threat assessment conducted by TSA. The Contractor will be responsible to obtain and pay for all costs associated in providing their appropriate employees with TWIC. Information regarding TWIC is available on the TSA website at: <https://www.tsa.gov/for-industry/twic>.

10.12 COMPLETION TIME - All work for this project shall be completed within the specified time period as listed on page P-1 of the Proposal. The number of days shall commence on the issuance of the notice to proceed. The intent of the contract is to provide for the construction final acceptance of the work described by the contract documents at the accepted bid price and within the time established by the contract. The Contractor has the duty to furnish all labor, materials, equipment, tools, transportation, incidentals, and supplies and to determine the means, methods and schedules required to complete the work in accordance with the contract documents.

Unless otherwise directed by the Construction Engineer in writing, the Contractor shall not commence with physical construction without sufficient materials and equipment available at the project site for either continuous construction until completion, or completion of a specified portion of the work.

10.13 PAYMENT - Payment shall be made as specified below. Such payment shall include furnishing all labor, material, equipment and other expenses required to complete each item in accordance with the plans and specifications. The Best Management Practices (BMP) plan, including temporary water pollution, dust, and erosion measures, if required, shall be considered incidental to the pay items below.

Item 1 - Mobilization (Not to exceed 6% sum of all Items, excluding this Item). Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule. As

described in Article XI - MOBILIZATION, such payment shall include setting up and removing all plant equipment and materials at the job site; properly removing and salvaging all items as indicated by the Harbors; providing temporary barricades as required for Harbor operations during construction; cleaning up the job site and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 2 - Lead Paint Control Measures. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule. Such payment shall include the handling, treatment, encapsulation, removal, demolition, transportation, and/or disposal procedures of lead-containing paints, lead-based paints, and painted materials located at the project site in conjunction with the elevator repair; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 3 - Selective Demolition. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule. Such payment shall include demolition and removal of existing elevator equipment; elevator cab interior finishes; mechanical floor indicators; fire sprinkler piping; interior gypsum board partitions; wood door and frame; existing electrical outlets and lighting; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 4 - Mechanical Work. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule for Mechanical Work. Such payment shall include furnishing, delivery and installation of the window unit air conditioning system complete; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 5 - Fire Sprinkler System. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule for Fire Sprinkler System Work. Such payment shall include complete wet pipe automatic fire sprinkler and fire extinguisher cabinet for designated areas as shown on plans, as required by code and authority having jurisdiction; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 6 - Fire Alarm System. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule for Fire Alarm System. Such payment shall include providing and installing a complete, electrically supervised, closed circuit fire alarm system; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 7 - Electrical Work. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule for Electrical Work. Such payment shall include secondary electrical system wiring including overcurrent protection devices; raceways; branch circuiting and junction boxes; raceways for fire alarm system wiring; testing; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 8 - Modernize Electric Traction Elevator. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule. Such payment shall include furnishing and installing new elevator equipment; construction of new elevator equipment closet with new doors; painting; refurbishment of elevator cab interior; furnishing and installing new electric floor indicators; electro-static painting of existing elevator door jambs at each floor; allowance for new finishes; installing new louvers in existing hoistway; joint sealants; and all other incidental work required to complete this item as shown on the Plans and described in these Specifications.

Item 9 -One Year Maintenance Service Contract. Payment shall be made at the Contract Lump Sum Price bid in the Proposal Schedule. Such payment shall include furnishing full maintenance services for one (1) year plus the period from the final acceptance of the Modernize Electric Traction Elevator as described in these Specifications.

ARTICLE XI - MOBILIZATION

11.1 GENERAL

- A. Related Documents - The General Provision of the contract, including the General Provisions for Construction Projects (2016) and General Requirements of the Specifications, apply to the work specified in this Section.

- B. General Requirements - Section 699 of "Hawaii Standard Specifications for Road and Bridge Construction, 2005," are hereby incorporated into and made a part of these specifications by reference unless otherwise modified hereinafter.

- C. Mobilization - The Contractor shall mobilize and transport his construction plant and equipment including materials and supplies for operation to the site of work, construct temporary buildings and facilities as necessary, and assemble the equipment at the site as soon as possible after receipt of Notice to Proceed, subject to the provisions of the General Provisions.

- D. Demobilization - The Contractor shall demobilize and transport his construction plant and equipment including materials, supplies and temporary buildings off the site as soon as possible after construction is completed. Demobilization shall include all cleanup required under this contract and as directed by the Construction Engineer. Demobilization and final cleanup shall be completed prior to final acceptance.

- E. Performance Bond
 - 1. The Contractor shall file and pay for the performance and payment bonds according to Section 2.24 of the General Provisions, except that the value of the bonds shall equal one hundred percent (100%) of the amount of the contract basic bid amount plus one hundred percent (100%) of the amount of the extra work.

 - 2. Payment for the Contractor's bond premium will be made as part of mobilization in accordance to the terms stated in Section 11.4 below.

11.2 MATERIALS (Not Applicable)

11.3 EXECUTION (Not Applicable)

11.4 MEASUREMENT AND PAYMENT

A. Method of Measurement

1. Mobilization shall not be measured for payment. The maximum bid the sum of all items (excluding this item). If the proposal submitted by the bidder indicates an amount in excess of the allowable maximum, the indicated amount or amounts shall be reduced to the allowable maximum; the "Total Amount for Comparison of Bids," in the proposal schedule shall be adjusted to reflect any such reduction. For the purposes of comparing bids and determining the contract price to be inserted in the contract awarded to the bidder, if any is so awarded, the "Total Amount for Comparison of Bids" adjusted in accordance with the foregoing shall be used and the bidder's proposal shall be deemed to have been submitted for the amounts as reduced and adjusted in accordance herewith."
2. Demobilization will not be measured for payment.

B. Basis of Payment

1. Mobilization will be paid for at the contract lump sum price under Mobilization. Partial payment will be made as follows:
 - a. When 2 1/2 percent of the original contract amount is earned, 50 percent of the bid amount will be paid.
 - b. When 5 percent of the original contract amount is earned, 75 percent of the bid amount will be paid.
 - c. When 10 percent of the original contract amount is earned, 100 percent of the bid amount will be paid.
 - d. Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the contract.

- C. Payment for Mobilization shall be made as described in Article X of these Specifications.

ARTICLE XII - TEMPORARY WATER POLLUTION, DUST, AND EROSION
CONTROL

For Project **NOT** Subject to NPDES NOI-C Permit

12.1 DESCRIPTION - This section is required for all work, including the Contractor's storage sites. It describes the following:

- A. A detailed site-specific Best Management Practice (BMP) Plan including diagrams and narratives; constructing, maintaining, and repairing temporary water pollution, dust, and erosion control measures at the project site including local material sources, work areas and access roads; removing and disposing of wastes and hazardous wastes; and control of fugitive dust (defined as uncontrolled emission of solid airborne particulate matter from any source other than combustion). Additionally, all projects at Honolulu, Kalaeloa Barbers Point, and Kahului Harbors are subject to State of Hawaii, Department of Transportation (HDOT) Harbors, Storm Water Management Plan (SWMP) requirements, unless exempted, and are subject to Harbors Storm Water BMP inspections. If any requirement conflicts with those administered by State of Hawaii, Department of Health (HDOH), the Contractor shall follow the more stringent requirement.
- B. Compliance with applicable federal and other state permit conditions.
- C. Work associated with dewatering and hydrotesting activities and compliance with conditions of the NPDES general permit coverage authorizing discharges associated with construction activity dewatering and hydrotesting.

12.2 GENERAL REQUIREMENTS - In order to provide for the control of water pollution, dust, and erosion arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with all applicable federal, state, and local laws and regulations concerning water pollution control including, but not limited to, the following regulations:

- A. State of Hawaii, HDOH, Hawaii Administrative Rules (HAR) Chapter 11-54 - Water Quality Standards and Chapter 11-55 - Water Pollution Control.
- B. For projects at Honolulu, Kalaeloa Barbers Point, and Kahului Harbors ONLY, HDOT Harbors, Storm Water Management Plan.
- C. For projects at Honolulu, Kalaeloa Barbers Point, and Kahului Harbors ONLY, City and County of Honolulu (CCH), Rules Relating to Water Quality.

- D. For projects at Honolulu, Kalaeloa Barbers Point, and Kahului Harbors ONLY, CCH, Storm Water BMP Manual for Construction.
- E. 40 CFR Part 110, Environmental Protection Agency (EPA), Discharge of Oil.
- F. 40 CFR Part 117, EPA, Determination of Reportable Quantities for Hazardous Substances.
- G. 40 CFR Part 261, EPA, Identification and Listing of Hazardous Waste.
- H. 40 CFR Part 302, EPA, Designation, Reportable Quantities, and Notification.
- I. 49 CFR Part 171, U.S. Department of Transportation, Hazardous Materials Regulations.

12.3 MATERIALS - Materials shall conform to the following when applicable:

- A. Slope Drains. Slope drains may be constructed of pipe, fiber, mats, erosion control fabric, geotextiles, rubble, Portland cement concrete, bituminous concrete, plastic sheets, or other materials acceptable to the Construction Engineer.
- B. Grass. Grass shall be quick growing species such as rye grass, Italian grass, or cereal grasses. Grass shall be suitable to the area and provide a temporary cover that will not compete later with permanent cover. Alternative grasses are allowable if acceptable to the Construction Engineer.
- C. Fertilizer and Soil Conditions. Fertilizer and soil conditioners shall be a standard commercial grade acceptable to the Construction Engineer.
- D. Silt Fences. Silt fences shall be synthetic filter fabric mounted on posts and embedded in compacted ground in compliance with American Society for Testing and Materials (ASTM) D6462-03, Standard Practice for Silt Fence Installation.
- E. Berms. Berms shall be gravel or sand wrapped with geotextile material. Alternate materials are allowable if acceptable to the Construction Engineer.
- F. Alternate materials or methods to control, prevent, remove, and dispose of pollution are allowable if acceptable to the Construction Engineer.

12.4 CONSTRUCTION

A. Preconstruction Requirements.

1. Temporary Water Pollution, Dust, and Erosion Control Meeting.
The contractor shall be required to submit a site-specific BMP Plan to the Construction Engineer and address all comments by the Construction Engineer. After the Plan is accepted in writing by the Construction Engineer, the Contractor shall schedule a meeting with the Construction Engineer before the start of construction work to discuss the sequence of work, and plans and proposals for water pollution, dust, and erosion control.
2. Temporary Water Pollution, Dust, and Erosion Control Submittals.
The Contractor shall submit the site-specific BMP Plan to the Construction Engineer prior to the start of work for review of compliance with this Article. A site-specific BMP Plan template is available online at <https://hidot.hawaii.gov/harbors/malamaikeawakai/>, under **HDOT Harbors Construction and Post-Construction Programs - Documents and Forms.**
 - a. Written site-specific BMP Plan shall include the following as applicable:
 - 1) Identification of potential pollutants and their sources and other factors that may cause water pollution, dust, and erosion.
 - 2) A list of all material and heavy equipment to be used during construction. Vehicles and equipment shall be well maintained and free from any type of fluid leaks.
 - 3) Construction schedule.
 - 4) Name(s) of specific individual(s) designated responsible for water pollution, dust and erosion controls on the project site. Include home, business, and cellular telephone numbers, fax numbers, and e-mail addresses.
 - 5) Descriptions of the methods and devices used to eliminate certain pollutants (e.g., wastewater, fuels, solvents, detergents, toxic or hazardous substances) from discharging into state waters and drainage systems and provide details of BMP(s) to be installed or utilized. Indicate approximate dates when BMP(s) will be installed and removed.

- 6) Description of maintenance and subsequent removal of BMP(s).
- 7) Method(s) of removal and disposal of solid and regulated hazardous wastes encountered or generated during construction. The Contractor is advised to procure regulated hazardous materials on an as-needed basis, as feasible. All excess regulated hazardous materials at the conclusion of this project shall remain the property of the Contractor and shall be removed from HDOT Harbors property upon the completion of the project.
- 8) Method(s) of removing and disposing concrete and asphalt pavement cutting slurry, concrete curing water, and hydrodemolition water.
- 9) Method(s) of containing, removing and disposing of demolition dust and debris to minimize the discharge of these pollutants into state waters and drainage systems.
- 10) Spill kit contents and location.
- 11) Fugitive dust control, including dust from grinding, sweeping, or brooming off operations or combination thereof.
- 12) Method(s) of storing and handling of regulated hazardous materials (e.g., oils, paints) and other products used for the project. Safety Data Sheets (SDS) for all regulated hazardous materials used during construction activities shall be kept on-site throughout the duration of the project and readily available upon inspection. All containers of regulated hazardous materials should be provided with secondary containment during storage. Regulated hazardous materials not specifically needed in the execution of this project shall not be brought or stored on site. As feasible, the Contractor is encouraged to use products that do not contain any regulated constituents. The use of green products is encouraged.
- 13) Method(s) of concrete washout/waste control.
- 14) Method(s) of managing material stockpiles to minimize erosion and dust.

- 15) Good housekeeping practices.
 - a) Minimize tracking of sediment offsite from project entrances and exits.
 - b) Litter management. The Contractor shall have a comprehensive housekeeping policy and shall actively enforce housekeeping requirements. Housekeeping items include, but are not limited to, cups, cans, bottles and other forms of lightweight litter, unattended containers of hazardous materials, concrete debris (e.g., dust, chips, and other sweepings), and discarded articles of disposable Personal Protective Equipment (e.g., earplugs, dust masks, and gloves). Employees who are specifically tasked with housekeeping duties shall be identified by name.
 - c) The Contractor should provide and maintain covered waste receptacles. No construction debris or other refuse that is generated as a result of project activities is to be disposed in HDOT Harbors -owned waste receptacles.
- 16) Provide plan(s)/drawing(s) showing location of followings when applicable:
 - a) Boundaries of the property and the locations where construction activities will occur, including:
 - i) Locations where earth-disturbing activities will occur (noting any sequencing of construction activities);
 - ii) Approximate slopes and drainage patterns with flow arrows before and after the construction;
 - iii) Locations where sediment, soil, or other construction materials will be stockpiled;
 - iv) Locations of any contaminated soil or contaminated soil stockpiles;

- v) Locations of any crossings of state waters;
 - vi) Designated points on the site where vehicle will exit onto paved roads;
 - vii) Locations of structures and other impervious surfaces upon completion of construction; and
 - viii) Locations of construction support activity areas.
- b) Locations of all state waters, including wetlands and indicate which water bodies are listed as impaired.
 - c) The boundary lines of any natural buffers.
 - d) Topography of the site, existing vegetative cover, and features (e.g., forest, pasture, pavement, structures), and drainage pattern(s) of storm water onto, over, and from the site property before and after major grading activities.
 - e) Storm water discharge locations, including locations of any storm drain inlets on-site and in the immediate vicinity of the site to receive storm water runoff from the project; and locations where storm water will be discharging to state waters (including wetlands).
 - f) Locations of all potential pollutant-generating activities.
 - g) Locations of storm water control measures; and
 - h) Locations where chemicals will be used and stored.
- 17) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable

quantity established under either 40 CFR Parts 110, 117, or 302, occurs during a 24-hour period. Contact information must be in locations that are readily accessible and available.

- 18) The Contractor shall date and sign the site-specific BMP Plan.
- b. The Contractor shall keep the current Plan on-site or at easily accessible location throughout the duration of the project. Revisions to the Plan shall be included with the original plan. Modify contract documents to conform to revisions. Include actual date of installation and removal of BMP. Obtain written acceptance by the Construction Engineer before revising BMP. An updated Plan shall be kept on-site throughout the remainder duration of the project.

The Contractor shall follow guidelines in the "*The City and County of Honolulu Storm Water Best Management Practice Manual - Construction*," (dated November 2011) in developing, installing, and maintaining BMP for the project. Additionally, the Contractor shall follow applicable CCH *Rules Relating to Water Quality* **for all projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors**, and use respective Soil Erosion Guidelines for other Maui, Kauai and Hawaii County projects. Information can be found at the respective County websites.

B. Construction Requirements are as Follows.

1. No work shall be allowed to begin until submittals detailed in Subsection 3.4.A.2 - Temporary Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing by the Construction Engineer. The Contractor shall prevent pollutants from entering state waters. These efforts shall address areas such as those that drain to water, are over water, or drain to storm drains adjacent and in the area of the project site. The Contractor shall design, operate, implement, and maintain the Plan to ensure that storm water discharges associated with construction activities will not cause or contribute to a violation of applicable state water quality standards.
2. All projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors are subject to HDOT Harbors SWMP requirements for construction at those harbors unless the project meets a specified

exemption class. The requirements include, but are not limited to, construction site BMP initial, recurring (i.e., every two weeks from October through March and every two months otherwise), and final inspections at the frequencies outlined in the SWMP. No grading or land disturbance activities are allowed until the initial BMP inspection is completed and required BMPs are found to be properly installed.

3. Address all comments received from the Construction Engineer.
4. Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
5. Coordinate temporary control provisions with permanent control features throughout the construction and post-construction period.
6. BMP shall be in place and operational until the construction is completed and accepted by Harbors.
7. Install and maintain either or both stabilized construction entrances and wheel washes to minimize tracking of dirt and mud onto roadways. Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road immediately. Modify stabilized construction entrances to prevent mud from being tracked onto roadways.
8. Chemicals may be used as soil stabilizers for either or both erosion and dust control if acceptable to the Construction Engineer.
9. Cover exposed surface of materials completely with tarpaulin or similar device when transporting aggregate, soil, excavated material, or material that may be a source of fugitive dust.
10. Cleanup and remove any pollutant that can be attributed to the Contractor.
11. Install or modify BMP due to change in the Contractor's means and methods, or for omitted condition that should have been allowed for in the accepted site-specific BMP Plan or a BMP that replaces an accepted site-specific BMP that is not satisfactorily performing.
12. Properly maintain BMP.
13. Remove, replace, or relocate any BMP that must be removed, replaced or relocated due to potential or actual flooding, or potential danger or damage to the project or public.

14. The Contractor's designated representative specified in Subsection 3.4.A.2.a.4 shall address any BMP concerns brought up by the Construction Engineer within 24 hours of notification, including weekends and holidays. Should the Contractor fail to satisfactorily address these concerns, the Construction Engineer reserves the right to employ outside assistance or use the Construction Engineer's own labor forces to provide necessary corrective measures. The Construction Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Construction Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply BMP shall result in either or both the establishment and increase in the amount of retainage due to unsatisfactory progress or withholding of monthly progress payment. Continued failure to apply BMP may result in one or more of the following: The Contractor being fully responsible for all additional costs incurred by HDOT Harbors including any fines levied by HDOH, suspension of the Contract, or cancellation of the Contract.

C. Hydrotesting Activities. If work includes removing, relocation or installing waterlines, and the Contractor elects to flush waterline or discharge hydrotesting effluent into state waters or drainage systems, obtain a Notice of General Permit Coverage (NGPC) authorizing discharges associated with hydrotesting waters from the HDOH Clean Water Branch (CWB). If a permit is required, prepare and submit permit application (CWB-Notice of Intent (NOI) Form F) to the HDOH CWB.

Do not begin hydrotesting activities until the HDOH CWB has issued a NGPC. Hydrotesting operations shall be in accordance with conditions in the NGPC. Submit a copy of the NPDES Hydrotesting Waters Application and Permit to the Construction Engineer.

D. Dewatering Activities. If excavation of backfilling operations requires dewatering, and the Contractor elects to discharge dewatering effluent into state waters or existing drainage systems, obtain an NGPC authorizing discharges associated with construction activity dewatering from the HDOH CWB. If a permit is required, prepare and submit permit application (CWB-NOI Form G) to the HDOH CWB.

Do not begin dewatering activities until the HDOH-CWB has issued an NGPC. Conduct dewatering operations in accordance with the conditions in the NGPC. Submit a copy of the NPDES Dewatering Application and Permit to the Construction Engineer.

12.5 PAYMENT - Payment for Temporary Water Pollution, Dust, and Erosion Control shall not be measured and paid for separately but shall be considered incidental to the applicable items described in Article X of these Specifications.

No progress payment will be authorized until the Construction Engineer accepts in writing the site-specific BMP Plan or when the Contractor fails to maintain the project site in accordance with the accepted BMP Plan.

The Contractor shall reimburse the State of Hawaii within 30-day for the full amount of all outstanding costs incurred by the State of Hawaii for all citations or fines received as a result of the Contractor's non-compliance with regulations.

ARTICLE XIII - EXISTING CONDITIONS - ASBESTOS / LEAD /
HAZARDOUS MATERIAL SURVEY

13.1 SUMMARY

- A. This Article includes the results of the State's survey for Asbestos, Lead, and/or other Hazardous materials, and is provided for the Contractor's information.
- B. Related Articles include the following:
 - 1. ARTICLE XIV - LEAD PAINT CONTROL MEASURES for requirements of all work that disturbs lead-containing paint (LCP)/lead-based paint (LBP).
 - 2. ARTICLE XV - AIR MONITORING for requirements of work specified.

13.2 ASBESTOS

- A. The structures that may be disturbed during the elevator repair work under this contract were surveyed for the presence of asbestos-containing materials (ACM), using AHERA requirements. A copy of the survey report is included in this Article.
 - 1. The report is included for the Contractor's information. Review the attached report. Inaccessible and/or hidden suspect materials not sampled during previous field efforts and/or uncovered during the elevator repair work should be brought to the attention of the Contracting Officer, who will decide if the materials should be assumed ACM and managed as such or sampled to confirm otherwise. Such materials may include hidden and inaccessible materials in areas that would have required significant demolition to reach. Contractor may perform further surveys at its own expense, if ACM not shown in the reports is suspected in the buildings. If ACM is found, notify the Contracting Officer immediately. The State will reimburse the Contractor for the testing cost if ACM is found.
 - 2. If there is ACM outside of the areas in which work will be performed, this ACM shall not be disturbed in any way.
- B. If applicable, notify employees, Subcontractors and all other persons engaged on the project of the presence of asbestos in the existing buildings

in accordance with the requirements of State of Hawaii: Occupational Safety and Health Administration 29 CFR 1926.1101, Asbestos.

- C. In the event work is required in any location at the project site other than the ones designated within this project scope, request copies of the asbestos survey report(s) for such location(s) from the Construction Engineer assuming they are available. Based on the information contained in the additional survey(s), notify affected personnel per paragraph 1.02 B. If not available, Construction Engineer must decide to perform additional hazardous materials survey as soon as practicable.

13.3 LEAD-CONTAINING & LEAD-BASED PAINT

- A. Inform employees, Subcontractors, and all other persons engaged in the project that LCP/LBP is present at the project site. Conduct work in accordance with the requirements of OSHA 29 CFR 1926.62 Lead.

13.4 PRODUCTS (Not Used)

13.5 SURVEYS (Attached)

- A. Final Letter Report, Limited Hazardous Materials Survey, S10842 Repair Elevator, Aloha Tower, Honolulu Harbor, Oahu, Hawaii, 94 pages, dated January 2024, prepared by Element Environmental, LLC.

13.6 PAYMENT

Payment for disposal of hazardous wastes will not be made separately, but shall be considered incidental to the other contract items. Project final payment will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of hazardous materials delivered is returned and a copy is furnished to the State.

END OF ARTICLE

Final Letter Report

Limited Hazardous Materials Survey

S10842 Repair Elevator
Aloha Tower
Honolulu Harbor, Oahu, Hawaii



January 2024

PREPARED FOR:
State of Hawaii
Department of Transportation
Harbors Division
Oahu, Hawaii

UNDER SUBCONTRACT WITH:
ECS, Inc.
615 Piikoi Street, Suite 207
Honolulu, Hawaii 96814



element environmental llc
environmental · engineering · water resources

PREPARED BY:
Element Environmental, LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701



January 30, 2024

Ms. Michele Adolpho, P.E.
ECS, Inc.
615 Piikoi Street, Suite 207
Honolulu, Hawaii 96814

Subject: **Final Letter Report: Limited Hazardous Materials Survey**
State of Hawaii Department of Transportation, Harbors Division (HDOT-HAR)
S10842 Repair Elevator at Aloha Tower
Honolulu Harbor, Oahu, Hawaii

Dear Ms. Adolpho:

Element Environmental, LLC (E2) is pleased to submit this Final Limited Hazardous Materials Survey letter report describing the targeted activities completed to evaluate the presence/absence of select hazardous materials within the State of Hawaii Department of Transportation, Harbors Division (HDOT-HAR) Aloha Tower Repair Elevator Project S10842, located at Honolulu Harbor, Oahu, Hawaii (hereinafter referred to as *the project site*). The contents of this report are based on E2's accepted proposal dated December 15, 2023 and agreement with ECS. E2 conducted fieldwork on November 13-15, 2023. Site access was granted by HDOT-HAR through coordination with ECS.

The limited hazardous materials survey included sampling and testing of suspect asbestos-containing materials (ACM) and lead in painted building components that may be disturbed during the repairs. The survey was limited to samples that could be collected from only readily observable and safely accessible materials. Invasive inspections, such as opening up wall cavities or the destruction of materials to access hidden materials, were not performed. Inspectors did not enter confined spaces, or any areas deemed to present a risk to health and safety. Only construction materials incorporated into the structure of the building were surveyed.

Data tables, sample location figures, and positive sample photographs are provided in Appendices A, B, and C, respectively. Complete analytical laboratory reports are provided in Appendix D.

1.0 BACKGROUND

Demolition will include the following on the Ground Floor, the 2nd through 10th Floors, and the Clock Floor:

1. Retain and refurbish hoist way door frames.
2. Remove and dispose of hoist way door header, track, and its associated door hardware.
3. Remove and replace dial position indicators, hall stations, and main lobby position indicator.

Demolition will include the following on the 11th Floor:

1. Demolish the existing stud framed gypsum board elevator equipment closet and construct a new one.
2. Remove and dispose of existing Kone elevator control system, selector, direct motor drive systems, isolation transformer, and related wiring.
3. Remove and dispose of geared hoist machine, hoist motor, sheaves, governor, and its associated hardware
4. Remove and dispose of hoist and governor cables.
5. Retain and refurbish car and counterweight guide rails, rail brackets, backing plates, fishplates, clips, and associated hardware.
6. Remove and dispose of the buffer stand and buffer.
7. Remove and dispose of limit switches, hoist way switches, hoist way door interlocks, door rollers, door closers, and door panels.
8. Remove and dispose of car enclosure, car flooring, door operator, roller guides, exhaust fan, car door, car door rollers, and gibbs.
9. Retain and refurbish existing car sling, car platform, and safeties.
10. Retain and refurbish counterweight frame, retention rods, and counterweight. Remove and dispose of counterweight roller guide assemblies and rope accessories.
11. Remove car and counterweight buffer.
12. Remove elevator cab lights fusible disconnect switch and 3P100A elevator controller fusible disconnect switch.

2.0 PREVIOUS SURVEY REPORTS

E2 performed a review of available previous survey reports provided by the HDOT-HAR. A summary of pertinent findings is provided below.

- *Department of the Attorney General, Asbestos Litigation Unit, Asbestos Final Inspection Report and Management Plan, Department of Transportation, PSI/Hall-Kimbrell Project Number 642-19001* (June 14, 1993; 140 pages). The project site was surveyed on December 10, 1991. The following materials were found to be ACM. Samples were not collected from the 8th, 12th, 13th, and 14th Floors; ACM was not found in the 10th Floor samples; and laboratory reports were not included in the document. E2 did not encounter and/or sample any of these materials during the field effort. It is unknown if the ACM was removed or encapsulated; the report provides ACM quantities.
 - 12" gray vinyl floor tile, 12" beige vinyl floor tile, and mastic for brown floor base on the 1st Floor
 - 9" beige vinyl floor tile and mastic, and mastic for brown floor base on the 2nd Floor
 - 9" white vinyl floor tile, and 9" dark brown vinyl floor tile on the 3rd, 4th, and 5th Floors
 - 9" dark brown vinyl floor tile on the 6th Floor

- 12” white vinyl floor tile and mastic, and 12” red vinyl floor tile on the 7th Floor
 - 12” beige vinyl floor tile, and 9” dark brown vinyl floor tile on the 9th Floor
 - 12” beige vinyl floor tile and mastic, and mastic for 12” tan/brown vinyl floor tile on the 11th floor
- *Lead Paint Survey of Harbor Facilities, Final Submittal (Job H.D. 1984), State of Hawaii Department of Transportation, Harbors Division*, prepared by Earth Technology Corporation (surveyed from April 10 to May 3, 1996; 25 pages). Paint samples were not collected from the project site, because the HDOT-HAR identified Aloha Tower as newly constructed without lead paint.

3.0 ASBESTOS SURVEY

The limited asbestos survey was conducted in general accordance with U.S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) 763 Asbestos and Hawaii Department of Health (HDOH), Hawaii Administrative Rules (HAR) 11-501 Asbestos Requirements. The asbestos survey consisted of the collection of bulk samples from observed accessible suspect building components that may be disturbed during the repairs. Homogeneous Areas (HAs), which are suspect ACM that appear uniform in color, texture, and function, were identified. The asbestos inspectors (Erica Adamczyk [HIASB-5331], Garrett Ito [HIASB-5159], Austin Lutey [HIASB-3199], and Jonathan Valencia [HIASB-5339]) are certified in accordance with the inspector training requirements of the Asbestos Hazard Emergency Response Act (AHERA) and the HDOH Asbestos Inspector Certification Program HAR 11-504. E2 is a HDOH-registered asbestos entity (#A-0120).

SGS Forensic Laboratories (SGS) located in Carson, California, who analyzed the bulk samples, is registered with the HDOH, Indoor and Radiological Health Branch, Asbestos Section (#L-06-002). SGS is accredited by the American Industrial Hygiene Association (AIHA, #101629) under the Industrial Hygiene Laboratory Accreditation Program (IHLAP) for asbestos/fiber microscopy core, and the National Voluntary Laboratory Accreditation Program (NVLAP, #101459-1) for bulk asbestos fiber analysis. Samples were analyzed by polarized light microscopy (PLM) with dispersion staining, in accordance with EPA Method 600/R-93/116, Visual Area Estimation, for standard building materials.

Results were compared to the standard presence/absence criteria for asbestos, i.e., materials containing over 1% asbestos are considered ACM. No asbestos was detected in the samples collected from the following HAs, specific to the floor the material was sampled from (refer to Appendix A for details).

- Ceiling Tiles/Mastics
- Gypsum Ceiling and Wallboard/Joint Compound
- Ceiling and Wall Skim Coats
- Concrete Ceilings, Floors, and Walls
- Vinyl Floor Tiles/Mastics
- Ceramic Floor and Wall Tiles
- Non-skid Floor Surfacing and Leveling Compound
- Vinyl Bases/Mastics
- Plaster Walls
- Textured Wall Surfacing
- Concrete Masonry Unit (CMU) Block Wall/Grout
- Wallpaper/Adhesive

- Blown-in Ceiling Insulation/Fireproofing
- Pipe Gaskets
- Window Caulking (black)

Table 1 presents a summary of confirmed asbestos and trace results in the remaining three HAs, along with an assumed HA that was inaccessible. The complete analytical laboratory reports also indicate percent of other fibrous components, if any.

Table 1: Confirmed, Assumed, and Trace Asbestos Bulk Sample Results Summary

Sample or HA ID	Sample/HA Locations	Material Description	Approximate Quantity	Condition	Total % Asbestos (laboratory description)
AT-02-M-01	Fire Pump Room, 2 nd Floor	Ceiling Tile (2'X4' white pegboard)	unknown	Damaged	Assumed (inaccessible)
AT-CF-M-01	Clock Room	Vinyl Base/Mastic (4" brown/brown)	n/a	Significantly Damaged	0.09% - <1% Anthophyllite in the Brown Mastic layer
AT-11-M-01	Elevator Machine Room	Window Caulking (grey, white, and beige)	n/a (will not be disturbed)	Damaged	2-3% Chrysotile in the Black Tar & Beige Semi-Fibrous Material layers
AT-11-M-03	Elevator Machine Room	Window Caulking (white and grey, brittle and hard)	n/a (will not be disturbed)	Damaged	2-3% Chrysotile in the Black Tar & Beige Semi-Fibrous Material layers

AT = Aloha Tower, M = miscellaneous
 Dimensions are approximate and should be confirmed by the Contractor.
 ACM = asbestos content greater than 1%

Inaccessible and/or hidden suspect materials not sampled during this field effort, or uncovered during the repairs, should be assumed ACM and managed as such until sampled and proven otherwise. ACM that will be encountered and/or generated during future repairs at the project site will require proper handling, removal, and/or disposal by trained workers in accordance with the Occupational Safety and Health Administration (OSHA) Asbestos Standard 29 CFR 1926.1101, Hawaii Occupational Safety and Health (HIOSH) rules and regulations, EPA National Emission Standard for Asbestos 40 CFR 61 Subpart M, and 40 CFR 763 Asbestos. At least ten (10) working days before demolition or disturbance of friable asbestos above reportable quantities, a "Notification of Demolition and Renovation" must be sent to the HDOH. The proposed landfill should be consulted as to their requirements and procedures for the disposal of ACM at their facility.

4.0 LEAD PAINT SURVEY

The limited paint survey was conducted in general accordance with U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint (LBP) Hazards in Housing and HAR Chapter 11-41. Paint chip samples (generally in intact condition) were collected from various painted building components that may be disturbed during the repairs. The paint inspectors (Erica Adamczyk [PB-1359], Garrett Ito [PB-1272], Austin Lutey [PB-0440], and Jonathan Valencia [PB-1381]) are certified in accordance with the HDOH Lead Activities Inspector Certification Program. E2 is a HDOH-registered LBP activities entity (#PBF-0032).

SGS Carson, California, who analyzed the paint chip samples, is accredited by the AIHA under the Environmental Laboratory Accreditation Program (ELAP, #1366). Samples were analyzed for total lead by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), in accordance with EPA Methods 3050B/7000B.

Results were compared to standard presence/absence criteria for lead, i.e., paint containing 0.5% or more by weight or 5,000 milligrams per kilogram (mg/kg) or more of total lead were considered LBP. Paint with any detectable amount of lead is considered lead-containing paint (LCP). Both LBP and LCP are worker protection issues. For comparison, the U.S. Consumer Product Safety Improvement Act, 16 CFR 1303.101 allows no more than 90 ppm of total lead content in accessible parts of children’s products. Eight (8) paint samples contained detectable concentrations of lead ranging from 5,600 to 36,000 ppm and are considered LBP (Table 2). Fifteen (15) paint samples contained detectable concentrations of lead ranging from 33 to 4,200 ppm and are considered LCP. The remaining 14 paint samples did not have detectable (ND) levels of lead above the respective laboratory reporting limits. (Note that there may be background concentrations of lead in the concrete/plaster and metal components.)

Table 2: Confirmed Lead-Based Paint Sample Result Summary

Sample ID	Material Location	Condition	Material Description	Total Lead (ppm)
AT-02-P01	Fire Pump Room	Poor	Beige Plaster Wall	36,000
AT-03-P01	Vestibule	Intact	White Concrete Wall	5,600
AT-03-P02	Corridor	Intact	Gray Concrete Wall	19,000
AT-04-P01	Stair Room	Intact	Green Concrete Wall	12,000
AT-06-P02	Stair Room	Intact	Gray Concrete Wall	8,600
AT-07-P01	Stair Room	Intact	Gray Concrete Wall	8,400
AT-10-P01	Storage Room	Poor	Peach Plaster Wall	18,000
AT-11-P02	Elevator Machine Room	Intact	Yellow Metal Pipe	36,000

AT = Aloha Tower, P = paint

ppm = parts per million

LBP = lead content > or = 0.5% or 5,000 mg/kg, ppm

Lead painted debris that will be generated at the project site will require proper handling, removal, and/or disposal in accordance with OSHA Lead in Construction Standard 29 CFR 1926.62 and HIOSH rules and regulations. Appropriate worker protection measures for lead should be taken during the repairs to limit lead exposure of personnel and releases to the environment.

Metal debris (with intact paint) should be recycled when possible to decrease the amount of waste taken to the landfill and to possibly minimize the likelihood of the Toxicity Characteristic Leaching Procedure (TCLP) samples exceeding leaching criteria, 40 CFR 261 Identification and Listing of Hazardous Waste. A representative TCLP sample(s) of the remaining waste stream(s) will need to be collected and analyzed prior to landfill acceptance. The landfill should be consulted as to their requirements and procedures for the disposal of lead-contaminated waste and debris at their facility.

5.0 CANEC SURVEY

Canec is the common name for a fiberboard building material that was made from sugar cane bagasse, the residual fiber that remains after the juice has been extracted from the sugar cane. Canec contains arsenic in the range of 1,000 to 4,000 mg/kg. A bulk sample of the suspect canec ceiling tiles in the 8th

Floor Office (HA AT-08-C-02) was analyzed for total arsenic. The sample did not contain a detectable level of arsenic above the laboratory reporting limit of 4 ppm.

Inaccessible and/or hidden suspect materials not sampled during this field effort should be presumed arsenic-containing until sampled and proven otherwise, if built between the early 1930s to 1964. Prior to demolition, arsenic-containing canec should be removed whole, segregated, wrapped in plastic or placed in plastic bags during transportation, and disposed of similarly to asbestos at a permitted landfill facility. Canec building materials are exempt from State laws requiring a hazardous waste determination to be made prior to disposal. As a result of this exemption, testing canec for arsenic content or leaching characteristics is not required by the State for disposal. The exemption applies whenever canec building materials are segregated from other building materials and disposed of separately. When canec is mixed with other building demolition waste, the combined waste could be subject to hazardous waste determination before disposal. The permitted landfill should be notified prior to disposal of canec materials so the canec can be appropriately segregated or handled in a manner to prevent landfill employees from being exposed during their operations.

We appreciate the opportunity to have worked with you on this project. Should you have any questions or require additional information related to this project, please do not hesitate to call me at (808) 864-3952.

Sincerely,



Ryan Yamauchi, P.E.

President

Hawaii Asbestos Inspector HIASB-2905

Hawaii LBP Inspector and Risk Assessor PB-0117

Attachments:

Appendix A Tables

Appendix B Figures

Appendix C Photographs

Appendix D Laboratory Reports

APPENDIX A
Tables

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %		
Ground Floor										
AT-GF-C-01	Miscellaneous	Gypsum Ceiling Board/Joint Compound	Non-friable	Intact	AT-GF-C-01A	Stairwell	1 White Drywall (83%)	ND		
							2 White Plaster (15%)	ND		
							3 Paint (2%)	ND		
					AT-GF-C-01B		1 White Drywall (83%)	ND		
							2 Off-White Plaster (15%)	ND		
							3 Paint (2%)	ND		
					AT-GF-C-01C		1 White Drywall (83%)	ND		
							2 Off-White Plaster (15%)	ND		
							3 Paint (2%)	ND		
AT-GF-C-02	Miscellaneous	Concrete Ceiling, inaccessible (refer to AT-02-F-02)	Non-friable	Damaged	n/a	(refer to AT-02-F-02)	(refer to AT-02-F-02)			
AT-GF-W-01	Miscellaneous	Concrete Walls	Non-friable	Damaged	AT-GF-W-01A	Exterior	1 Grey Cementitious Material (95%)	ND		
					AT-GF-W-01B	Main Electrical Room	1 Grey Cementitious Material (95%)	ND		
					AT-GF-W-01C	Fire Pump Room	2 Paint (5%)	ND		
AT-GF-W-02	Surfacing	Plaster Walls	Non-friable	Damaged	AT-GF-W-02A	Hall	1 Grey Plaster (10%)	ND		
							2 Off-White Plaster (88%)	ND		
							3 Paint (2%)	ND		
					AT-GF-W-02B		1 Grey Plaster (33%)	ND		
							2 Off-White Plaster (65%)	ND		
							3 Paint (2%)	ND		
AT-GF-W-02C	1 Off-White Plaster (100%)	ND								
	AT-GF-W-03A	Textured Wall Surfacing (beige, coarse)	Non-friable	Damaged	Exterior	1 Grey Texture with Stones (20%)	ND			
						2 White Texture with Stones (75%)	ND			
3 Paint (5%)						ND				
AT-GF-W-03B	1 Grey Texture with Stones (10%)					ND				
	2 Paint (Trace%)					ND				
	3 White Texture with Stones (85%)					ND				
AT-GF-W-03C	4 Paint (5%)	ND								
	1 Grey Texture with Stones (5%)	ND								
	2 White Texture with Stones (90%)	ND								
AT-GF-W-04	Miscellaneous	CMU Block Wall/Grout	Non-friable	Intact	AT-GF-W-04A	Main Electrical Room	1 Grey Cementitious Material (80%)	ND		
							2 Grey Grout (20%)	ND		
					AT-GF-W-04B		Fire Pump Room	1 Grey Cementitious Material (80%)	ND	
								2 Grey Grout (20%)	ND	
					AT-GF-W-04C			Main Electrical Room	1 Grey Cementitious Material (80%)	ND
									2 Grey Grout (20%)	ND
AT-GF-M-01	Miscellaneous	Pipe Gasket (black and grey)	Non-friable	Intact	Fire Pump Room	AT-GF-M-01A			1 Beige Non-Fibrous Material with Debris (100%)	ND
						AT-GF-M-01B			1 Beige Non-Fibrous Material with Debris (100%)	ND
						AT-GF-M-01C	1 Grey Non-Fibrous Material with Debris (100%)		ND	

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %					
2nd Floor													
AT-02-C-01	Miscellaneous	Gypsum Ceiling Board/Joint Compound	Non-friable	Intact	AT-02-C-01A	Mezzanine	1 White Drywall (83%)	ND					
							2 White Joint Compound (15%)	ND					
							3 Paint (2%)	ND					
					AT-02-C-01B		1 White Drywall (83%)	ND					
							2 Off-White Plaster (15%)	ND					
							3 Paint (2%)	ND					
					AT-02-C-01C		1 White Drywall (63%)	ND					
							2 Grey Plaster (20%)	ND					
							3 Off-White Plaster (15%)	ND					
AT-02-F-01	Miscellaneous	Vinyl Floor Tile/Mastic (12" light and dark teal, checkerboard pattern/yellow)	Non-friable	Intact	AT-02-F-01A	Mezzanine	1 Blue Tile (98%)	ND					
						2 Black Mastic with Debris (2%)	ND						
					AT-02-F-01B	Stairwell	1 Blue Tile (100%)	ND					
						AT-02-F-01C	Mezzanine	1 Blue Tile (98%)	ND				
					2 Tan Mastic (2%)		ND						
					AT-02-F-02	Miscellaneous	Concrete Floor	Non-friable	Damaged	AT-02-F-02A	Fire Pump Room	1 Grey Cementitious Material (100%)	ND
										AT-02-F-02B	Fire Pump Room	1 Grey Cementitious Material (40%)	ND
												2 Beige Cementitious Material (60%)	ND
					AT-02-F-02C	1 Grey Cementitious Material (100%)	ND						
AT-02-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Damaged	AT-02-W-01A	Fire Pump Room	1 White Drywall (100%)	ND					
					AT-02-W-01B	1 White Drywall (100%)	ND						
					AT-02-W-01C	1 White Drywall (100%)	ND						
AT-02-W-02	Miscellaneous	Concrete Walls	Non-friable	Damaged	AT-02-W-02A	Fire Pump Room	1 Grey Cementitious Material (100%)	ND					
					AT-02-W-02B	1 Grey Cementitious Material (100%)	ND						
					AT-02-W-02C	1 Grey Cementitious Material (100%)	ND						
AT-02-W-03	Surfacing	Skim Coat (white) over Concrete Walls	Non-friable	Damaged	AT-02-W-03A	Fire Pump Room	1 White Non-Fibrous Material (100%)	ND					
					AT-02-W-03B	1 White Non-Fibrous Material (98%)	ND						
						2 Paint (2%)	ND						
AT-02-W-03C	1 White Non-Fibrous Material (98%)	ND											
AT-02-W-04	Miscellaneous	CMU Block Wall/Grout	Non-friable	Intact	AT-02-W-04A	Fire Pump Room	1 Grey Grout (100%)	ND					
					AT-02-W-04B	1 Grey Grout (100%)	ND						
					AT-02-W-04C	1 Grey Grout (100%)	ND						
AT-02-M-01	Miscellaneous	Ceiling Tile Mastic only (brown) on Ceiling Tile, inaccessible (2'X4' white pegboard)	Non-friable	Damaged	AT-02-M-01A	Fire Pump Room	1 Brown Mastic (100%)	ND					
					AT-02-M-01B	1 Brown Mastic (100%)	ND						
					AT-02-M-01C	1 Brown Mastic (100%)	ND						

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %					
3rd Floor													
AT-03-C-01	Miscellaneous	Concrete Ceiling	Non-friable	Intact	AT-03-C-01A	Office	1 Grey Cementitious Material (100%)	ND					
							2 Paint (Trace%)	ND					
					AT-03-C-01B		1 Grey Cementitious Material (100%)	ND					
					AT-03-C-01C		2 Paint (Trace%)	ND					
							1 Grey Cementitious Material (100%)	ND					
AT-03-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-03-W-01A	Equipment Room	1 White Drywall (80%)	ND					
							2 White Woven Material (3%)	ND					
							3 White Joint Compound (15%)	ND					
										AT-03-W-01B	4 Paint (2%)	ND	
											1 White Drywall (80%)	ND	
											2 White Woven Material (3%)	ND	
											3 White Joint Compound (15%)	ND	
										AT-03-W-01C	4 Paint (2%)	ND	
											1 White Drywall (80%)	ND	
						2 White Woven Material (3%)	ND						
						3 White Joint Compound (15%)	ND						
						4 Paint (2%)	ND						
AT-03-W-02	Surfacing	Wall Skim Coat, over Concrete Ceilings/Walls	Non-friable	Damaged	AT-03-W-02A	Office	1 White Non-Fibrous Material (95%)	ND					
							2 Paint (5%)	ND					
							AT-03-W-02B	1 White Non-Fibrous Material (93%)	ND				
											2 Paint (5%)	ND	
											3 Beige Fibrous Material (2%)	ND	
											AT-03-W-02C	1 White Non-Fibrous Material (93%)	ND
						2 Paint (5%)	ND						
						3 Beige Fibrous Material (2%)	ND						
AT-03-W-03	Surfacing	Textured Wall Surfacing (beige, coarse)	Non-friable	Intact	AT-03-W-03A	Lanai	1 Beige Cementitious Material (35%)	ND					
							2 Paint (65%)	ND					
											AT-03-W-03B	1 Grey Cementitious Material (60%)	ND
												2 Beige Cementitious Material (35%)	ND
												3 Paint (5%)	ND
											AT-03-W-03C	1 Grey Cementitious Material (40%)	ND
						2 Beige Cementitious Material (55%)	ND						
						3 Paint (5%)	ND						
AT-03-W-04	Miscellaneous	Concrete Walls	Non-friable	Intact	AT-03-W-04A	Storage 1	1 Grey Cementitious Material (100%)	ND					
					AT-03-W-04B	Storage 3	1 Grey Cementitious Material (100%)	ND					
					AT-03-W-04C	Storage 3	1 Grey Cementitious Material (100%)	ND					
AT-03-T-01	Surfacing	Blown-in Ceiling Insulation/Fireproofing	Friable	Intact	AT-03-T-01A	Office	1 Tan Fibrous Material (100%)	ND					
					AT-03-T-01B		1 Tan Fibrous Material (100%)	ND					
					AT-03-T-01C		1 Tan Fibrous Material (100%)	ND					
AT-03-M-01	Miscellaneous	Vinyl Base/Mastic (4" green/yellow)	Non-friable	Intact	AT-03-M-01A	Equipment Room	1 Green Non-Fibrous Material (100%)	ND					
											1 Green Non-Fibrous Material (98%)	ND	
					AT-03-M-01B		2 Tan Mastic (2%)	ND					
											1 Green Non-Fibrous Material (98%)	ND	
					AT-03-M-01C	2 Tan Mastic (2%)	ND						

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
4th Floor								
AT-04-F-01	Miscellaneous	Vinyl Floor Tile/Mastic (12" white/yellow) over Leveling Compound	Non-friable	Intact	AT-04-F-01A	Store Room	1 White Tile (93%)	ND
							2 Tan Mastic (2%)	ND
							3 White Non-Fibrous Material (5%)	ND
					AT-04-F-01B		1 White Tile (73%)	ND
							2 Tan Mastic (2%)	ND
							3 White Non-Fibrous Material (25%)	ND
					AT-04-F-01C		1 White Tile (73%)	ND
							2 Tan Mastic (2%)	ND
							3 White Non-Fibrous Material (25%)	ND
AT-04-F-02	Miscellaneous	Concrete Floor	Non-friable	Intact	AT-04-F-02A	Stairwell	1 Grey Cementitious Material (95%)	ND
							2 Paint (5%)	ND
							1 Grey Cementitious Material (95%)	ND
					AT-04-F-02B		2 Paint (5%)	ND
							1 Grey Cementitious Material (95%)	ND
					AT-04-F-02C		2 Paint (5%)	ND
							1 Grey Cementitious Material (95%)	ND
AT-04-W-01	Surfacing	Skim Coat (white) over Concrete Walls	Non-friable	Intact	AT-04-W-01A	Office	1 Grey Cementitious Material (34%)	ND
							2 White Non-Fibrous Material (65%)	ND
							3 Paint (1%)	ND
					AT-04-W-01B		1 Grey Cementitious Material (34%)	ND
							2 White Non-Fibrous Material (65%)	ND
							3 Paint (1%)	ND
					AT-04-W-01C		1 Grey Cementitious Material (34%)	ND
							2 White Non-Fibrous Material (65%)	ND
							3 Paint (1%)	ND
AT-04-W-02	Miscellaneous	Wallpaper/Adhesive (brown stranded fabric/brown)	Non-friable	Intact	AT-04-W-02A	Office	1 Beige Non-Fibrous Material (40%)	ND
							2 Tan Fibrous Material with Adhesive (55%)	ND
							3 Paint (5%)	ND
					AT-04-W-02B		1 Beige Non-Fibrous Material (40%)	ND
							2 Tan Fibrous Material with Adhesive (55%)	ND
							3 Paint (5%)	ND
					AT-04-W-02C		1 Beige Non-Fibrous Material (40%)	ND
							2 Tan Fibrous Material with Adhesive (55%)	ND
							3 Paint (5%)	ND
AT-04-W-03	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-04-W-03A	Store Room	1 White Drywall (83%)	ND
							2 White Joint Compound (15%)	ND
							3 Paint (2%)	ND
					AT-04-W-03B		1 White Drywall (83%)	ND
							2 White Joint Compound (15%)	ND
							3 Paint (2%)	ND
					AT-04-W-03C		1 White Drywall (83%)	ND
							2 White Joint Compound (15%)	ND
							3 Paint (2%)	ND
AT-04-M-01	Miscellaneous	Vinyl Base/Mastic (4" green/yellow)	Non-friable	Intact	AT-04-M-01A	Store Room	1 Green Non-Fibrous Material (98%)	ND
							2 Tan Mastic (2%)	ND
							3 Paint with Debris (Trace%)	ND
					AT-04-M-01B		1 Green Non-Fibrous Material (98%)	ND
							2 Tan Mastic (2%)	ND
							3 Paint with Debris (Trace%)	ND
					AT-04-M-01C		1 Green Non-Fibrous Material (96%)	ND
							2 Tan Mastic (2%)	ND
							3 Paint with Debris (Trace%)	ND
							4 Tan Fibrous Material (2%)	ND

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
5th Floor								
AT-05-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-05-W-01A	Office	1 White Drywall (81%)	ND
							2 White Woven Material (2%)	ND
							3 White Joint Compound (15%)	ND
					AT-05-W-01B	Electric Room	4 Paint (2%)	ND
							1 White Drywall (81%)	ND
							2 White Woven Material (2%)	ND
					AT-05-W-01C	Office	3 White Joint Compound (15%)	ND
							4 Paint (2%)	ND
							1 White Drywall (81%)	ND
AT-05-W-02	Surfacing	Plaster Walls	Non-friable	Intact	AT-05-W-02A	Office	2 White Woven Material (2%)	ND
							3 White Joint Compound (15%)	ND
							4 Paint (2%)	ND
					AT-05-W-02B	Office	1 Beige Plaster (85%)	ND
							2 White Plaster (13%)	ND
							3 Paint (2%)	ND
					AT-05-W-02C	Office	1 Beige Plaster (85%)	ND
							2 White Plaster (13%)	ND
							3 Paint (2%)	ND
AT-05-M-01	Miscellaneous	Vinyl Base/Mastic (4" green/yellow)	Non-friable	Intact	AT-05-M-01A	Equipment Room	1 Green Non-Fibrous Material (98%)	ND
							2 Tan Mastic (2%)	ND
							1 Green Non-Fibrous Material (98%)	ND
					AT-05-M-01B	Equipment Room	2 Tan Mastic (2%)	ND
							1 Green Non-Fibrous Material (96%)	ND
							2 Tan Mastic (2%)	ND
					AT-05-M-01C	Equipment Room	3 Paint (Trace%)	ND
							4 Off-White Texture (2%)	ND

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %	
6th Floor									
AT-06-C-01	Surfacing	Skim Coat (white) over Concrete Ceiling	Non-friable	Damaged	AT-06-C-01A	Office	1 Grey Cementitious Material (55%)	ND	
					AT-06-C-01B		2 White Non-Fibrous Material (45%)	ND	
					AT-06-C-01C		1 Grey Cementitious Material (25%)	ND	
							2 White Non-Fibrous Material (75%)	ND	
							1 Grey Cementitious Material (25%)	ND	
							2 White Non-Fibrous Material (75%)	ND	
AT-06-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-06-W-01A	Equipment Room	1 White Drywall (80%)	ND	
							2 White Woven Material (3%)	ND	
							3 White Joint Compound (15%)	ND	
							4 Paint (2%)	ND	
					AT-06-W-01B			1 White Drywall (80%)	ND
							2 White Woven Material (3%)	ND	
							3 White Joint Compound (15%)	ND	
							4 Paint (2%)	ND	
					AT-06-W-01C			1 White Drywall (80%)	ND
	2 White Woven Material (3%)	ND							
	3 White Joint Compound (15%)	ND							
		4 Paint (2%)	ND						
AT-06-W-02	Surfacing	Skim Coat (white) over Concrete Walls	Non-friable	Damaged	AT-06-W-02A	Restroom	1 Grey Cementitious Material (70%)	ND	
							2 White Non-Fibrous Material (30%)	ND	
					AT-06-W-02B			1 Grey Cementitious Material (70%)	ND
							2 White Non-Fibrous Material (30%)	ND	
							3 Paint (Trace%)	ND	
					AT-06-W-02C			1 Grey Cementitious Material (35%)	ND
	2 White Non-Fibrous Material (65%)	ND							
		3 Paint (Trace%)	ND						
AT-06-M-01	Miscellaneous	Vinyl Base/Mastic (4" green/yellow)	Non-friable	Intact	AT-06-M-01A	Equipment Room	1 Green Non-Fibrous Material (98%)	ND	
							2 Tan Mastic (2%)	ND	
							3 Paint (Trace%)	ND	
							4 Off-White Texture (Trace%)	ND	
					AT-06-M-01B			1 Green Non-Fibrous Material (98%)	ND
							2 Tan Mastic (2%)	ND	
							3 Paint (Trace%)	ND	
							4 Tan Fibrous Material (Trace%)	ND	
					AT-06-M-01C			1 Green Non-Fibrous Material (98%)	ND
							2 Tan Mastic (2%)	ND	
							3 Paint (Trace%)	ND	
							4 Off-White Texture (Trace%)	ND	

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %	
7th Floor									
AT-07-C-01	Surfacing	Skim Coat (white) over Concrete Ceiling	Non-friable	Damaged	AT-07-C-01A	Office	1 Grey Cementitious Material (78%)	ND	
							2 White Non-Fibrous Material (20%)	ND	
							3 Paint (2%)	ND	
					AT-07-C-01B		1 Grey Cementitious Material (78%)	ND	
							2 White Non-Fibrous Material (20%)	ND	
							3 Paint (2%)	ND	
					AT-07-C-01C		1 Grey Cementitious Material (78%)	ND	
							2 White Non-Fibrous Material (20%)	ND	
							3 Paint (2%)	ND	
AT-07-C-02	Miscellaneous	Ceiling Tile/Mastic (1'X1' white, medium shallow fissures/brown)	Friable	Damaged	AT-07-C-02A	Office	1 Brown Mastic (7%)	ND	
							2 Beige Fibrous Material (91%)	ND	
							3 Paint (2%)	ND	
					AT-07-C-02B		1 Brown Mastic (33%)	ND	
							2 Beige Fibrous Material (65%)	ND	
							3 Paint (2%)	ND	
					AT-07-C-02C		1 Grey Cementitious Material (Trace%)	ND	
							2 White Non-Fibrous Material (2%)	ND	
							3 Brown Mastic (31%)	ND	
AT-07-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-07-W-01A	Office	1 White Drywall (80%)	ND	
							2 White Woven Material (3%)	ND	
							3 White Joint Compound (15%)	ND	
					AT-07-W-01B		Store Room	4 Paint (2%)	ND
								1 White Drywall (80%)	ND
								2 White Woven Material (3%)	ND
					AT-07-W-01C			3 White Joint Compound (15%)	ND
								4 Paint (2%)	ND
								1 White Drywall (80%)	ND
AT-07-W-02	Surfacing	Skim Coat (white) over Concrete Walls	Non-friable	Damaged	AT-07-W-02A	Office		2 White Woven Material (3%)	ND
								3 White Joint Compound (15%)	ND
								4 Paint (2%)	ND
					AT-07-W-02B		1 Grey Cementitious Material (35%)	ND	
							2 White Non-Fibrous Material (63%)	ND	
							3 Paint (2%)	ND	
					AT-07-W-02C		1 Grey Cementitious Material (15%)	ND	
							2 White Non-Fibrous Material (83%)	ND	
							3 Paint (2%)	ND	
AT-07-M-01	Miscellaneous	Vinyl Base/Mastic (4" green/yellow)	Non-friable	Intact	AT-07-M-01A	Store Room	1 Green Non-Fibrous Material (94%)	ND	
							2 Tan Mastic (2%)	ND	
							3 Paint (2%)	ND	
					AT-07-M-01B		4 Tan Fibrous Material (2%)	ND	
							1 Green Non-Fibrous Material (94%)	ND	
							2 Tan Mastic (2%)	ND	
					AT-07-M-01C		3 Paint (2%)	ND	
							4 Tan Fibrous Material (2%)	ND	
							1 Green Non-Fibrous Material (98%)	ND	
							2 Tan Mastic (2%)	ND	

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %						
8th Floor														
AT-08-C-01	Surfacing	Skim Coat (white) over Concrete Ceiling	Non-friable	Intact	AT-08-C-01A	Restroom	1 Grey Cementitious Material (25%)	ND						
							2 White Non-Fibrous Material (70%)	ND						
							3 Paint (5%)	ND						
					AT-08-C-01B		1 Grey Cementitious Material (80%)	ND						
							2 White Non-Fibrous Material (15%)	ND						
							3 Paint (5%)	ND						
					AT-08-C-01C		1 Grey Cementitious Material (80%)	ND						
							2 White Non-Fibrous Material (15%)	ND						
							3 Paint (5%)	ND						
AT-08-C-02	Miscellaneous	Ceiling Tile/Mastic (1'X1' white, fiberboard, pinholes/brown) over C-01	Friable	Damaged	AT-08-C-02A	Office	1 Paint (2%)	ND						
							2 White Non-Fibrous Material (10%)	ND						
							3 Brown Fibrous Material (58%)	ND						
					AT-08-C-02B		4 Brown Mastic (30%)	ND						
							1 Paint (2%)	ND						
							2 White Non-Fibrous Material (20%)	ND						
					AT-08-C-02C		3 Brown Fibrous Material (31%)	ND						
							4 Brown Mastic (45%)	ND						
							5 Paint (2%)	ND						
							1 White Non-Fibrous Material (5%)	ND						
							2 Brown Fibrous Material (63%)	ND						
							3 Brown Mastic (30%)	ND						
AT-08-F-01	Miscellaneous	Concrete Floor	Non-friable	Intact	AT-08-F-01A	Stairwell	4 Paint (2%)	ND						
							1 Grey Cementitious Material (95%)	ND						
							2 Paint (5%)	ND						
					AT-08-F-01B		1 Grey Cementitious Material (95%)	ND						
							2 Paint (5%)	ND						
							1 Grey Cementitious Material (95%)	ND						
					AT-08-F-02		Miscellaneous	Ceramic Floor Tile/Grout/Mortar (~2" grey/grey/grey)	Non-friable	Intact	AT-08-F-02A	Electric Room	2 Paint (5%)	ND
													1 Grey Ceramic Tile (88%)	ND
													2 Tan Mastic (2%)	ND
AT-08-F-02B	3 Grey Grout (5%)	ND												
	4 Grey Mortar (5%)	ND												
	1 Grey Ceramic Tile (90%)	ND												
AT-08-F-02C	2 Grey Grout (5%)	ND												
	3 Grey Mortar (5%)	ND												
	1 Grey Ceramic Tile (90%)	ND												
	2 Grey Grout (5%)	ND												
	3 Grey Mortar (5%)	ND												
	1 White Drywall (78%)	ND												
AT-08-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-08-W-01A	Restroom	2 White Woven Material (5%)	ND						
							3 White Joint Compound (15%)	ND						
							4 Paint (2%)	ND						
							1 White Drywall (78%)	ND						
					AT-08-W-01B	Electric Room	2 White Woven Material (5%)	ND						
							3 White Joint Compound (15%)	ND						
							4 Paint (2%)	ND						
							1 White Drywall (78%)	ND						
					AT-08-W-01C	Electric Room	2 White Woven Material (5%)	ND						
							3 White Joint Compound (15%)	ND						
							4 Paint (2%)	ND						
							1 White Drywall (78%)	ND						

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
8th Floor (continued)								
AT-08-W-02	Miscellaneous	Ceramic Wall Tile/Grout/Mortar (4"x4" green/white/grey)	Non-friable	Intact	AT-08-W-02A	Store Room	1 Green Ceramic Tile (90%)	ND
							2 Grey Grout (5%)	ND
							3 Off-White Mortar (5%)	ND
					AT-08-W-02B		1 Green Ceramic Tile (90%)	ND
							2 Grey Grout (5%)	ND
							3 Off-White Mortar (5%)	ND
AT-08-W-02C	1 Green Ceramic Tile (90%)	ND						
	2 Grey Grout (5%)	ND						
	3 Off-White Mortar (5%)	ND						
AT-08-W-03	Surfacing	Skim Coat (white) over Concrete Walls	Non-friable	Intact	AT-08-W-03A	Restroom	1 Grey Cementitious Material (35%)	ND
							2 White Non-Fibrous Material (60%)	ND
							3 Paint (5%)	ND
					AT-08-W-03B		1 Grey Cementitious Material (100%)	ND
							1 Grey Cementitious Material (50%)	ND
							2 White Non-Fibrous Material (45%)	ND
AT-08-W-03C	2 White Non-Fibrous Material (45%)	ND						
	3 Paint (5%)	ND						

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %	
9th Floor									
AT-09-C-01	Miscellaneous	Ceiling Tile (2'X4' white, medium fissures with small holes)	Friable	Intact	AT-09-C-01A	Office	1 Beige Fibrous Material (98%)	ND	
					AT-09-C-01B		2 Paint (2%)	ND	
					AT-09-C-01C		1 Beige Fibrous Material (98%)	ND	
							2 Paint (2%)	ND	
AT-09-W-01	Miscellaneous	Ceramic Wall Tile/Grout/Mortar (5"x5" beige/white/white) over W-02	Non-friable	Intact	AT-09-W-01A	Equipment Room	1 Beige Ceramic Tile (96%)	ND	
					AT-09-W-01B		2 Off-White Grout (2%)	ND	
							3 Off-White Mortar (2%)	ND	
							1 Beige Ceramic Tile (96%)	ND	
							2 Off-White Grout (2%)	ND	
							3 Off-White Mortar (2%)	ND	
				AT-09-W-01C		1 Beige Ceramic Tile (96%)	ND		
						2 Off-White Grout (2%)	ND		
						3 Off-White Mortar (2%)	ND		
AT-09-W-02	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-09-W-02A	Office	1 White Drywall (78%)	ND	
							2 White Woven Material (5%)	ND	
							3 White Joint Compound (15%)	ND	
							4 Paint (2%)	ND	
					AT-09-W-02B	Equipment Room	1 White Drywall (78%)	ND	
							2 White Woven Material (5%)	ND	
		3 White Joint Compound (15%)	ND						
		4 Paint (2%)	ND						
				AT-09-W-02C	Equipment Room	1 White Joint Compound (95%)	ND		
						2 Paint (5%)	ND		
AT-09-M-01	Miscellaneous	Window Caulking (black)	Non-friable	Intact	AT-09-M-01A	Office	1 Black Non-Fibrous Material (95%)	ND	
					AT-09-M-01B		2 Paint (5%)	ND	
							1 Black Non-Fibrous Material (95%)	ND	
							2 Paint (5%)	ND	
							AT-09-M-01C	1 Black Non-Fibrous Material (95%)	ND
								2 Paint (5%)	ND

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
<i>Clock Floor</i>								
AT-CF-C-01	Miscellaneous	Concrete Ceiling	Non-friable	Intact	AT-CF-C-01A	Clock Room	1 Grey Cementitious Material (100%)	ND
					AT-CF-C-01B		1 Grey Cementitious Material (100%)	ND
					AT-CF-C-01C		1 Grey Cementitious Material (100%)	ND
AT-CF-W-01	Miscellaneous	Gypsum Wallboard/Joint Compound	Non-friable	Intact	AT-CF-W-01A	Clock Room	1 Beige Non-Fibrous Material (45%)	ND
							2 White Non-Fibrous Material (50%)	ND
							3 Paint (5%)	ND
					AT-CF-W-01B		1 White Non-Fibrous Material (95%)	ND
							2 Paint (5%)	ND
					AT-CF-W-01C		1 Beige Non-Fibrous Material (50%)	ND
AT-CF-W-02	Miscellaneous	Concrete Walls	Non-friable	Intact	AT-CF-W-02A	Storage Room	1 Grey Cementitious Material (100%)	ND
					AT-CF-W-02B		1 Grey Cementitious Material (95%)	ND
							2 Paint (5%)	ND
					AT-CF-W-02C		1 Grey Cementitious Material (100%)	ND
AT-CF-W-03	Surfacing	Plaster Walls	Non-friable	Damaged	AT-CF-W-03A	Storage Room	1 Off-White Plaster (100%)	ND
					AT-CF-W-03B		1 Off-White Plaster (100%)	ND
					AT-CF-W-03C		1 Off-White Plaster (100%)	ND
							1 Off-White Plaster (100%)	ND
AT-CF-M-01	Miscellaneous	Vinyl Base/Mastic (4" brown/brown)	Friable	Significantly Damaged	AT-CF-M-01A	Clock Room	1 Brown Non-Fibrous Material (96%)	ND
							2 Brown Mastic (2%)	0.09% Anthophyllite (Point Count)
							3 Paint (2%)	ND
					AT-CF-M-01B		1 Brown Non-Fibrous Material (96%)	ND
							2 Brown Mastic (2%)	<1% Anthophyllite
							3 Off-White Non-Fibrous Material (2%)	ND
					AT-CF-M-01C		1 Brown Non-Fibrous Material (96%)	ND
							2 Brown Mastic (2%)	<1% Anthophyllite
							3 Paint (2%)	ND

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
10th Floor								
AT-10-C-01	Miscellaneous	Ceiling Tile (2'X4' white, dense linear fissures and small holes)	Friable	Intact	AT-10-C-01A	Observation Deck	1 Beige Fibrous Material (98%)	ND
					AT-10-C-01B		2 Paint (2%)	ND
					AT-10-C-01C		1 Beige Fibrous Material (98%)	ND
							2 Paint (2%)	ND
AT-10-C-02	Miscellaneous	Ceiling Tile (2'X4' white, deep linear fissures and small holes)	Friable	Intact	AT-10-C-02A	Observation Deck	1 Beige Fibrous Material (98%)	ND
					AT-10-C-02B		2 Paint (2%)	ND
					AT-10-C-02C		1 Beige Fibrous Material (98%)	ND
							2 Paint (2%)	ND
AT-10-C-03	Miscellaneous	Ceiling Skim Coat, over Concrete	Non-friable	Intact	AT-10-C-03A	Office Storage	1 Grey Cementitious Material (100%)	ND
					AT-10-C-03B		1 Grey Cementitious Material (100%)	ND
					AT-10-C-03C		1 Grey Cementitious Material (100%)	ND
AT-10-F-01	Surfacing	Non-skid Floor Surfacing (beige-painted, coarse)	Non-friable	Damaged	AT-10-F-01A	Lanai	1 Grey Non-Fibrous Material with Debris (100%)	ND
					AT-10-F-01B		1 Grey Non-Fibrous Material with Debris (100%)	ND
					AT-10-F-01C		1 Grey Non-Fibrous Material with Debris (100%)	ND
AT-10-F-02	Miscellaneous	Vinyl Floor Tile/Mastic (12" beige with light beige streaks/yellow)	Non-friable	Intact	AT-10-F-02A	Storage Room	1 Beige Tile (100%)	ND
					AT-10-F-02B		2 Black Mastic (Trace%)	ND
					AT-10-F-02C		1 Beige Tile (100%)	ND
							2 Black Mastic (Trace%)	ND
							1 Grey Non-Fibrous Material (Trace%)	ND
AT-10-W-01	Surfacing	Textured Wall Surfacing (beige, coarse)	Non-friable	Intact	AT-10-W-01A	Lanai	1 Beige Non-Fibrous Material (95%)	ND
					AT-10-W-01B		2 Paint (5%)	ND
					AT-10-W-01C		1 Grey Cementitious Material (20%)	ND
							2 Beige Non-Fibrous Material (75%)	ND
							3 Paint (5%)	ND
AT-10-W-03	Miscellaneous	Concrete Walls	Non-friable	Intact	AT-10-W-03A	Lanai	1 Grey Cementitious Material (100%)	ND
					AT-10-W-03B	Observation Deck	1 Grey Cementitious Material (100%)	ND
					AT-10-W-03C	Storage Room	1 Grey Cementitious Material (100%)	ND
AT-10-W-04	Surfacing	Plaster Walls	Non-friable	Damaged	AT-10-W-04A	Storage Room	1 White Plaster (95%)	ND
					AT-10-W-04B	Storage Room	2 Paint (5%)	ND
					AT-10-W-04C	Observation Deck	1 Beige Plaster (85%)	ND
							2 White Plaster (10%)	ND
							3 Paint (5%)	ND
							1 Off-White Plaster (95%)	ND
							2 Paint (5%)	ND

Laboratory Asbestos Results

Aloha Tower
Honolulu Harbor, Oahu, HI

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Homogeneous Area	Material Type	Material Description	Friability	Condition	Sample ID	Sample Location	Layer (% of Combined Sample)	Asbestos %
11th Floor								
AT-11-F-01	Miscellaneous	Concrete Floor	Non-friable	Intact	AT-11-F-01A	Elevator Machine Room	1 Grey Cementitious Material (95%)	ND
							2 Paint (5%)	ND
					AT-11-F-01B		1 Grey Cementitious Material (100%)	ND
					AT-11-F-01C		1 Grey Cementitious Material (100%)	ND
AT-11-F-02	Miscellaneous	Concrete Pipe Supports	Non-friable	Intact	AT-11-F-02A	Elevator Machine Room	1 Grey Cementitious Material (95%)	ND
							2 Paint (5%)	ND
					AT-11-F-02B		1 Grey Cementitious Material (95%)	ND
					AT-11-F-02C		2 Paint (5%)	ND
							1 Grey Cementitious Material (95%)	ND
							2 Paint (5%)	ND
AT-11-W-01	Miscellaneous	Concrete Walls	Non-friable	Intact	AT-11-W-01A	Elevator Machine Room	1 Grey Cementitious Material (100%)	ND
							1 Grey Cementitious Material (100%)	ND
					AT-11-W-01B		1 Beige Ceramic Tile (45%)	ND
					AT-11-W-01C		2 Grey Cementitious Material (55%)	ND
							2 Grey Non-Fibrous Material with Debris (20%)	ND
AT-11-M-01	Miscellaneous	Window Caulking (grey, white, and beige)	Non-friable	Damaged	AT-11-M-01A	Elevator Machine Room	3 Black Tar (2%)	2% Chrysotile
							4 Beige Semi-Fibrous Material (30%)	3% Chrysotile
					AT-11-M-01B		1 Grey Non-Fibrous Material with Debris (68%)	ND
						2 Black Tar (Trace%)	<1% Chrysotile	
						3 Beige Semi-Fibrous Material (32%)	3% Chrysotile	
					AT-11-M-01C		1 Grey Non-Fibrous Material with Debris (15%)	ND
							2 Beige Semi-Fibrous Material (85%)	3% Chrysotile
AT-11-M-02	Miscellaneous	Pipe Gasket (orange)	Non-friable	Intact	AT-11-M-02A	Elevator Machine Room	1 Red Semi-Fibrous Material (97%)	ND
							2 Paint (3%)	ND
					AT-11-M-02B		1 Red Semi-Fibrous Material (97%)	ND
					AT-11-M-02C		2 Paint (3%)	ND
							1 Red Semi-Fibrous Material (97%)	ND
							2 Paint (3%)	ND
AT-11-M-03	Miscellaneous	Window Caulking (white and grey, brittle and hard)	Non-friable	Damaged	AT-11-M-03A	Elevator Machine Room	1 Grey Cementitious Material (45%)	ND
							2 Beige Semi-Fibrous Material (55%)	3% Chrysotile
					AT-11-M-03B		1 Grey Cementitious Material (43%)	ND
						2 Black Tar (2%)	2% Chrysotile	
						3 Beige Semi-Fibrous Material (55%)	3% Chrysotile	
					AT-11-M-03C		1 Grey Cementitious Material (43%)	ND
							2 Black Tar (2%)	2% Chrysotile
							3 Beige Semi-Fibrous Material (55%)	3% Chrysotile

Laboratory Lead Results

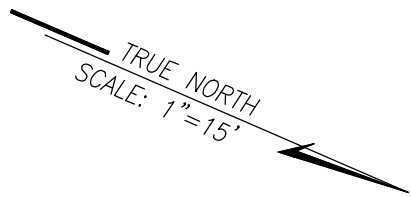
Aloha Tower
Honolulu Harbor, Hawaii, Oahu

Limited Hazardous Materials Survey
Survey Dates: November 13-15, 2023

Sample ID	Sample Location	Sample Description	Condition	Lead (ppm)
AT-GF-P01	Exterior	Gray Concrete Wall	Poor	33
AT-GF-P02	Main Electrical Room	Light Blue Concrete Wall	Fair	70
AT-GF-P03	Electrical Room	Beige Concrete Wall	Intact	< 60
AT-GF-P04	Fire Pump Room	Yellow Beige Concrete Wall	Poor	2,600
AT-GF-P05	Fire Pump Room	Red Metal Pipe	Intact	< 200
AT-GF-P06	Fire Pump Room	Black Metal Pipe	Intact	390
AT-GF-P07	Elevator	Gray Metal Wall	Intact	360
AT-02-P01	Fire Pump Room	Beige Plaster Wall	Poor	36,000
AT-03-P01	Vestibule	White Concrete Wall	Intact	5,600
AT-03-P02	Corridor	Gray Concrete Wall	Intact	19,000
AT-03-P03	Lanai 2	Beige Plaster Wall	Fair	3,100
AT-03-P04	Storage 2	Green Concrete Wall	Fair	3,300
AT-04-P01	Stair Room	Green Concrete Wall	Intact	12,000
AT-04-P02	Equipment Room	White Gypsum Wall	Intact	< 200
AT-05-P01	Equipment Room	White Gypsum Wall	Intact	< 60
AT-05-P02	Stair Room	Gray Concrete Wall	Intact	70
AT-06-P01	Equipment Room	White Gypsum Wall	Intact	< 60
AT-06-P02	Stair Room	Gray Concrete Wall	Intact	8,600
AT-07-P01	Stair Room	Gray Concrete Wall	Intact	8,400
AT-07-P02	Office	White Gypsum Wall	Fair	< 60
AT-07-P03	Elevator	Beige Metal Wall	Intact	660
AT-08-P01	Equipment Room	White Gypsum Wall	Intact	< 60
AT-08-P02	Equipment Room	White Concrete Wall	Intact	4,200
AT-08-P03	Stair Room	Gray Plaster Wall	Intact	< 60
AT-09-P01	Equipment Room	White Gypsum Wall	Intact	< 60
AT-09-P02	Restroom	Green Wood Windows	Intact	< 300
AT-CF-P01	Clock Room	Tan Gypsum Wall	Intact	< 60
AT-CF-P02	Clock Room	Tan Concrete Wall	Fair	410
AT-10-P01	Storage Room	Peach Plaster Wall	Poor	18,000
AT-10-P02	Elevator	Gray Metal Wall	Intact	110
AT-10-P03	Observation Deck	White Gypsum Wall	Intact	< 60
AT-10-P04	Lanai	Green Concrete Floor	Poor	< 400
AT-10-P05	Lanai	Beige Textured Floor Surfacing	Poor	< 60
AT-11-P01	Elevator Machine Room	Beige Metal Railing	Intact	3,900
AT-11-P02	Elevator Machine Room	Yellow Metal Pipe	Intact	36,000
AT-11-P03	Elevator Machine Room	Red Concrete Floor	Intact	980
AT-11-P04	Elevator Machine Room	Beige Metal Ladder	Intact	1,100


APPENDIX B

Figures



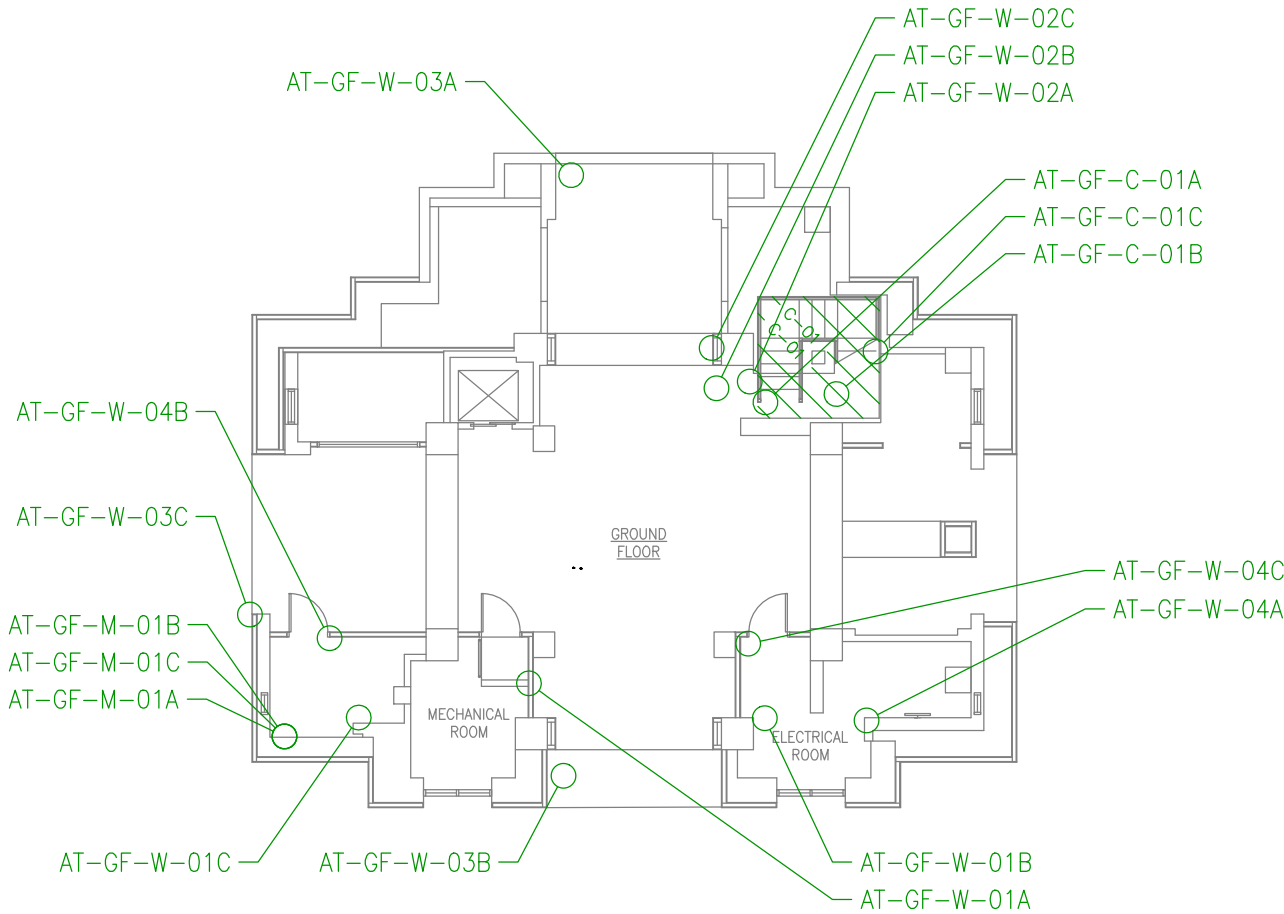
HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.


	C-01	GYPSUM CEILING BOARD/JOINT COMPOUND
N/A	W-01	CONCRETE WALLS
N/A	W-02	PLASTER WALLS
N/A	W-03	TEXTURED WALL SURFACING (BEIGE, COARSE)
N/A	W-04	CMU BLOCK WALL/GROUT
N/A	M-01	PIPE GASKET (BLACK AND GREY)

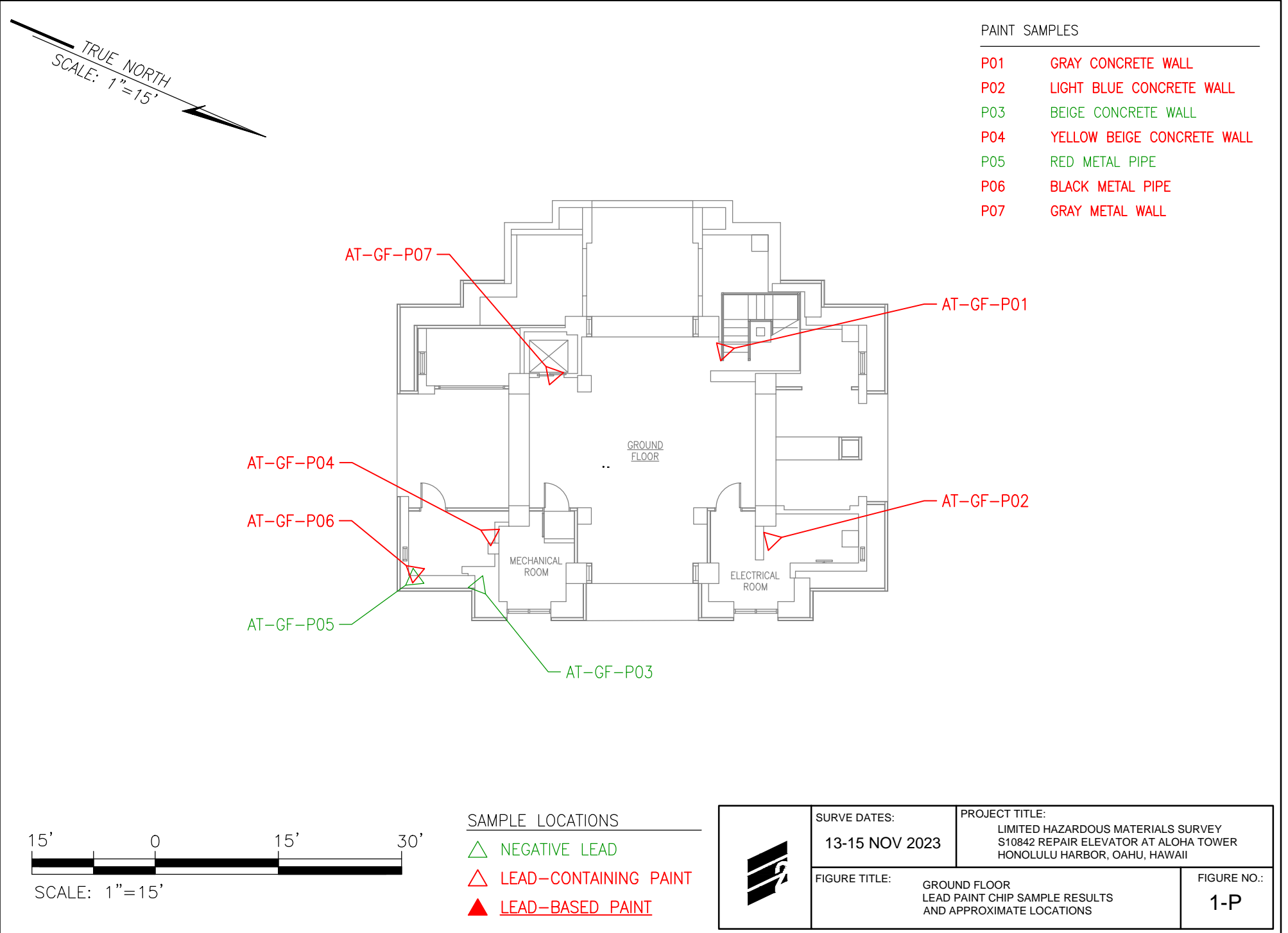
NOTES

- CEILING C-01 ONLY ACCESSIBLE IN STAIRWELL
- CONCRETE CEILINGS INACCESSIBLE
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.

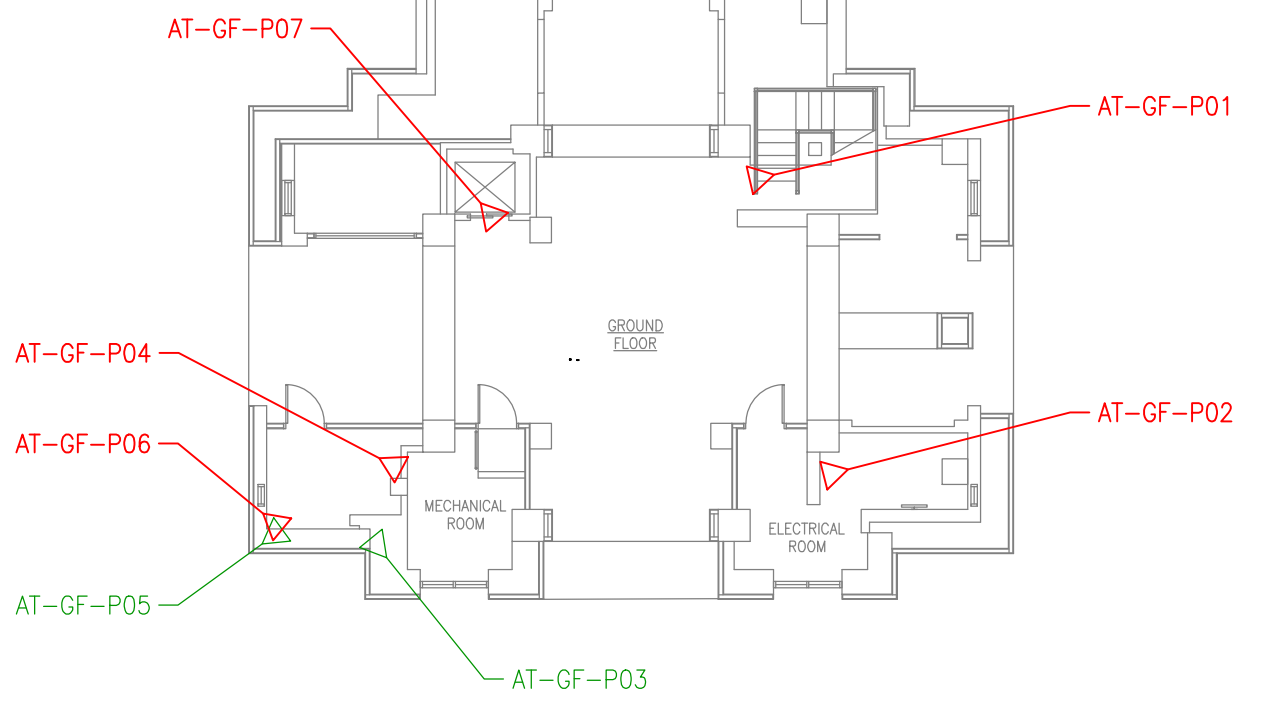


SAMPLE LOCATIONS
 ○ NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: GROUND FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 1-A

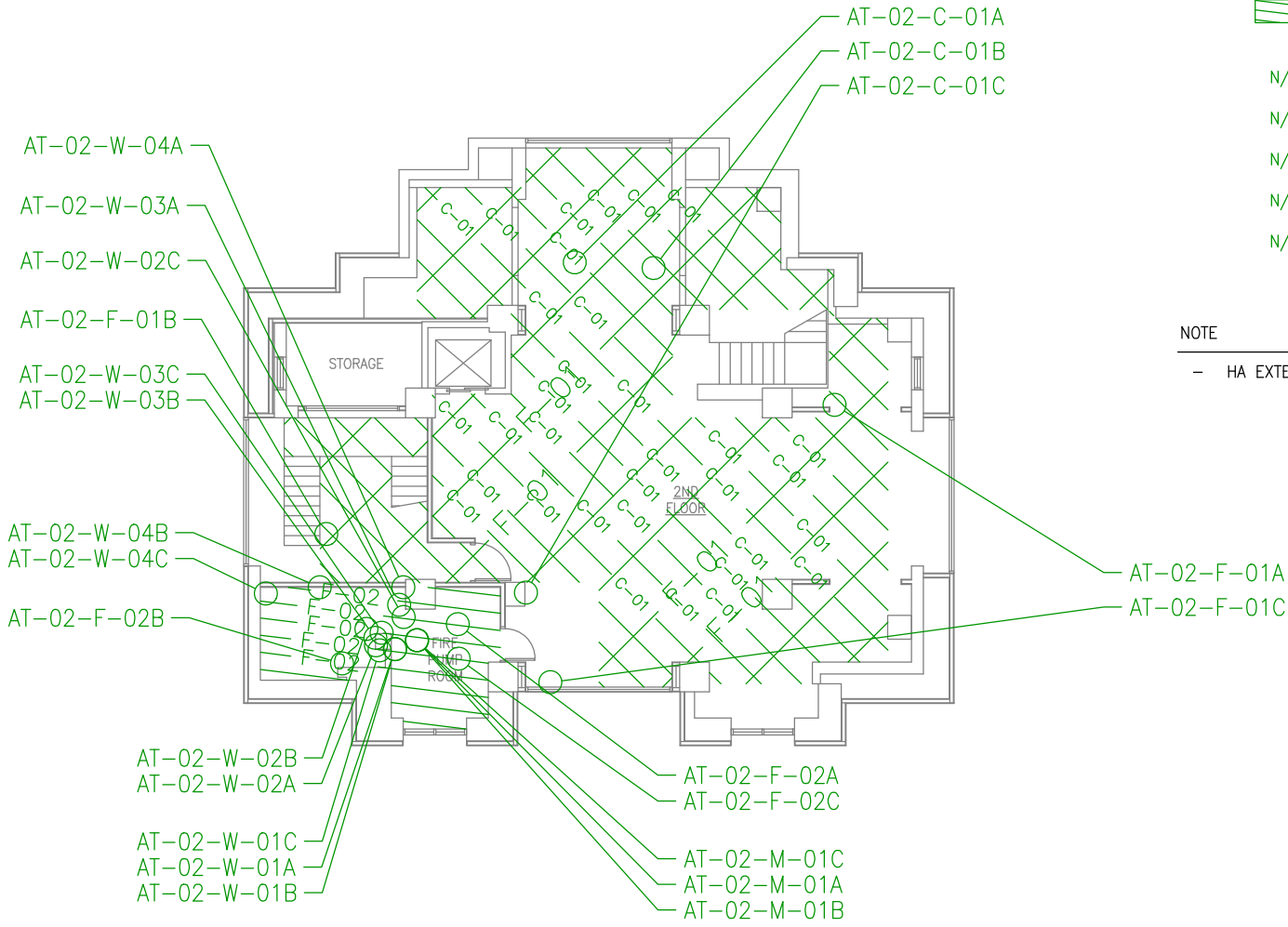
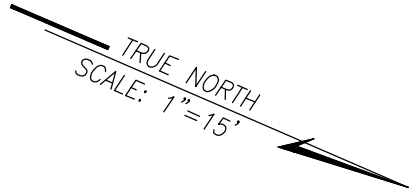


PAINT SAMPLES	
P01	GRAY CONCRETE WALL
P02	LIGHT BLUE CONCRETE WALL
P03	BEIGE CONCRETE WALL
P04	YELLOW BEIGE CONCRETE WALL
P05	RED METAL PIPE
P06	BLACK METAL PIPE
P07	GRAY METAL WALL



SAMPLE LOCATIONS	
	NEGATIVE LEAD
	LEAD-CONTAINING PAINT
	LEAD-BASED PAINT

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: GROUND FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 1-P



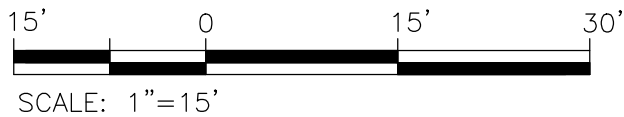
HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	C-01	GYPSUM CEILING BOARD/JOINT COMPOUND
	F-01	VINYL FLOOR TILE/MASTIC (12" LIGHT AND DARK TEAL, CHECKERBOARD PATTERN/YELLOW)
	F-02	CONCRETE FLOOR (HATCHED WHERE EXPOSED)
N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	CONCRETE WALLS
N/A	W-03	SKIM COAT (WHITE), OVER CONCRETE WALLS
N/A	W-04	CMU BLOCK WALL/GROUT
N/A	M-01	CEILING TILE MASTIC ONLY (BROWN) ON CEILING TILE (2'X4' WHITE PEGBOARD) (INACCESSIBLE, ASSUMED ACM)

NOTE

- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



SAMPLE LOCATIONS

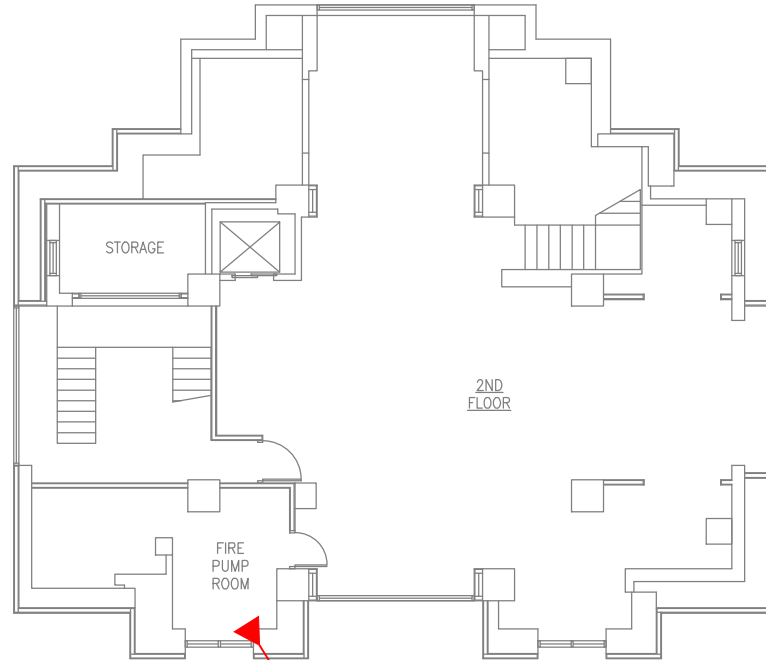
- NEGATIVE ASBESTOS
- AC ASSUMED ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 2ND FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 2-A

TRUE NORTH
SCALE: 1"=15'

PAINT SAMPLES

P01 BEIGE PLASTER WALL



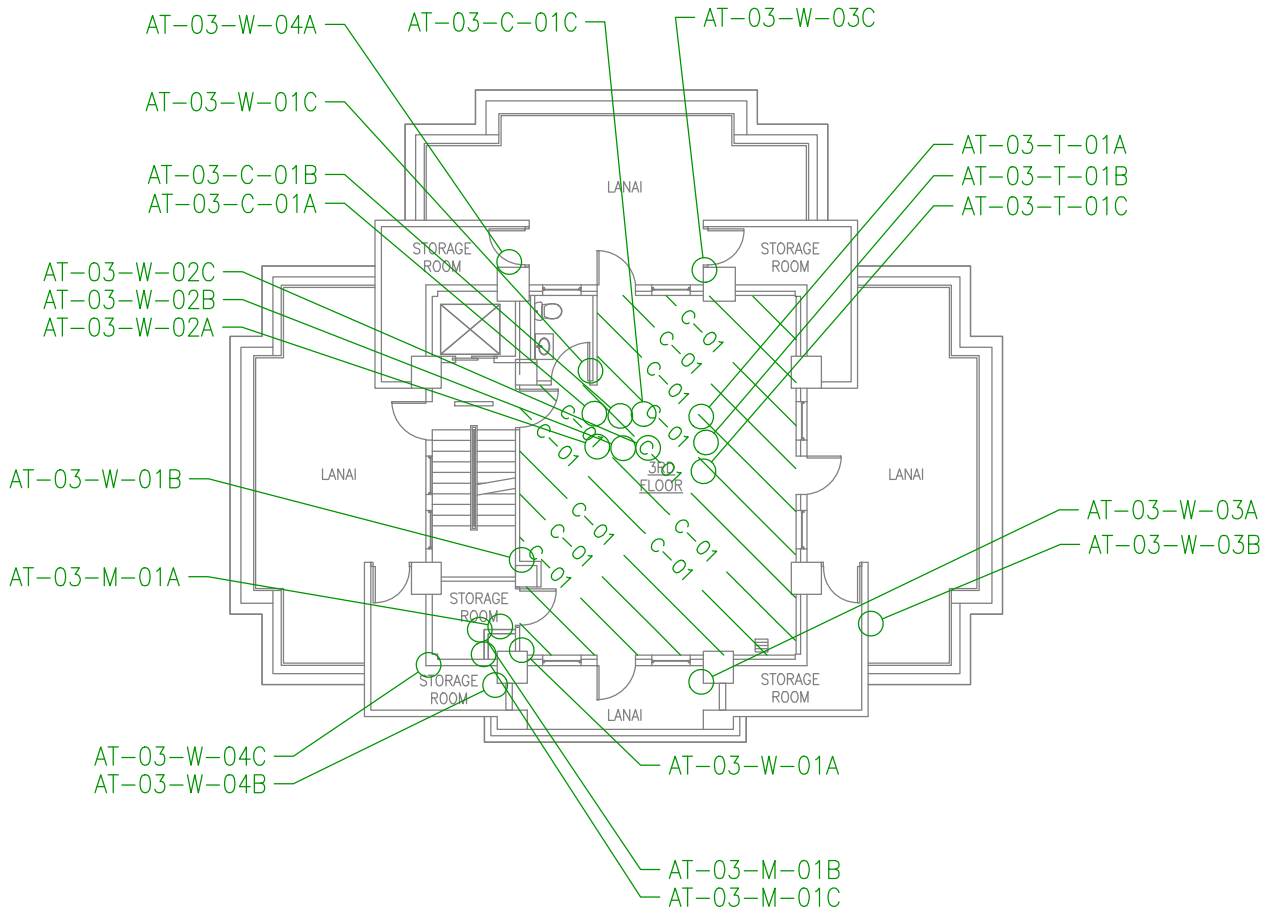
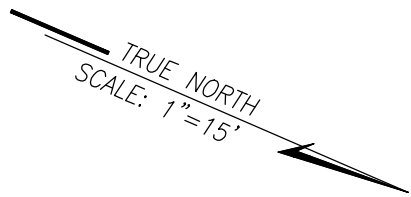
AT-02-P01



SAMPLE LOCATIONS

- △ NEGATIVE LEAD
- △ LEAD-CONTAINING PAINT
- ▲ LEAD-BASED PAINT

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 2ND FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 2-P



HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	C-01	CONCRETE CEILING
N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	WALL SKIM COAT
N/A	W-03	TEXTURED WALL SURFACING (BEIGE, COARSE)
N/A	W-04	CONCRETE WALLS
N/A	T-01	BLOWN-IN CEILING INSULATION/FIREPROOFING
N/A	M-01	VINYL BASE/MASTIC (4" BROWN/BROWN)

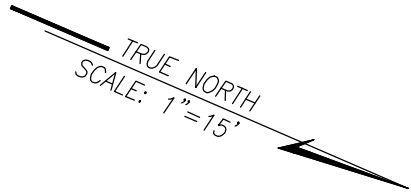
NOTE

- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



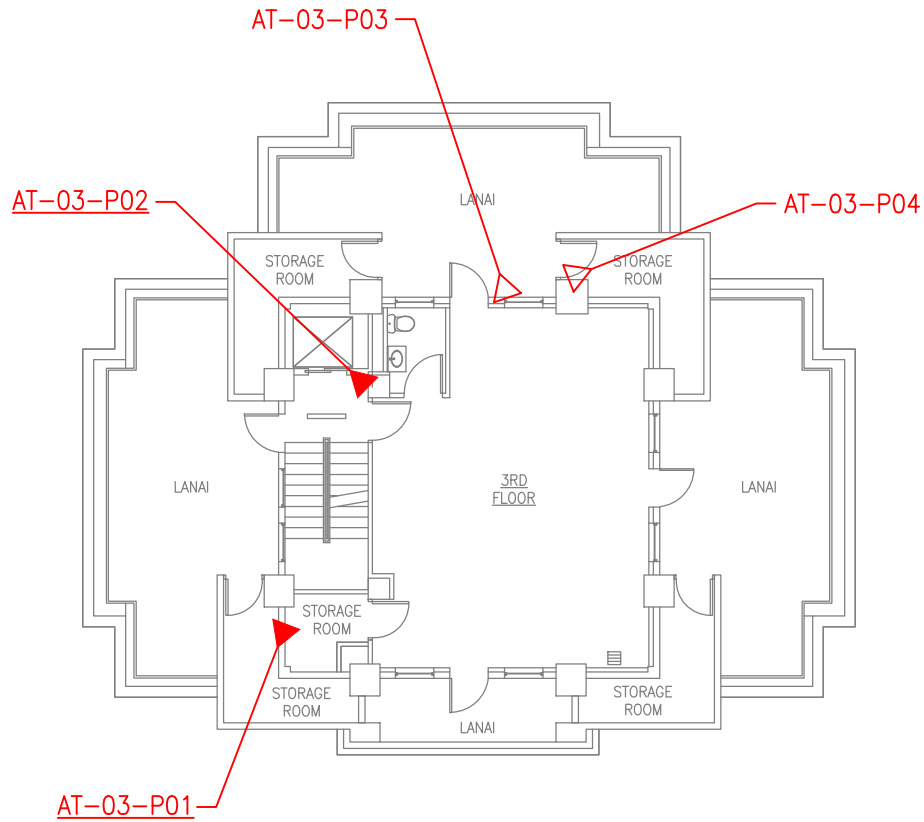
SAMPLE LOCATIONS
 NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 3RD FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 3-A



PAINT SAMPLES

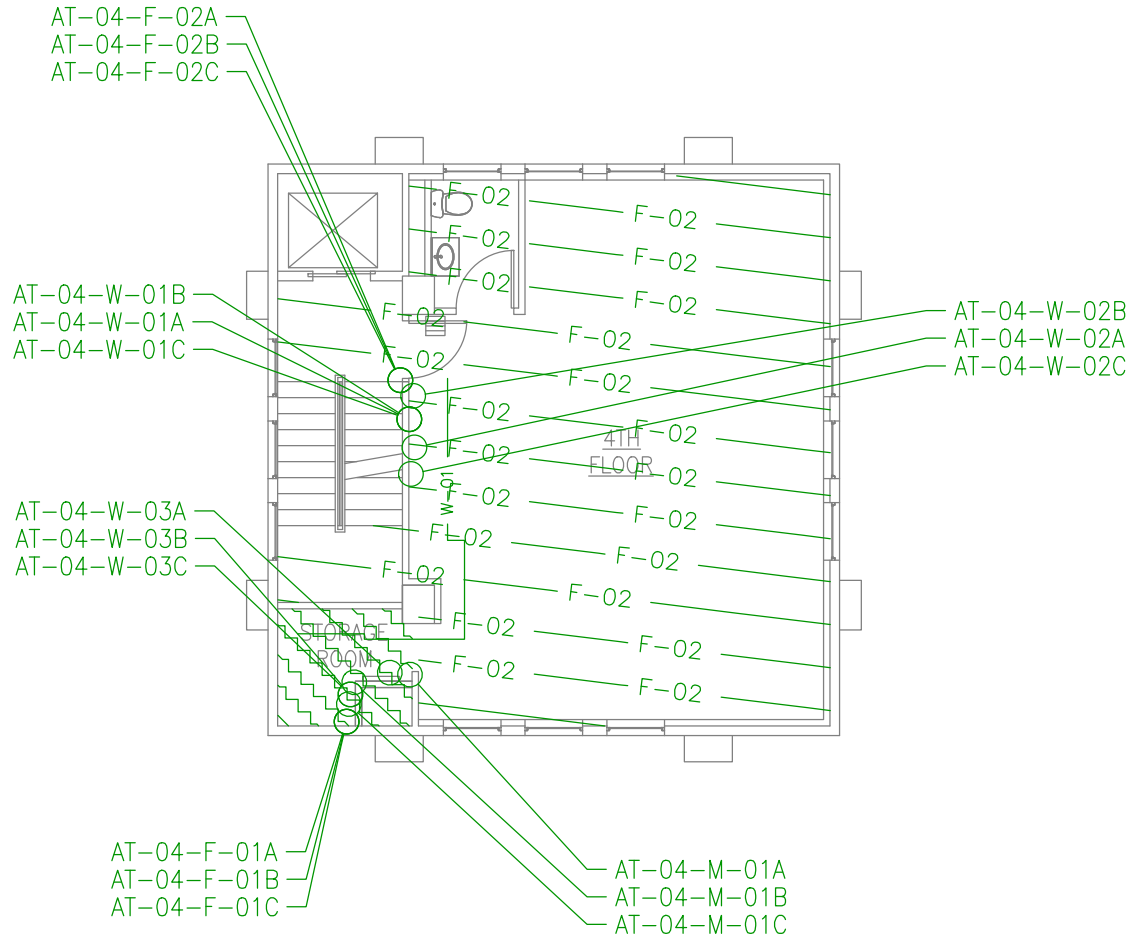
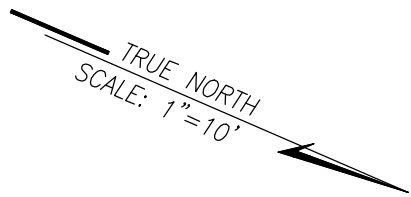
- P01 WHITE CONCRETE WALL
- P02 GRAY CONCRETE WALL
- P03 BEIGE PLASTER WALL
- P04 GREEN CONCRETE WALL



SAMPLE LOCATIONS

- △ NEGATIVE LEAD
- △ LEAD-CONTAINING PAINT
- ▲ LEAD-BASED PAINT

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 3RD FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 3-P



HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	F-01	VINYL FLOOR TILE/MASTIC (12" WHITE/YELLOW) OVER LEVELING COMPOUND
	F-02	CONCRETE FLOOR (HATCHED WHERE EXPOSED)
N/A	W-01	SKIM COAT (WHITE), OVER CONCRETE WALLS
N/A	W-02	WALLPAPER/ADHESIVE (BROWN STRANDED FABRIC/BROWN)
N/A	W-03	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	M-01	VINYL BASE/MASTIC (4" GREEN/YELLOW)

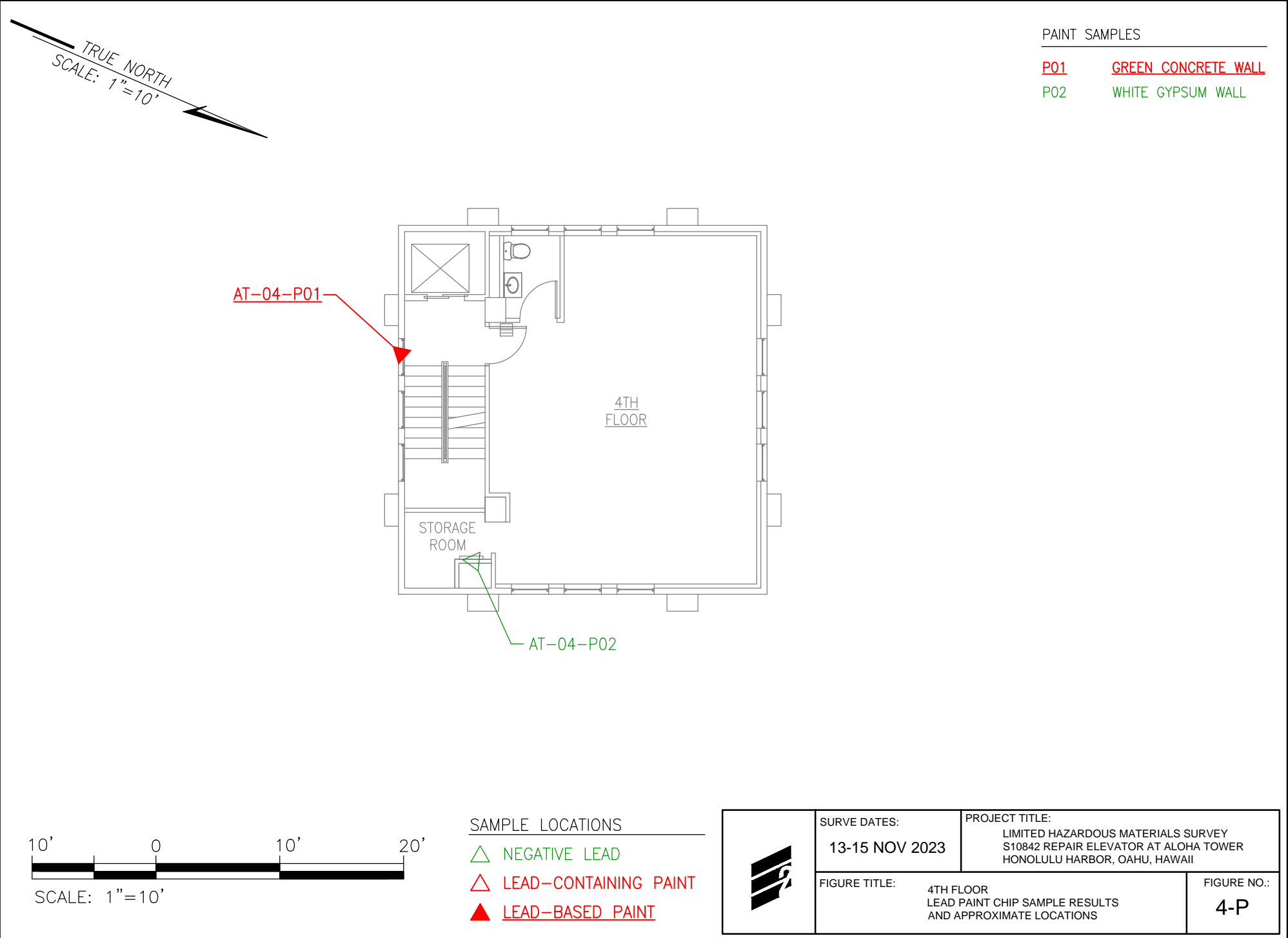
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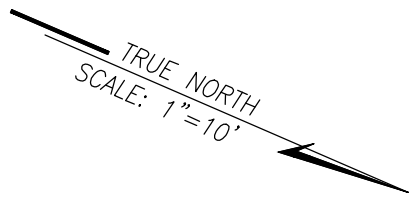
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



SAMPLE LOCATIONS
 NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 4TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 4-A





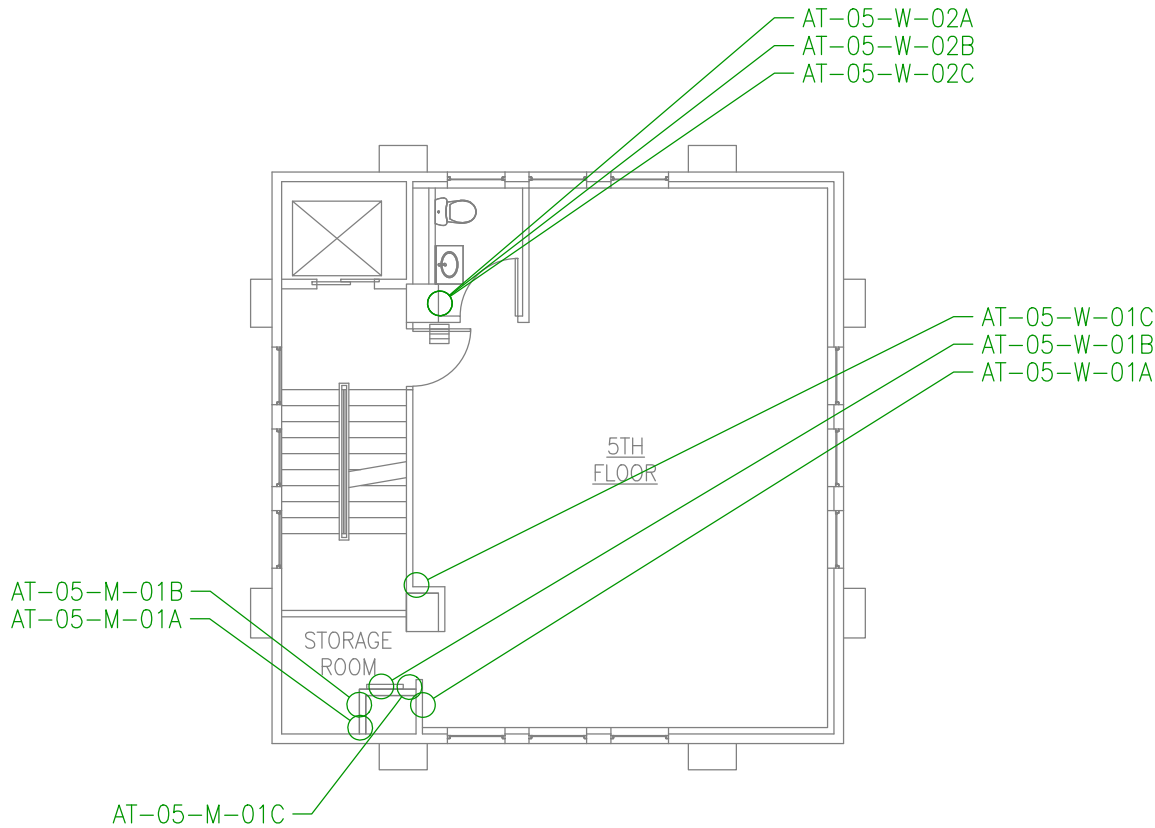
HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	PLASTER WALLS
N/A	M-01	VINYL BASE/MASTIC (4" GREEN/YELLOW)

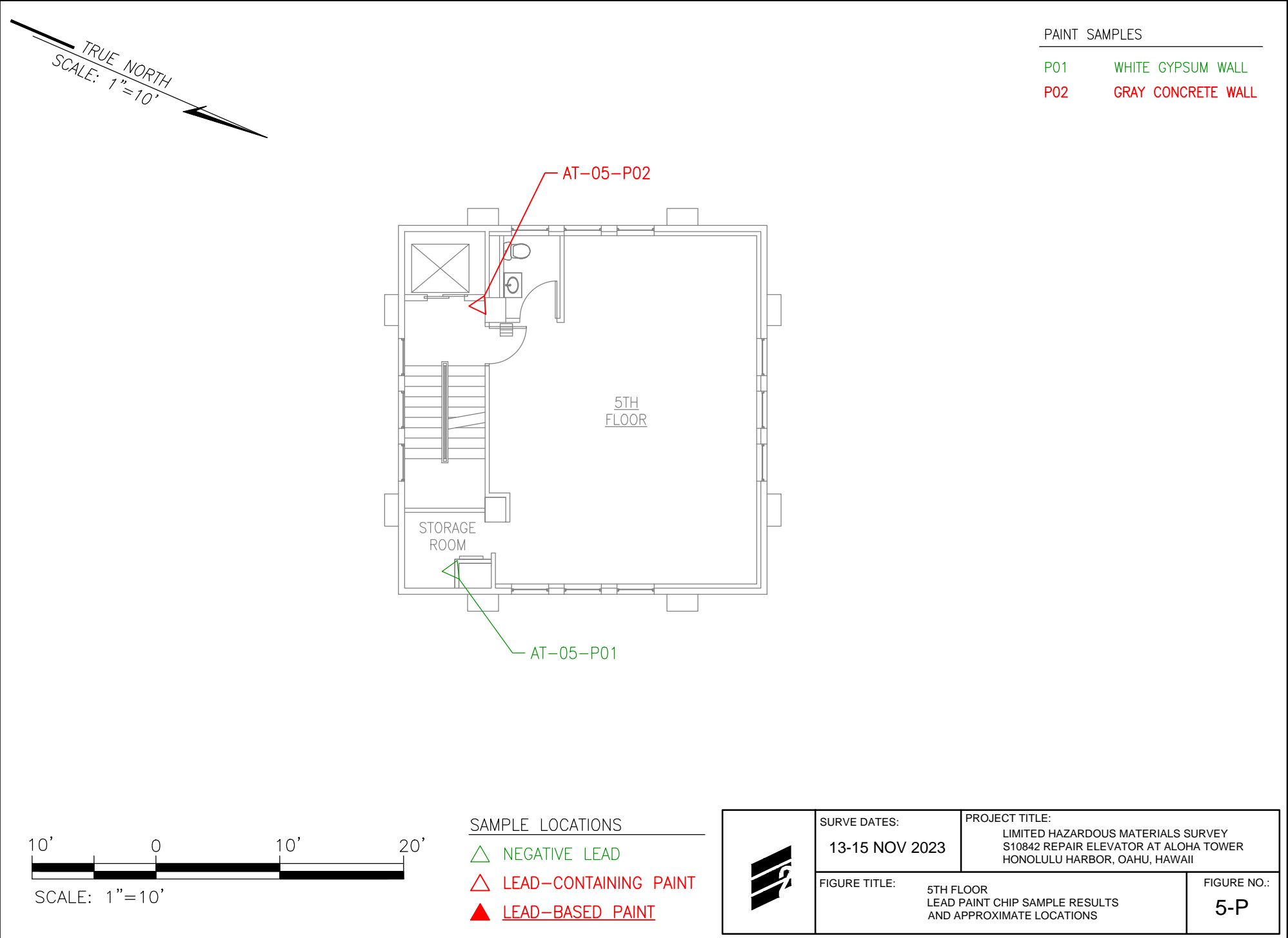
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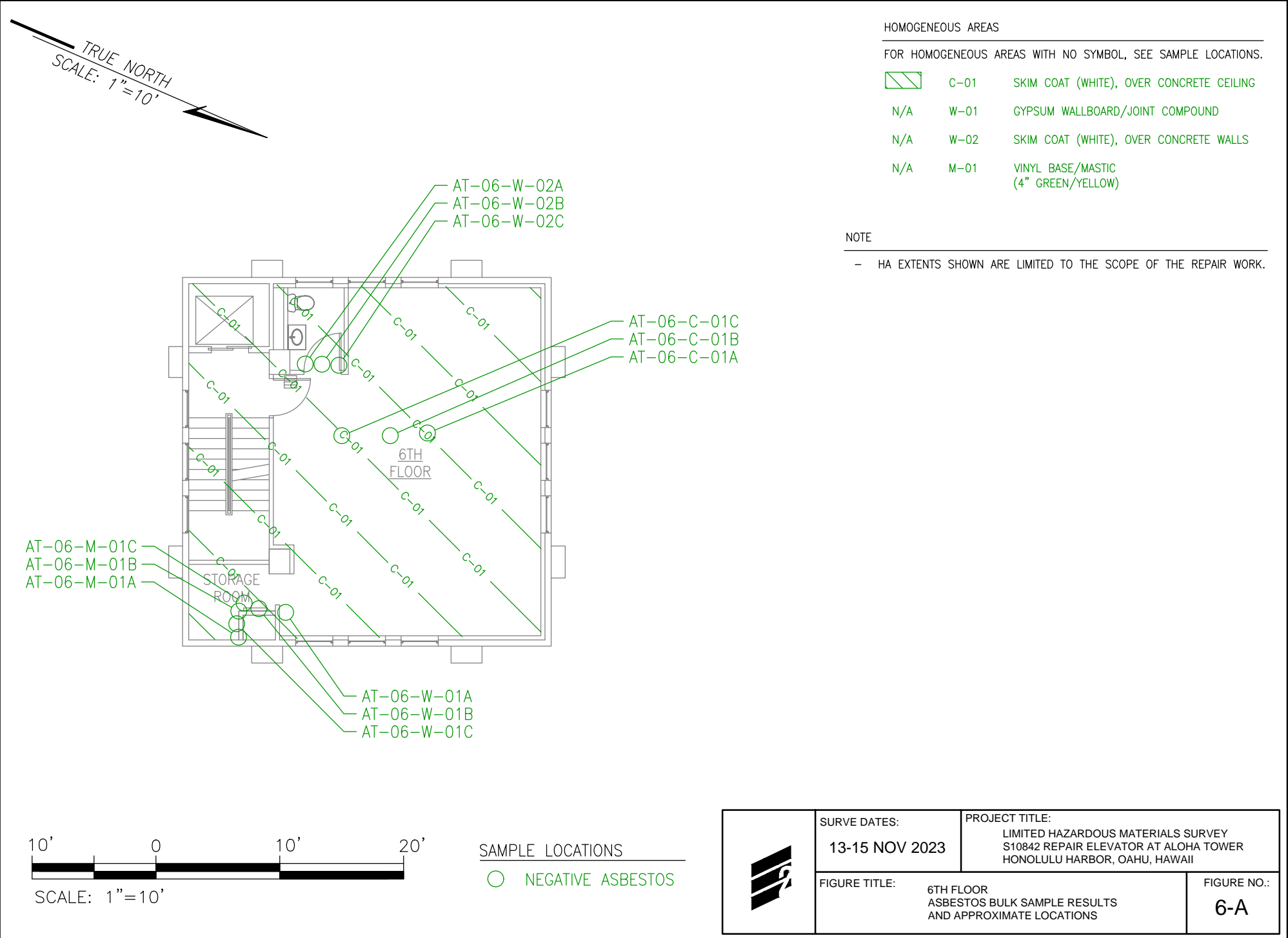
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.

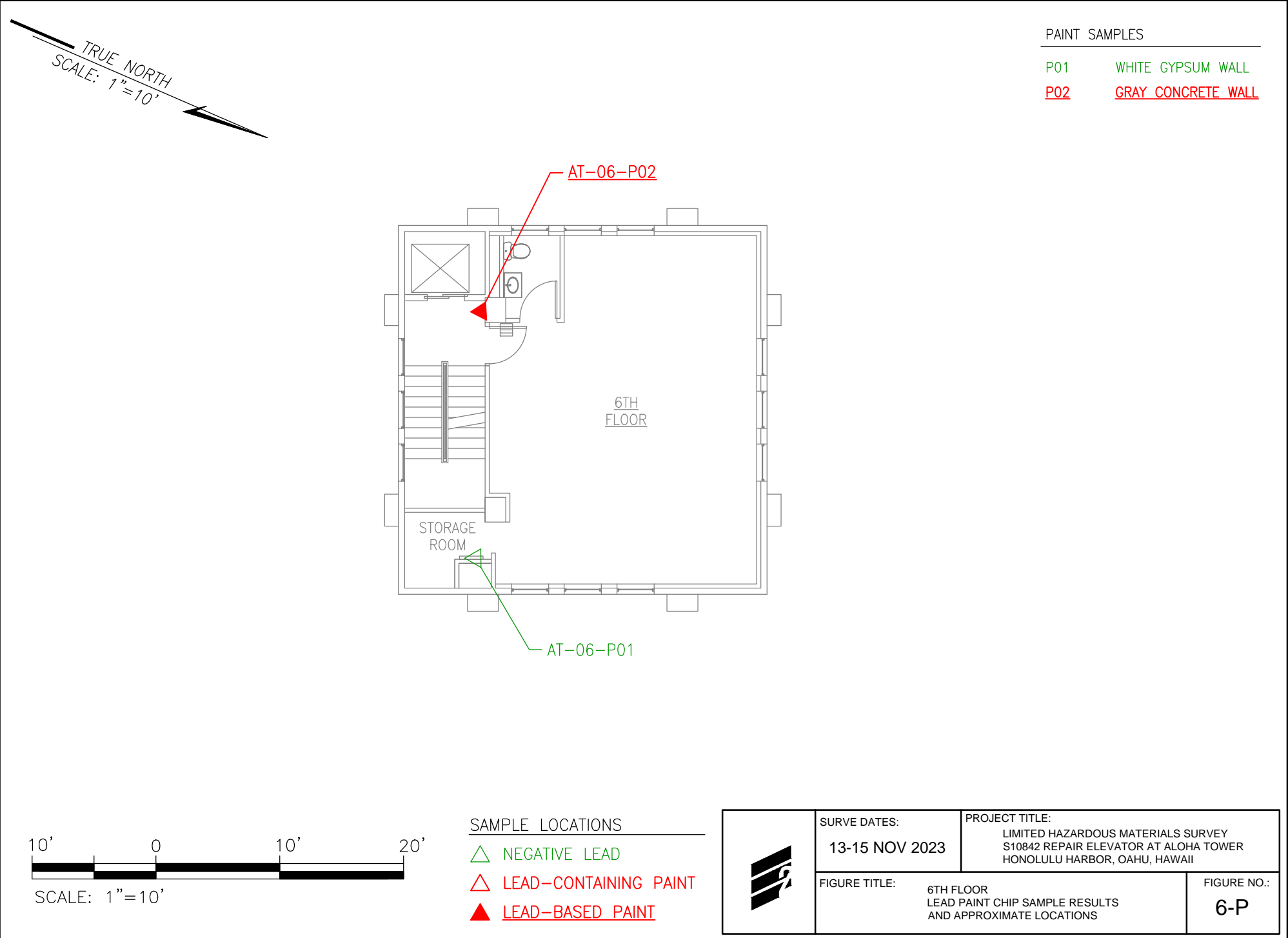


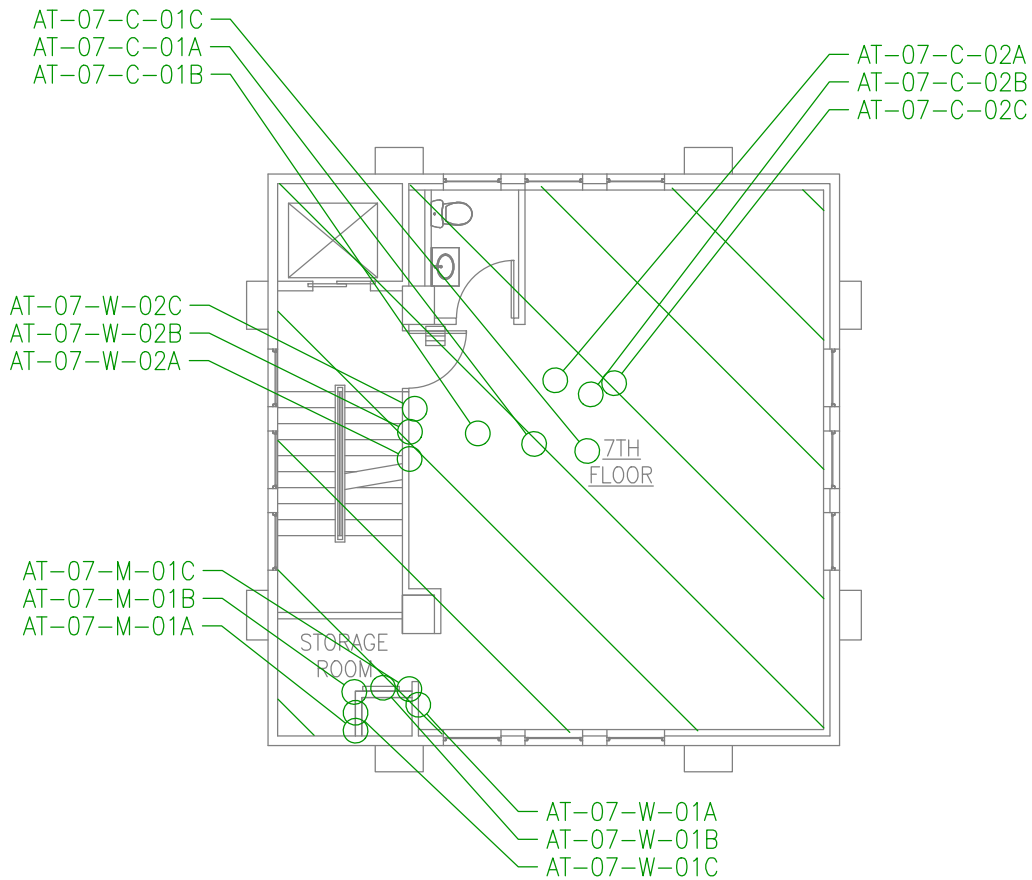
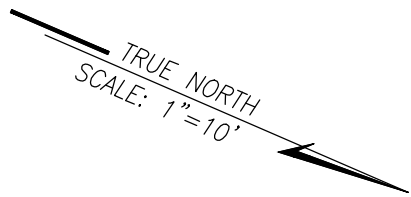
SAMPLE LOCATIONS
 ○ NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 5TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 5-A









HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	C-01	SKIM COAT (WHITE), OVER CONCRETE CEILING
	C-02	CEILING TILE/MASTIC (1'X1' WHITE, MEDIUM SHALLOW FISSURES/BROWN) OVER C-01
N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	SKIM COAT (WHITE), OVER CONCRETE WALLS
N/A	M-01	VINYL BASE/MASTIC (4" GREEN/YELLOW)

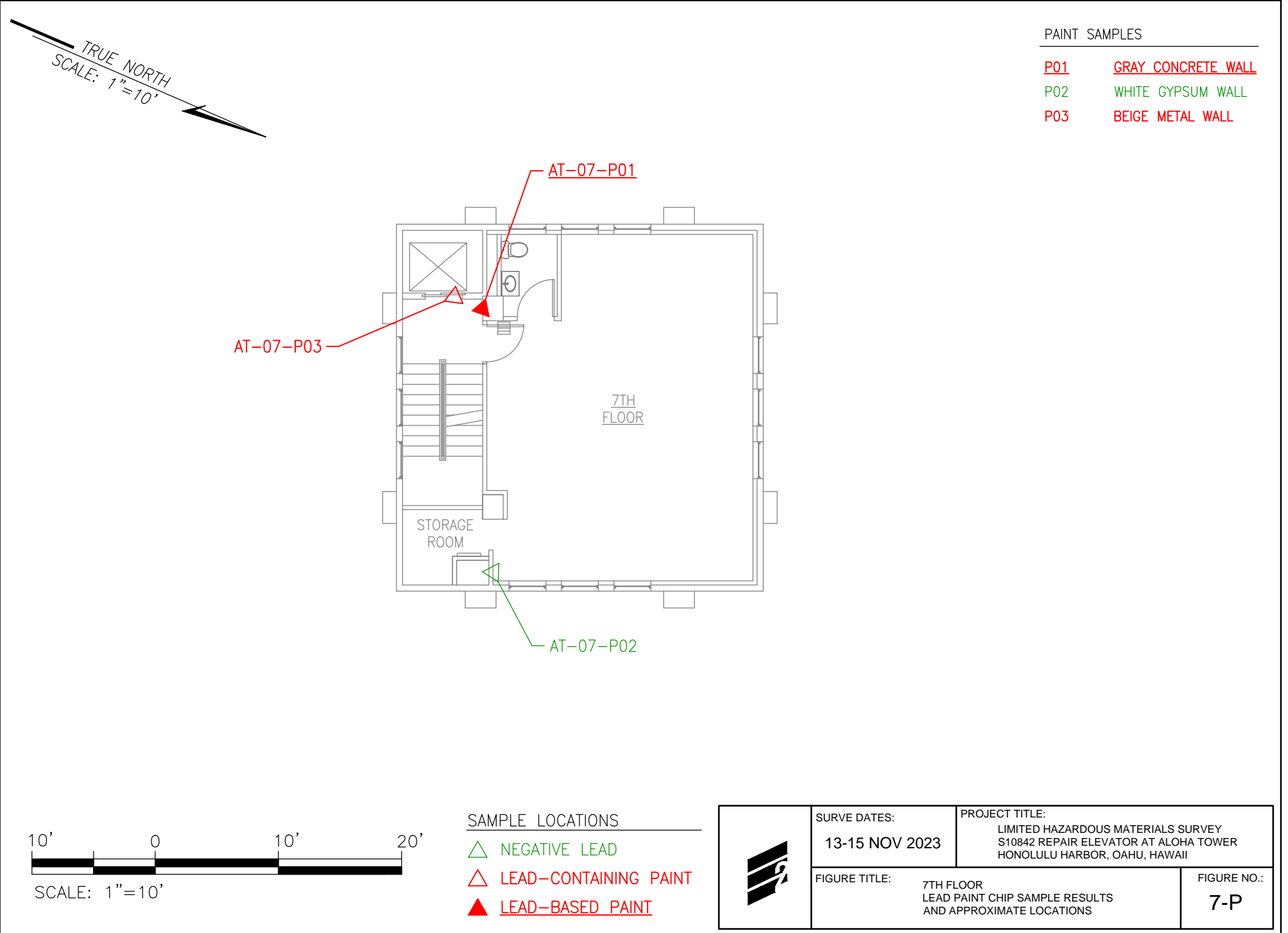
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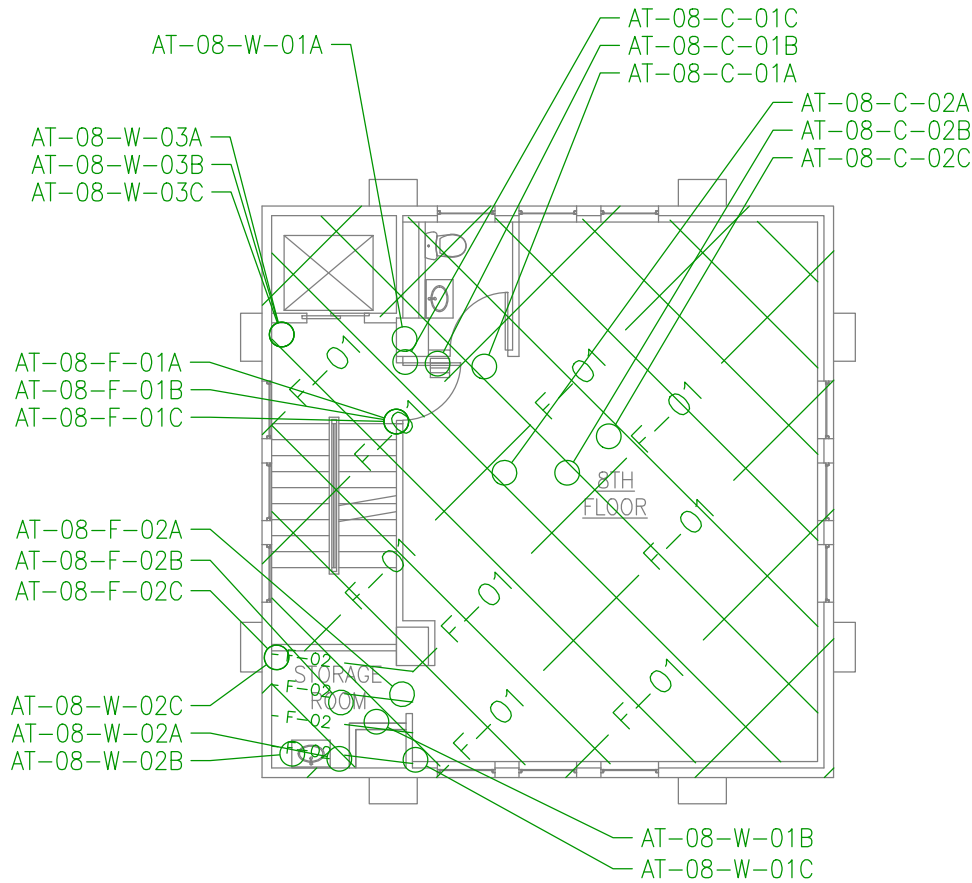
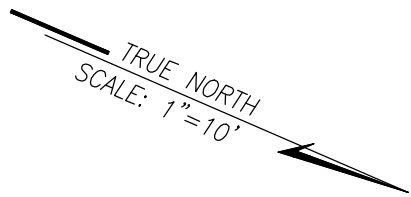
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



SAMPLE LOCATIONS
 NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 7TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 7-A





HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	C-01	SKIM COAT (WHITE), OVER CONCRETE CEILING
	C-02	CEILING TILE/MASTIC (1'X1' WHITE, FIBERBOARD, PINHOLES/BROWN) OVER C-01
	F-01	CONCRETE FLOOR (HATCHED WHERE EXPOSED)
	F-02	CERAMIC FLOOR TILE/GROUT/MORTAR (~2" GREY/GREY/GREY)
N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	CERAMIC WALL TILE/GROUT/MORTAR (4" GREEN/WHITE/GREY)
N/A	W-03	SKIM COAT (WHITE), OVER CONCRETE WALLS

NOTE

- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



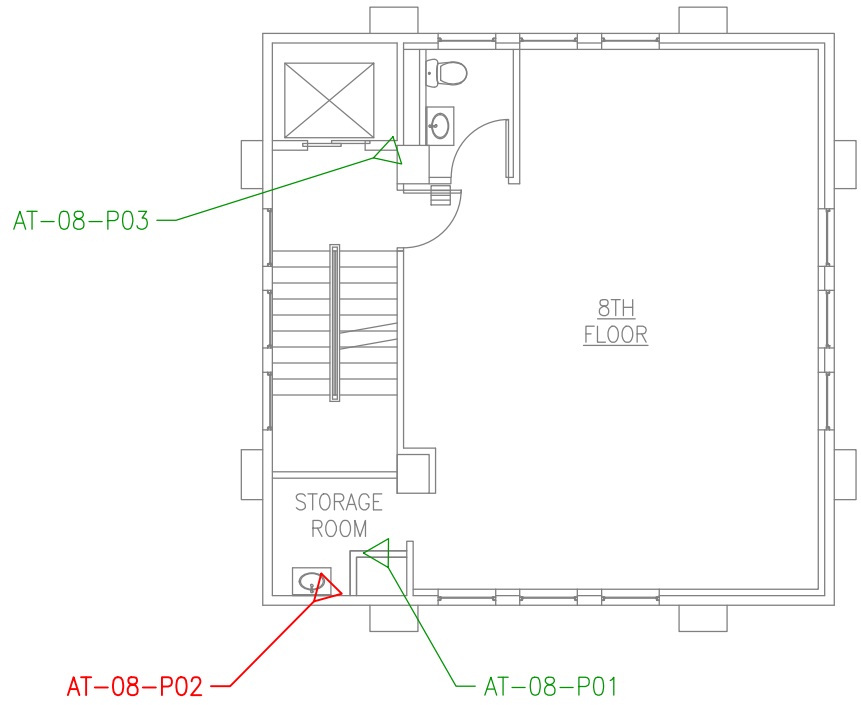
SAMPLE LOCATIONS

NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 8TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 8-A

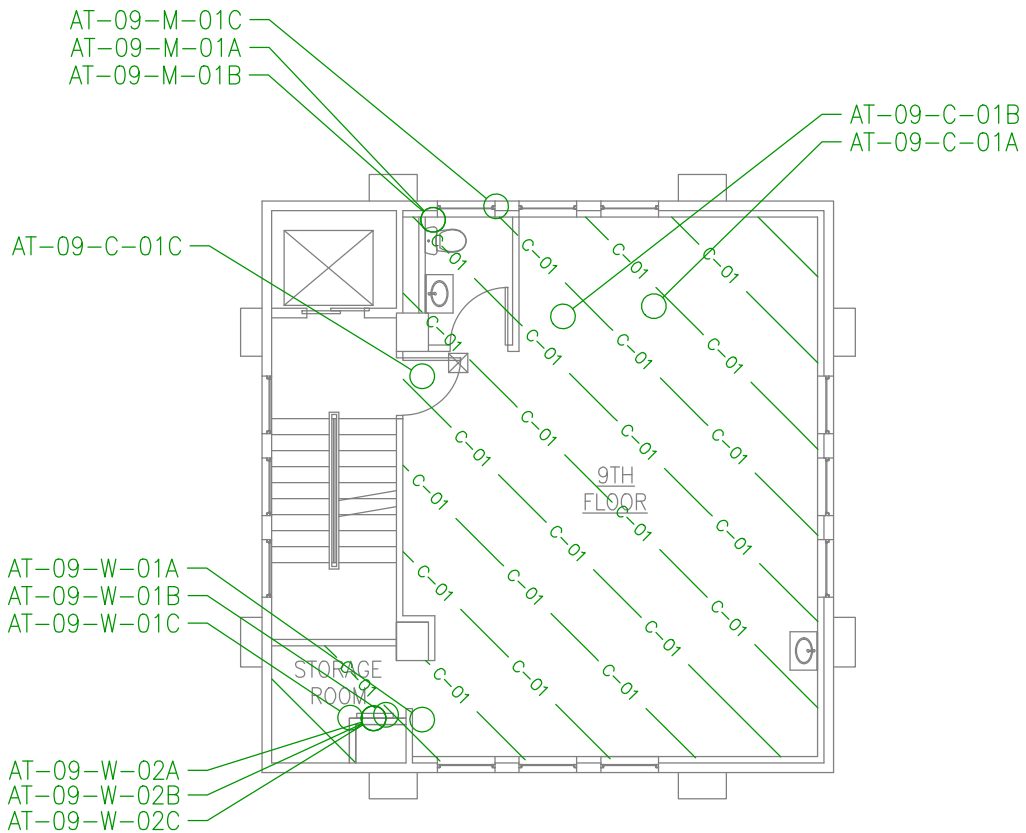
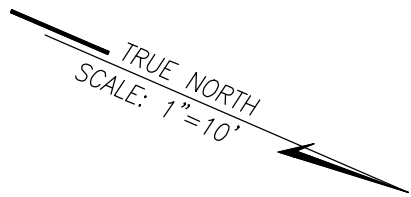
TRUE NORTH
SCALE: 1"=10'

PAINT SAMPLES	
P01	WHITE GYPSUM WALL
P02	WHITE CONCRETE WALL
P03	GRAY PLASTER WALL




SAMPLE LOCATIONS	
△	NEGATIVE LEAD
△	LEAD-CONTAINING PAINT
▲	LEAD-BASED PAINT

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 8TH FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 8-P



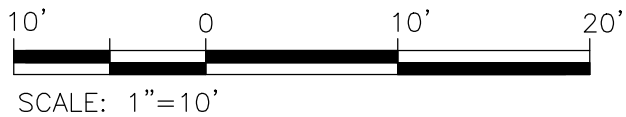
HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.


	C-01	CEILING TILE (2'X4' WHITE, MEDIUM FISSURES AND SMALL HOLES)
N/A	W-01	CERAMIC WALL TILE/GROUT/MORTAR (5" BEIGE/WHITE/WHITE) OVER W-02
N/A	W-02	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	M-01	WINDOW CAULKING (BLACK)

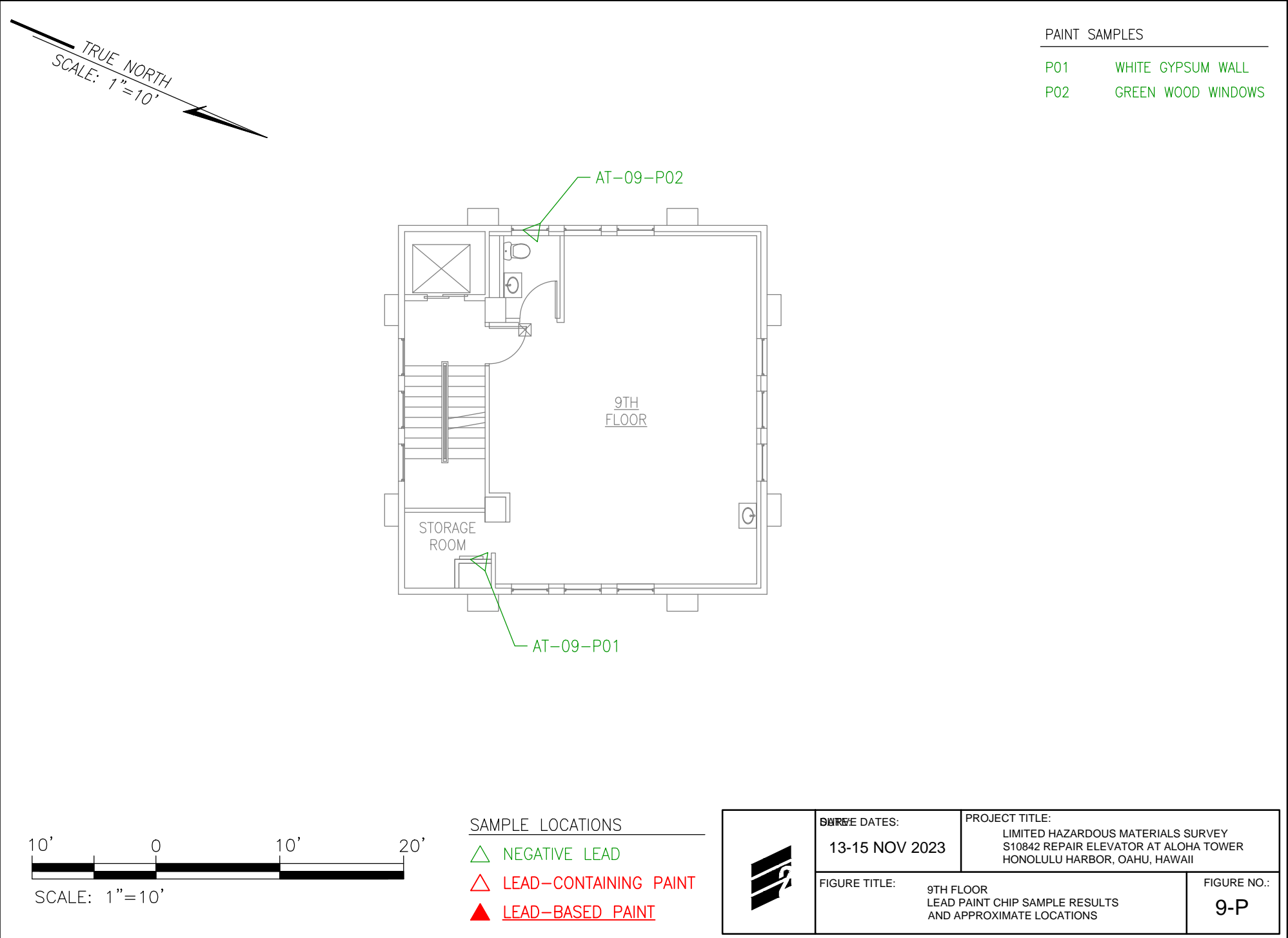
NOTE

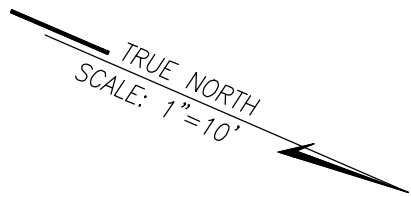
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



SAMPLE LOCATIONS
 NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 9TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 9-A





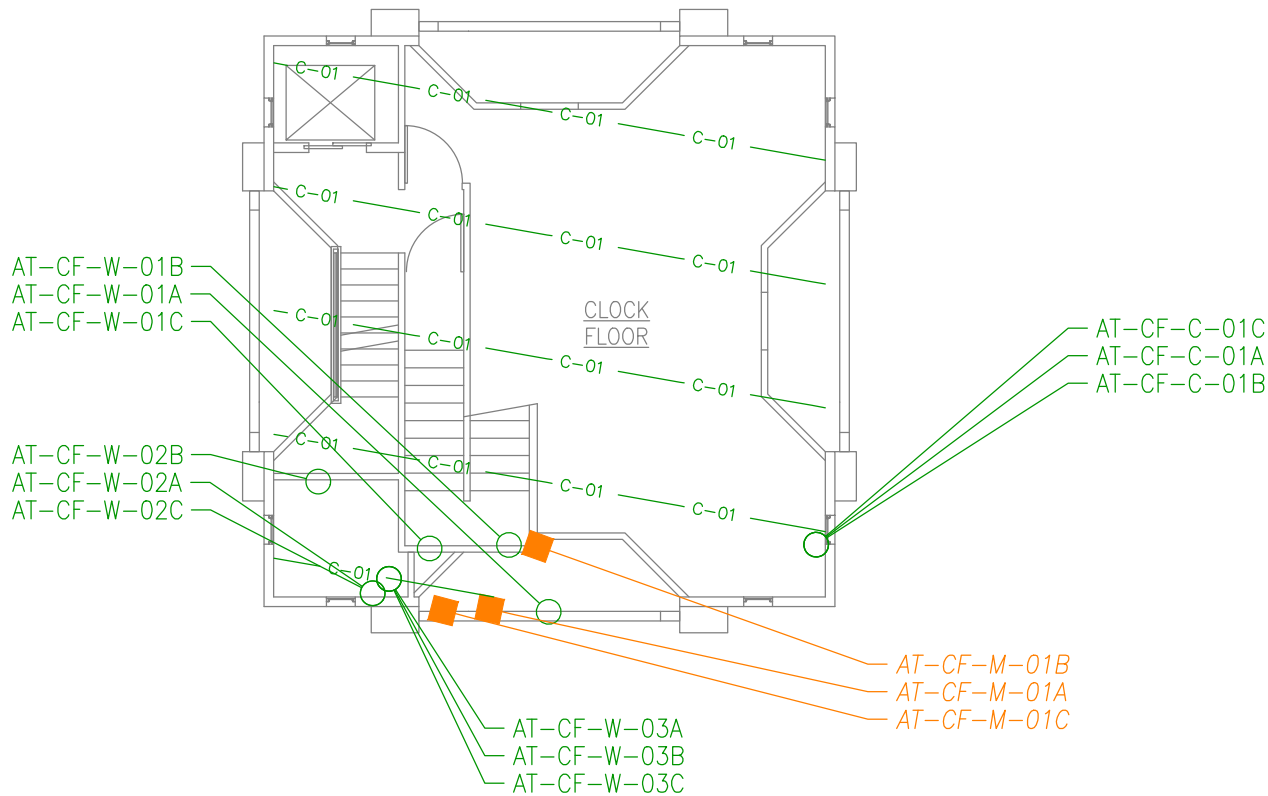
HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

	C-01	CONCRETE CEILING
N/A	W-01	GYPSUM WALLBOARD/JOINT COMPOUND
N/A	W-02	CONCRETE WALLS
N/A	W-03	PLASTER WALLS
N/A	M-01	VINYL BASE/MASTIC (4" GREEN/YELLOW)

NOTE

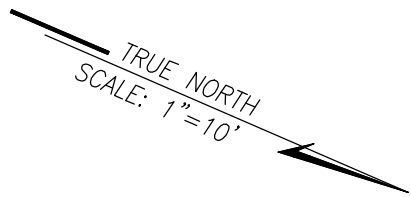
- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.



SAMPLE LOCATIONS

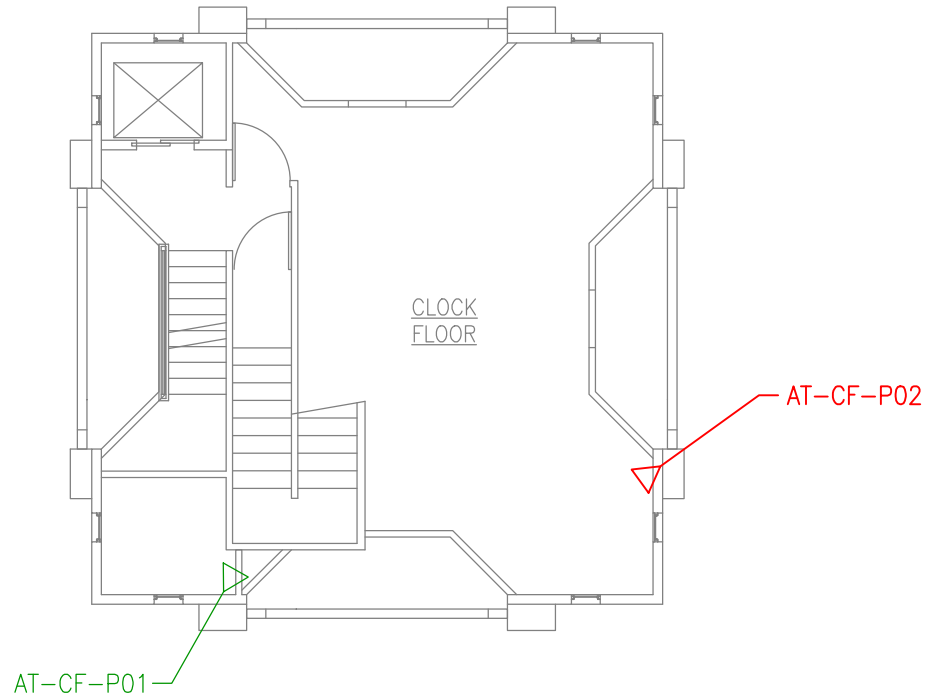
- NEGATIVE ASBESTOS
- TRACE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: CLOCK FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: CF-A



PAINT SAMPLES

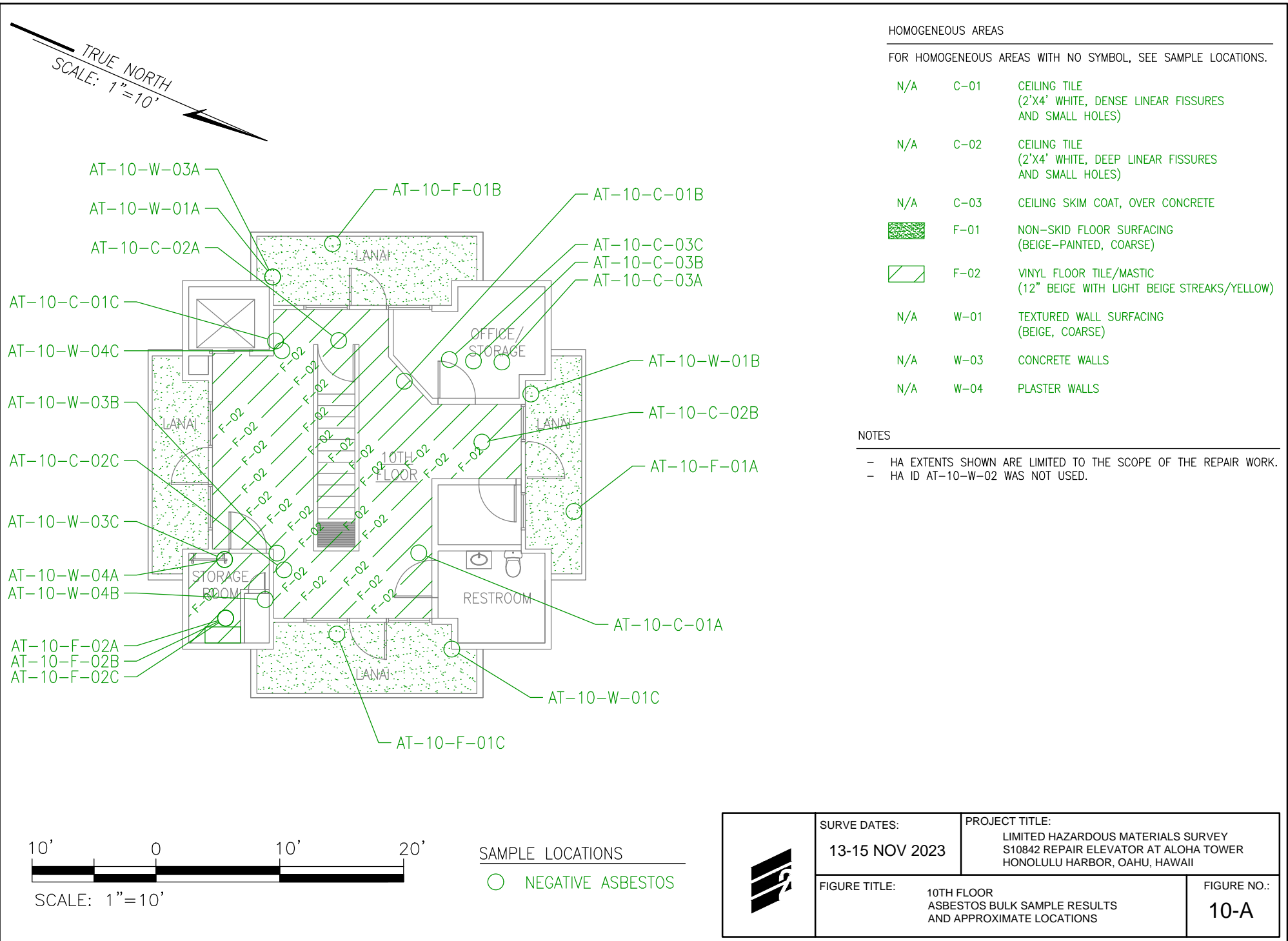
- P01 TAN GYPSUM WALL
- P02 TAN CONCRETE WALL



SAMPLE LOCATIONS

- △ NEGATIVE LEAD
- △ LEAD-CONTAINING PAINT
- ▲ LEAD-BASED PAINT

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: CLOCK FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: CF-P



HOMOGENEOUS AREAS

FOR HOMOGENEOUS AREAS WITH NO SYMBOL, SEE SAMPLE LOCATIONS.

N/A	C-01	CEILING TILE (2'X4' WHITE, DENSE LINEAR FISSURES AND SMALL HOLES)
N/A	C-02	CEILING TILE (2'X4' WHITE, DEEP LINEAR FISSURES AND SMALL HOLES)
N/A	C-03	CEILING SKIM COAT, OVER CONCRETE
	F-01	NON-SKID FLOOR SURFACING (BEIGE-PAINTED, COARSE)
	F-02	VINYL FLOOR TILE/MASTIC (12" BEIGE WITH LIGHT BEIGE STREAKS/YELLOW)
N/A	W-01	TEXTURED WALL SURFACING (BEIGE, COARSE)
N/A	W-03	CONCRETE WALLS
N/A	W-04	PLASTER WALLS

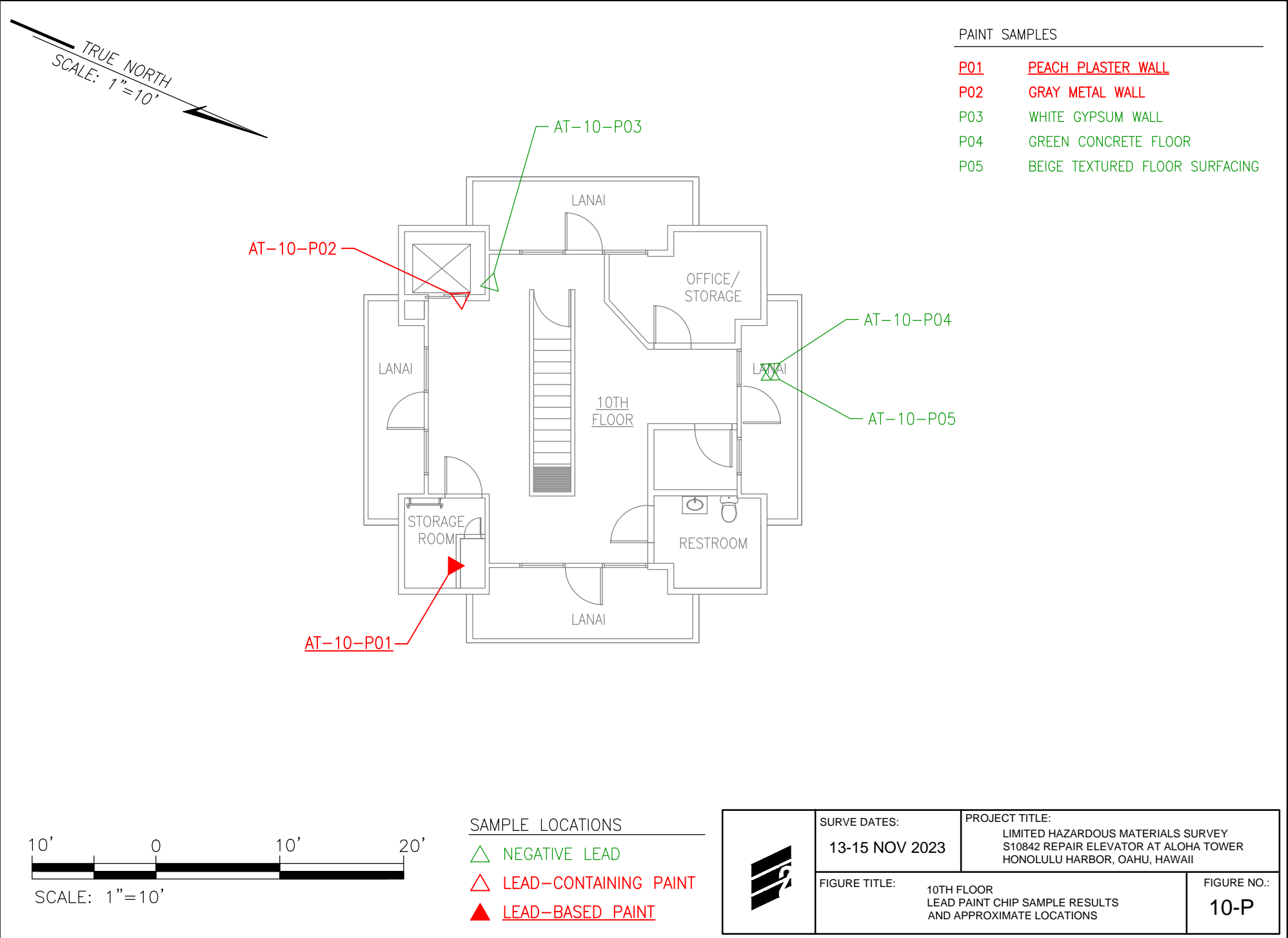
NOTES

- HA EXTENTS SHOWN ARE LIMITED TO THE SCOPE OF THE REPAIR WORK.
- HA ID AT-10-W-02 WAS NOT USED.



SAMPLE LOCATIONS
 ○ NEGATIVE ASBESTOS

	SURVE DATES: 13-15 NOV 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
	FIGURE TITLE: 10TH FLOOR ASBESTOS BULK SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.: 10-A



PAINT SAMPLES

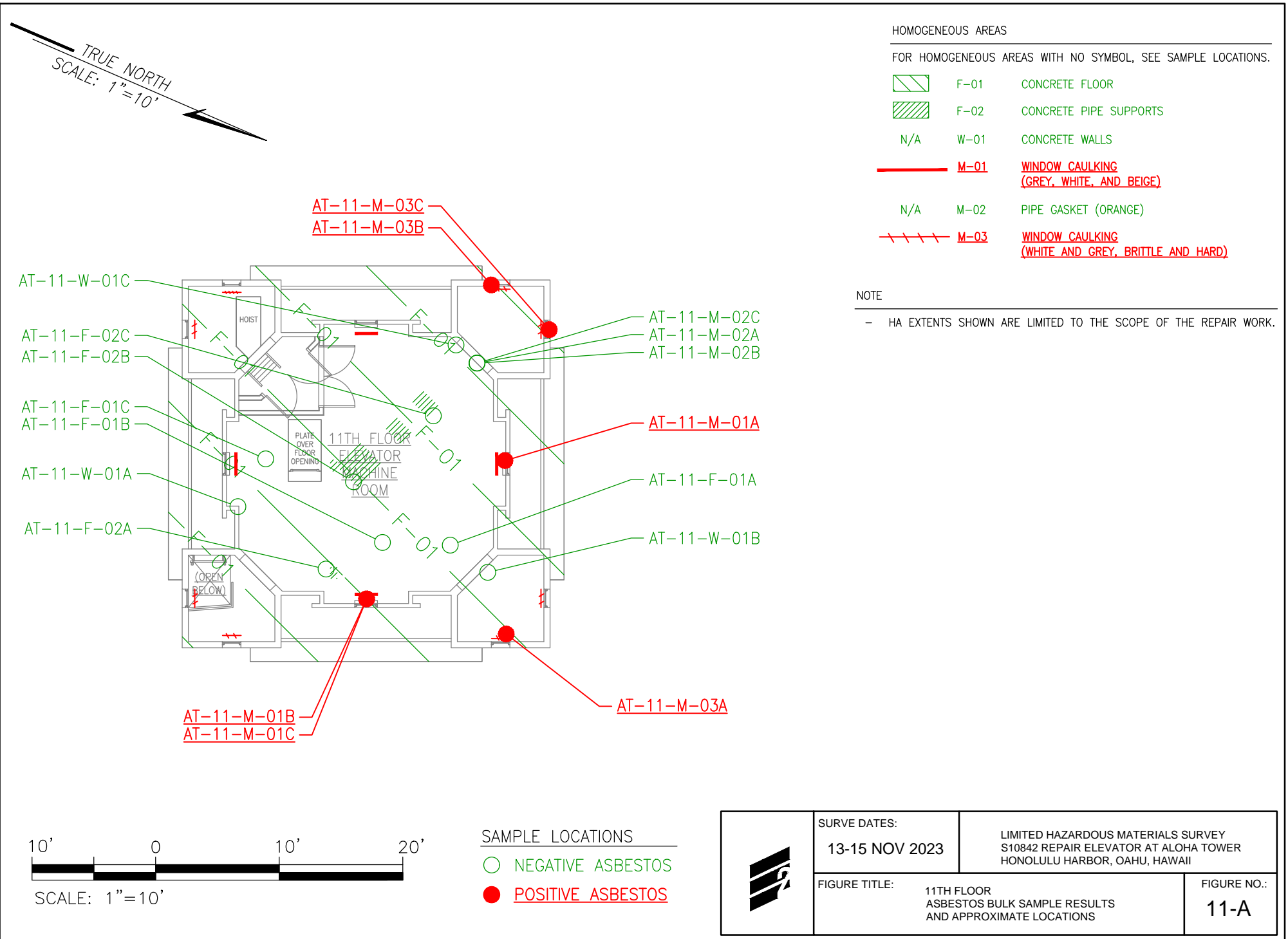
- P01 PEACH PLASTER WALL
- P02 GRAY METAL WALL
- P03 WHITE GYPSUM WALL
- P04 GREEN CONCRETE FLOOR
- P05 BEIGE TEXTURED FLOOR SURFACING

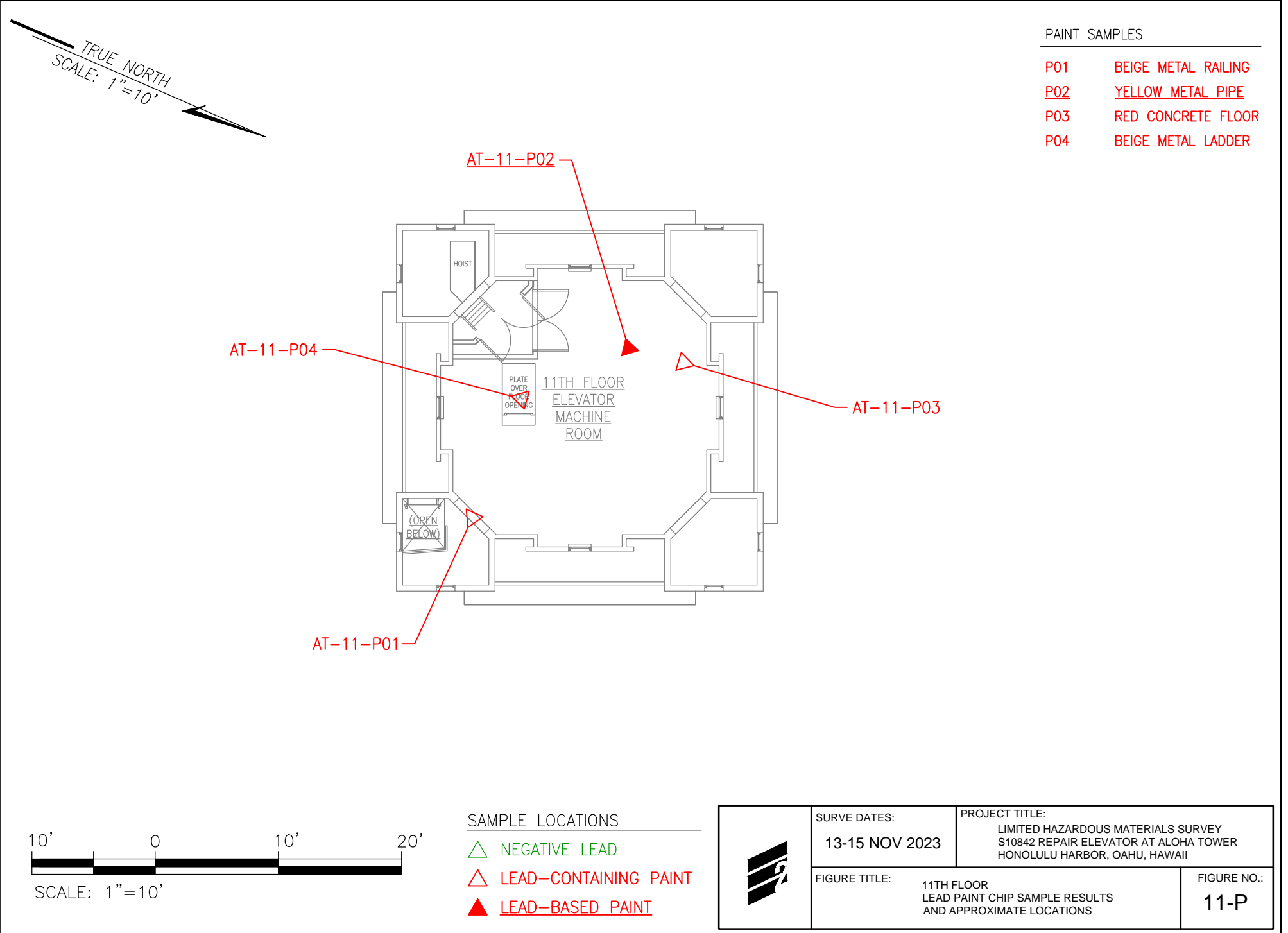


SAMPLE LOCATIONS

- △ NEGATIVE LEAD
- △ LEAD-CONTAINING PAINT
- ▲ LEAD-BASED PAINT

	SURVE DATES:	PROJECT TITLE:
	13-15 NOV 2023	LIMITED HAZARDOUS MATERIALS SURVEY S10842 REPAIR ELEVATOR AT ALOHA TOWER HONOLULU HARBOR, OAHU, HAWAII
FIGURE TITLE:	10TH FLOOR LEAD PAINT CHIP SAMPLE RESULTS AND APPROXIMATE LOCATIONS	FIGURE NO.:
		10-P





APPENDIX C

Photographs

Asbestos Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

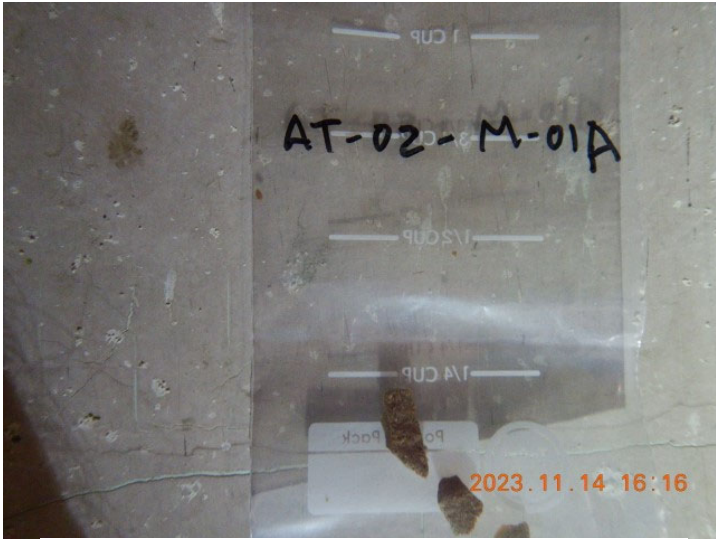


Photo 1 - AT-02-M-01A (Close-Up)
[GI\DSCN0679.JPG]



Photo 2 - AT-02-M-01A (Panoramic)
[GI\DSCN0682.JPG]

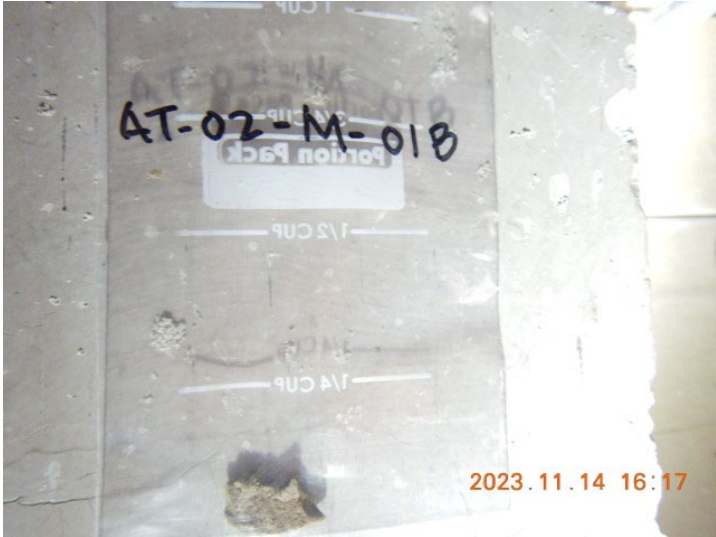


Photo 3 - AT-02-M-01B (Close-Up)
[GI\DSCN0680.JPG]



Photo 4 - AT-02-M-01B (Panoramic)
[GI\DSCN0683.JPG]



Photo 5 - AT-02-M-01C (Close-Up)
[GI\DSCN0681.JPG]

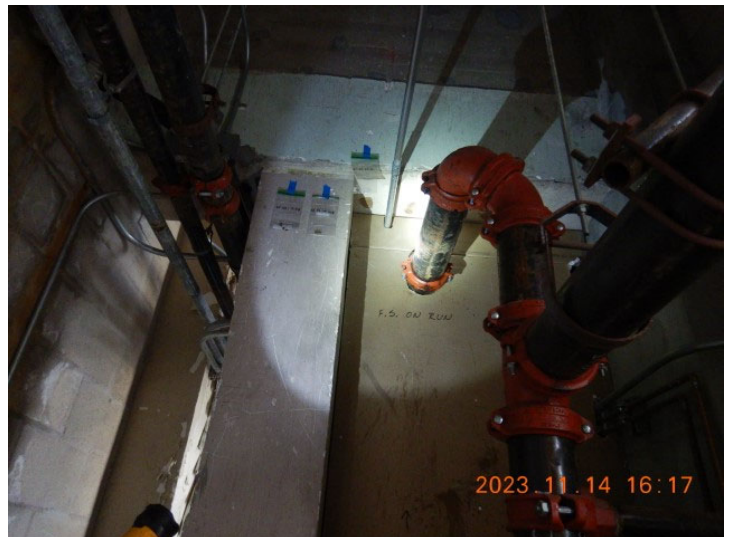


Photo 6 - AT-02-M-01C (Panoramic)
[GI\DSCN0684.JPG]

Asbestos Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 7 - AT-CF-M-01A (Close-Up)
[AL\DSCN2121.JPG]



Photo 8 - AT-CF-M-01ABC (Panoramic)
[AL\DSCN2125.JPG]



Photo 9 - AT-CF-M-01B (Close-Up)
[AL\DSCN2122.JPG]



Photo 10 - AT-CF-M-01C (Close-Up)
[AL\DSCN2123.JPG]

Asbestos Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 11 - AT-11-M-01A (Close-Up)
[JV\JVAL1534.JPG]



Photo 12 - AT-11-M-01A (Panoramic)
[JV\JVAL1535.JPG]



Photo 13 - AT-11-M-01B (Close-Up)
[JV\JVAL1536.JPG]



Photo 14 - AT-11-M-01BC (Panoramic)
[JV\JVAL1538.JPG]

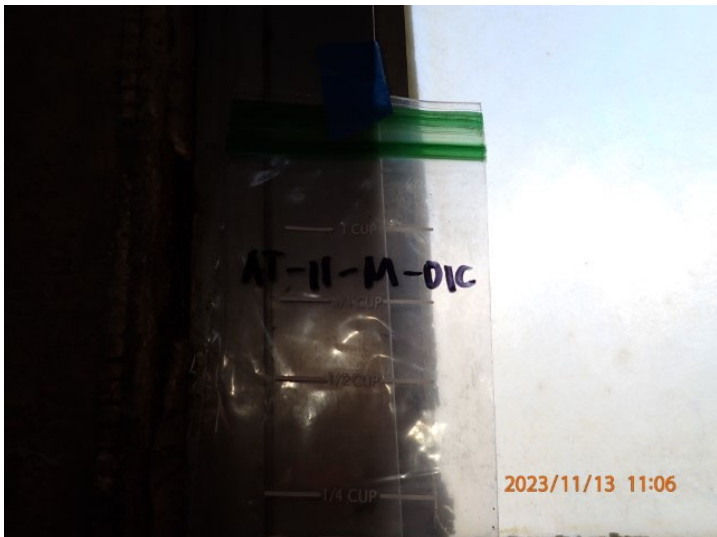


Photo 15 - AT-11-M-01C (Close-Up)
[JV\JVAL1537.JPG]

Asbestos Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 16 - AT-11-M-03A (Close-Up)
[AL\DSCN2084.JPG]



Photo 17 - AT-11-M-03A (Panoramic)
[AL\DSCN2087.JPG]



Photo 18 - AT-11-M-03B (Close-Up)
[AL\DSCN2088.JPG]



Photo 19 - AT-11-M-03B (Panoramic)
[AL\DSCN2089.JPG]



Photo 20 - AT-11-M-03C (Close-Up)
[AL\DSCN2090.JPG]



Photo 21 - AT-11-M-03C (Panoramic)
[AL\DSCN2091.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 22 - AT-GF-P01 (Close-Up)
[JV\JVAL1645.JPG]



Photo 23 - AT-GF-P01 (Panoramic)
[JV\JVAL1646.JPG]

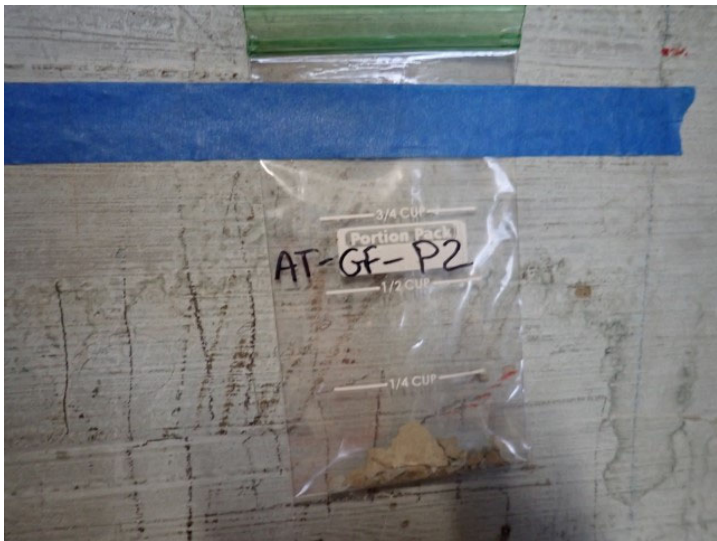


Photo 24 - AT-GF-P02 (Close-Up)
[EA\EA162596.JPG]



Photo 25 - AT-GF-P02 (Panoramic)
[EA\EA162597.JPG]



Photo 26 - AT-GF-P03 (Close-Up)
[EA\EA162598.JPG]



Photo 27 - AT-GF-P03 (Panoramic)
[EA\EA162599.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

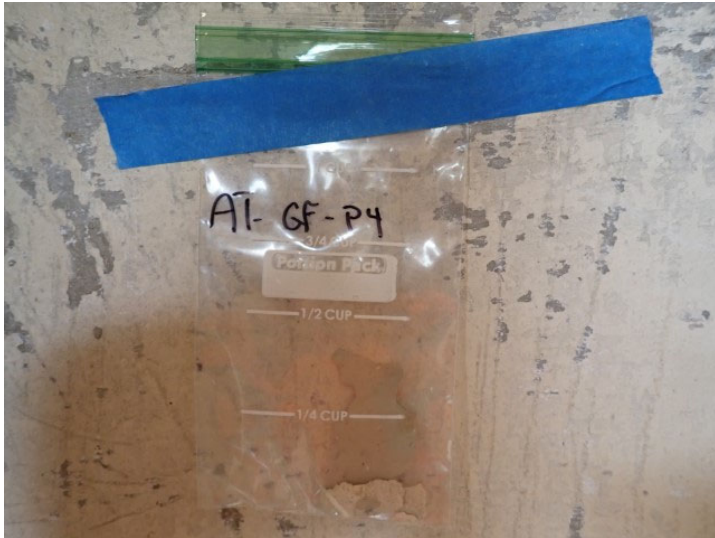


Photo 28 - AT-GF-P04 (Close-Up)
[EA\EA162600.JPG]



Photo 29 - AT-GF-P04 (Panoramic)
[EA\EA162601.JPG]



Photo 30 - AT-GF-P05 (Close-Up)
[EA\EA162602.JPG]



Photo 31 - AT-GF-P05 (Panoramic)
[EA\EA162603.JPG]



Photo 32 - AT-GF-P06 (Close-Up)
[EA\EA162604.JPG]

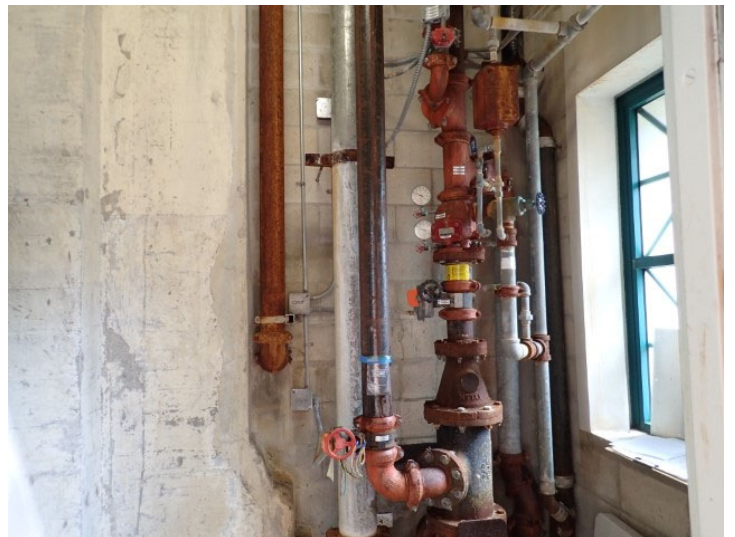


Photo 33 - AT-GF-P06 (Panoramic)
[EA\EA162605.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

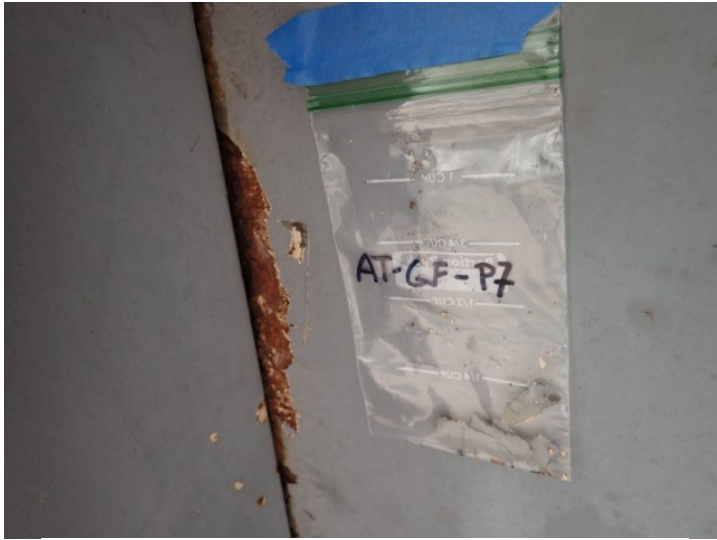


Photo 34 - AT-GF-P07 (Close-Up)
[EA\EA162614.JPG]



Photo 35 - AT-GF-P07 (Panoramic)
[EA\EA162615.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

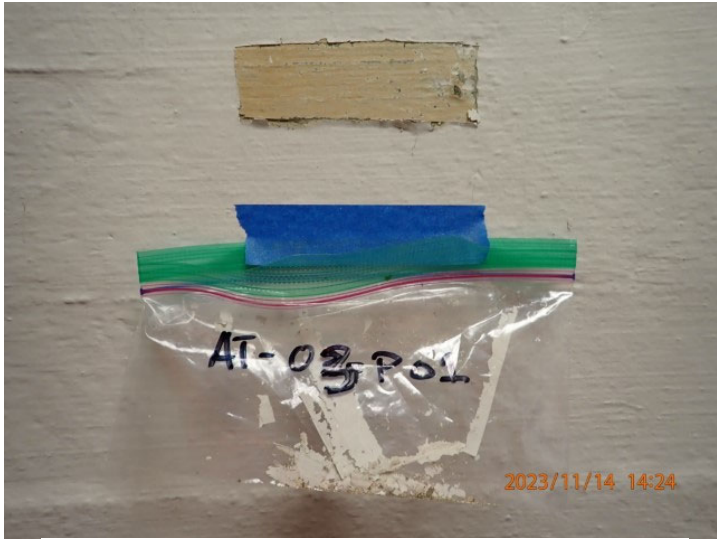


Photo 36 - AT-03-P01 (Close-Up)
[JV\JVAL1612.JPG]



Photo 37 - AT-03-P01 (Panoramic)
[JV\JVAL1613.JPG]



Photo 38 - AT-03-P02 (Close-Up)
[JV\JVAL1610.JPG]



Photo 39 - AT-03-P02 (Panoramic)
[JV\JVAL1611.JPG]



Photo 40 - AT-03-P03 (Close-Up)
[JV\JVAL1608.JPG]



Photo 41 - AT-03-P03 (Panoramic)
[JV\JVAL1609.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

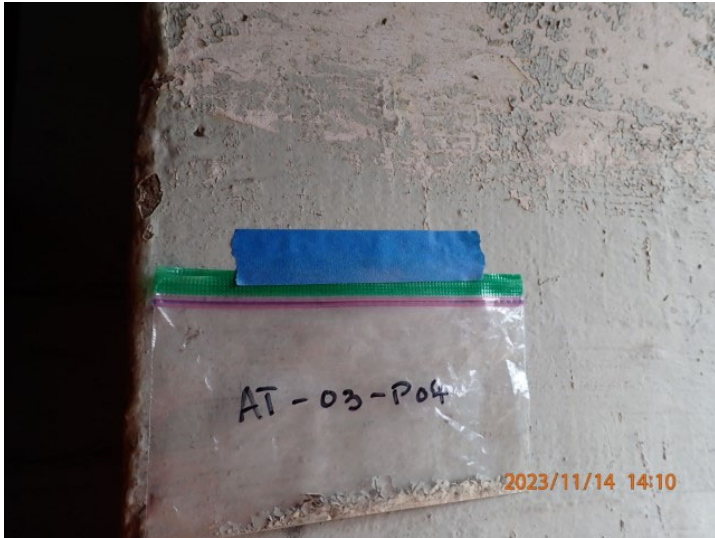


Photo 42 - AT-03-P04 (Close-Up)
[JV\JVAL1606.JPG]



Photo 43 - AT-03-P04 (Panoramic)
[JV\JVAL1607.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 44 - AT-04-P01 (Close-Up)
[AL\DSCN2108.JPG]



Photo 45 - AT-04-P01 (Panoramic)
[AL\DSCN2111.JPG]

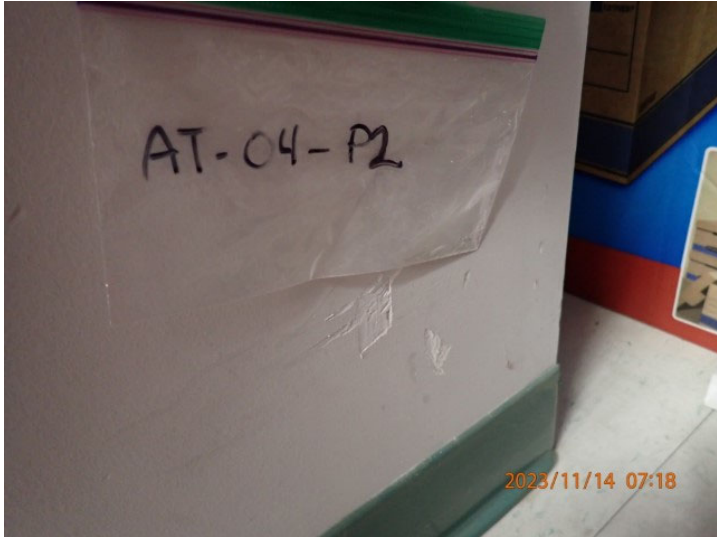


Photo 46 - AT-04-P02 (Close-Up)
[EA\EA142529.JPG]



Photo 47 - AT-04-P02 (Panoramic)
[EA\EA142530.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

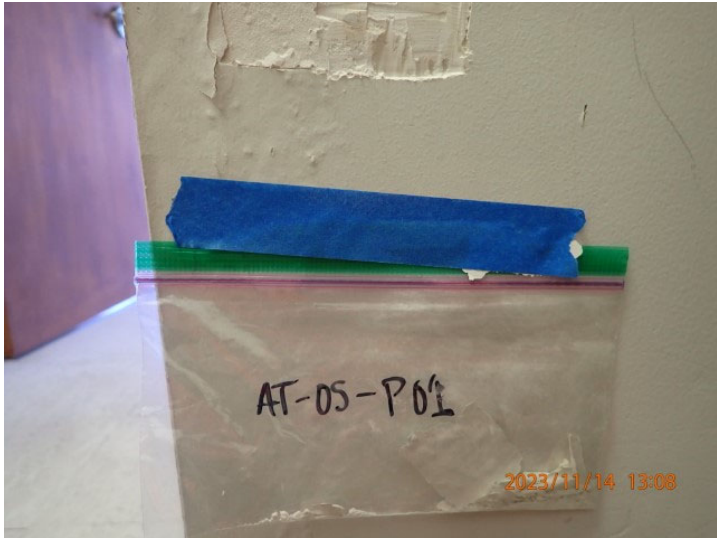


Photo 48 - AT-05-P01 (Close-Up)
[JV\JVAL1595.JPG]



Photo 49 - AT-05-P01 (Panoramic)
[JV\JVAL1596.JPG]

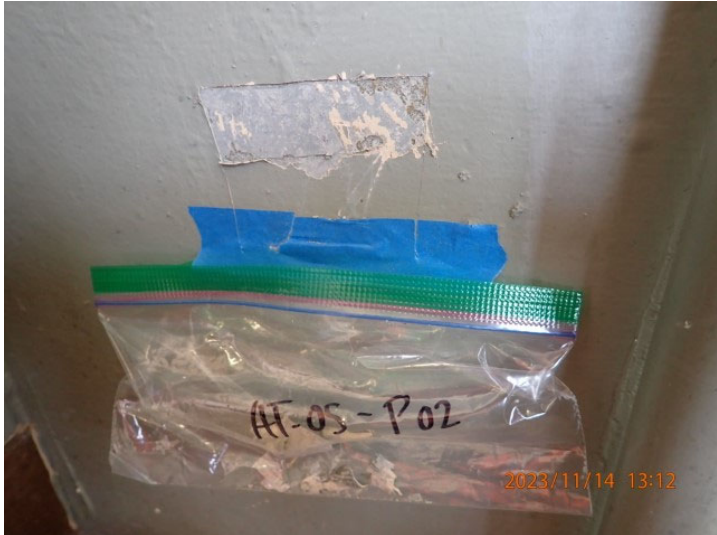


Photo 50 - AT-05-P02 (Close-Up)
[JV\JVAL1597.JPG]



Photo 51 - AT-05-P02 (Panoramic)
[JV\JVAL1598.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

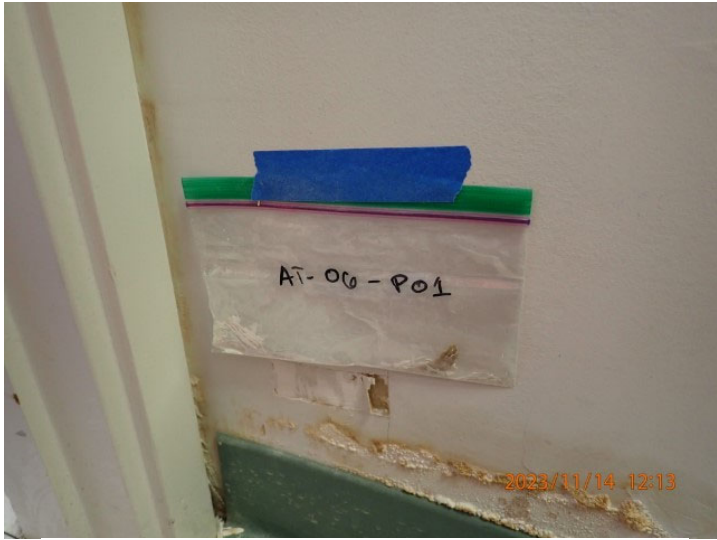


Photo 52 - AT-06-P01 (Close-Up)
[JV\JVAL1592.JPG]



Photo 53 - AT-06-P01 (Panoramic)
[JV\JVAL1593.JPG]



Photo 54 - AT-06-P02 (Close-Up)
[JV\JVAL1590.JPG]



Photo 55 - AT-06-P02 (Panoramic)
[JV\JVAL1591.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

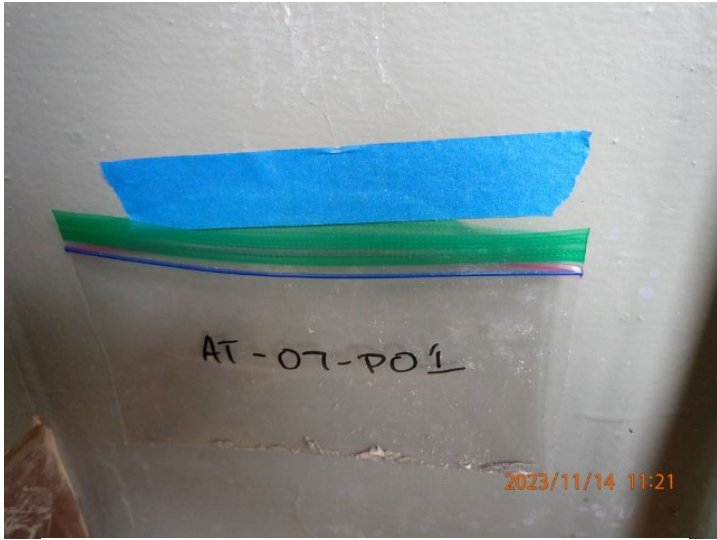


Photo 56 - AT-07-P01 (Close-Up)
[JV\JVAL1584.JPG]



Photo 57 - AT-07-P01 (Panoramic)
[JV\JVAL1585.JPG]

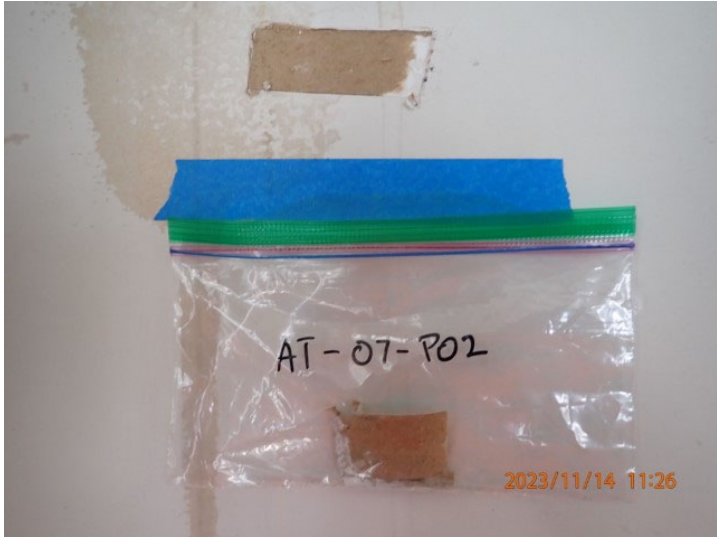


Photo 58 - AT-07-P02 (Close-Up)
[JV\JVAL1586.JPG]



Photo 59 - AT-07-P02 (Panoramic)
[JV\JVAL1587.JPG]



Photo 60 - AT-07-P03 (Close-Up)
[JV\JVAL1582.JPG]



Photo 61 - AT-07-P03 (Panoramic)
[JV\JVAL1583.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

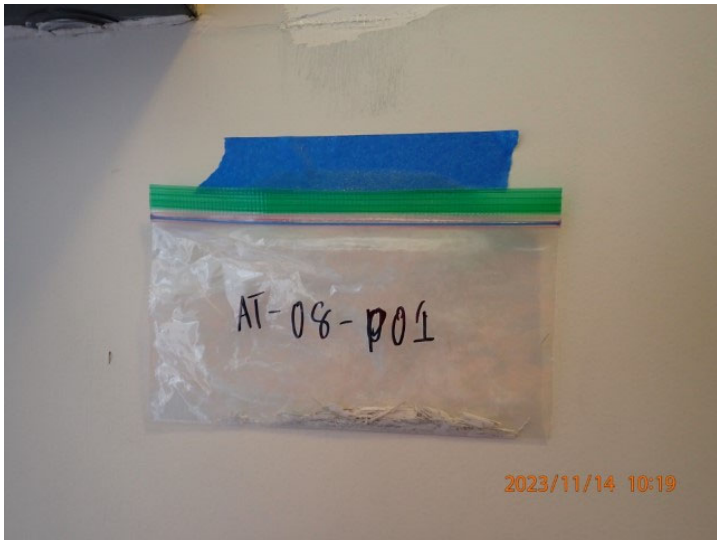


Photo 62 - AT-08-P01 (Close-Up)
[JV\JVAL1574.JPG]



Photo 63 - AT-08-P01 (Panoramic)
[JV\JVAL1575.JPG]

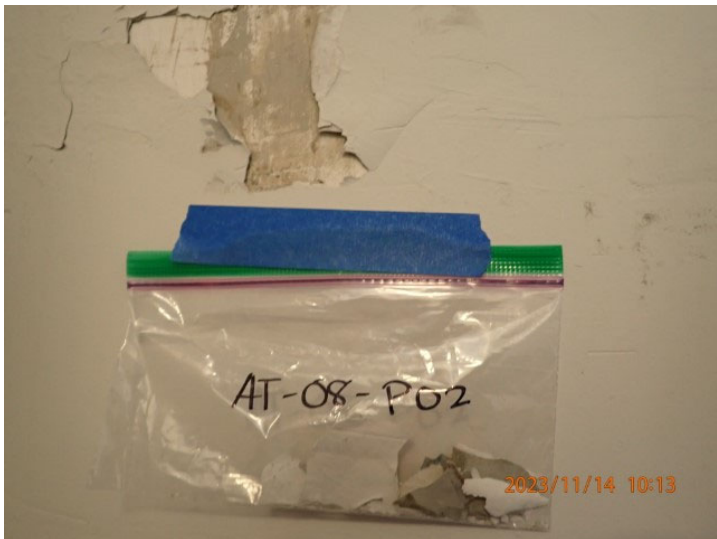


Photo 64 - AT-08-P02 (Close-Up)
[JV\JVAL1572.JPG]



Photo 65 - AT-08-P02 (Panoramic)
[JV\JVAL1573.JPG]

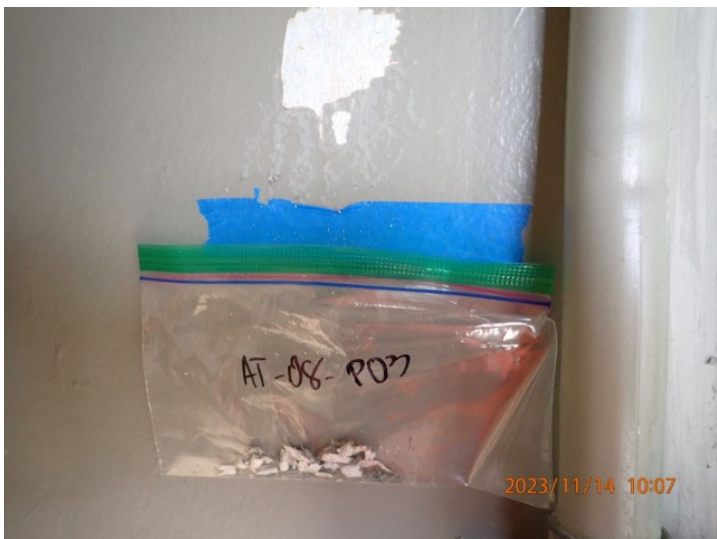


Photo 66 - AT-08-P03 (Close-Up)
[JV\JVAL1570.JPG]



Photo 67 - AT-08-P03 (Panoramic)
[JV\JVAL1571.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

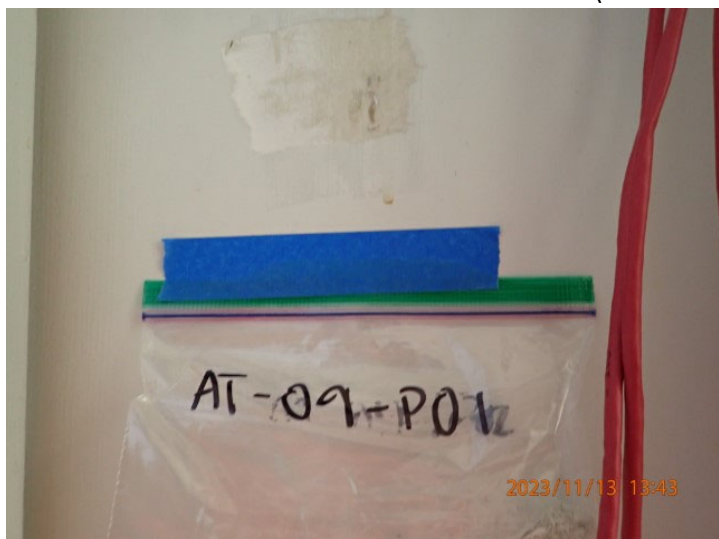


Photo 68 - AT-09-P01 (Close-Up)
[JV\JVAL1558.JPG]

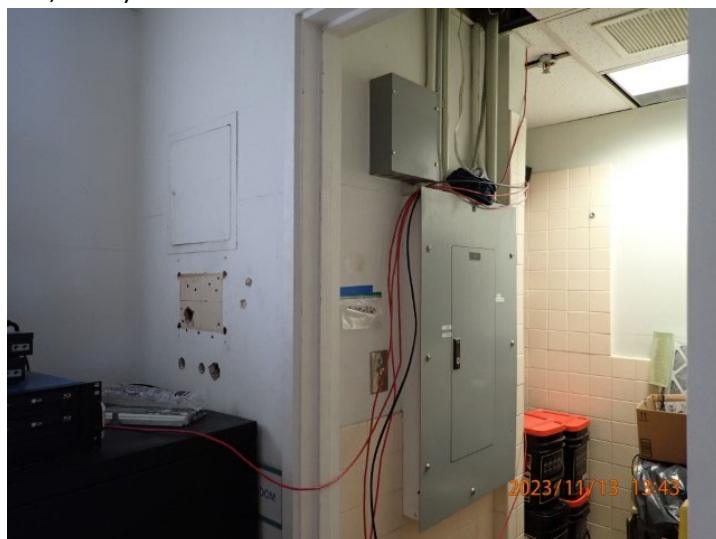


Photo 69 - AT-09-P01 (Panoramic)
[JV\JVAL1559.JPG]

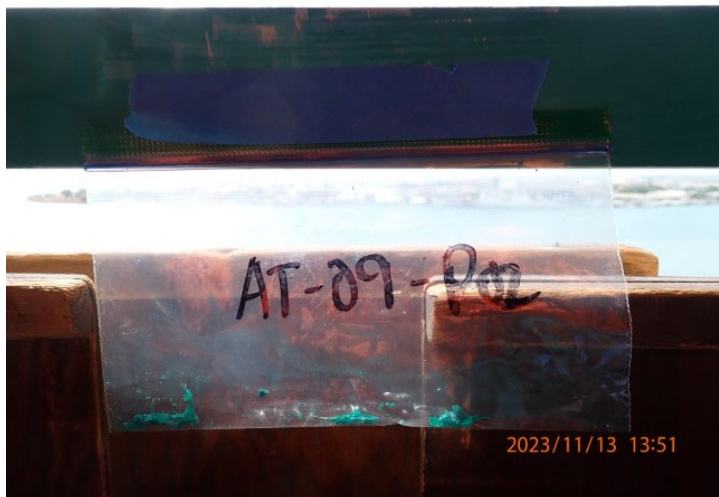


Photo 70 - AT-09-P02 (Close-Up)
[JV\JVAL1560.JPG]



Photo 71 - AT-09-P02 (Panoramic)
[JV\JVAL1561.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 72 - AT-CF-P01 (Close-Up)
[EA\EA142535.JPG]



Photo 73 - AT-CF-P01 (Panoramic)
[EA\EA142536.JPG]



Photo 74 - AT-CF-P02 (Close-Up)
[EA\EA142531.JPG]



Photo 75 - AT-CF-P02 (Panoramic)
[EA\EA142532.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

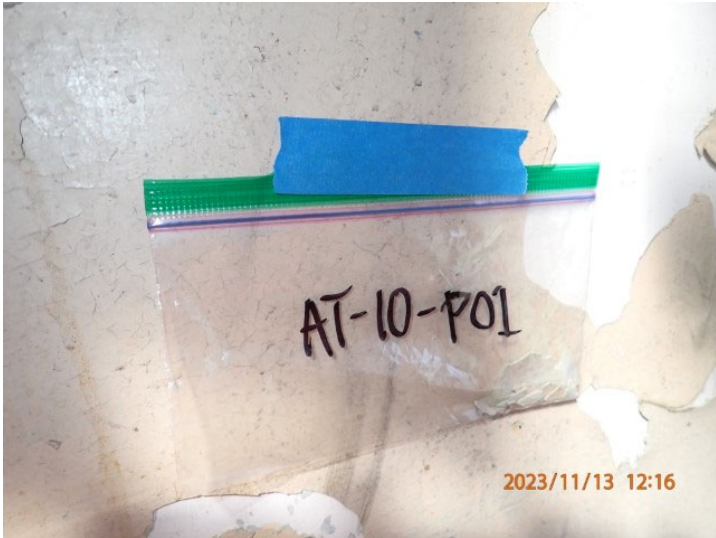


Photo 76 - AT-10-P01 (Close-Up)
[JV\JVAL1551.JPG]



Photo 77 - AT-10-P01 (Panoramic)
[JV\JVAL1552.JPG]

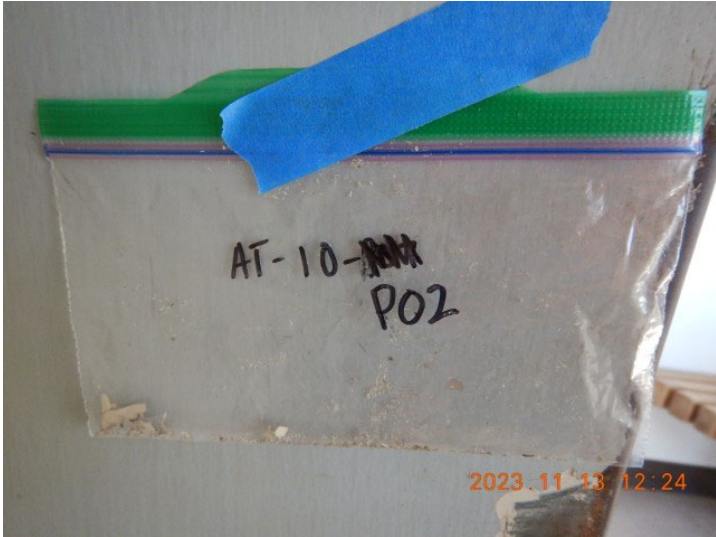


Photo 78 - AT-10-P02 (Close-Up)
[GI\DSCN0592.JPG]



Photo 79 - AT-10-P02 (Panoramic)
[GI\DSCN0593.JPG]



Photo 80 - AT-10-P03 (Close-Up)
[GI\DSCN0594.JPG]



Photo 81 - AT-10-P03 (Panoramic)
[GI\DSCN0595.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)

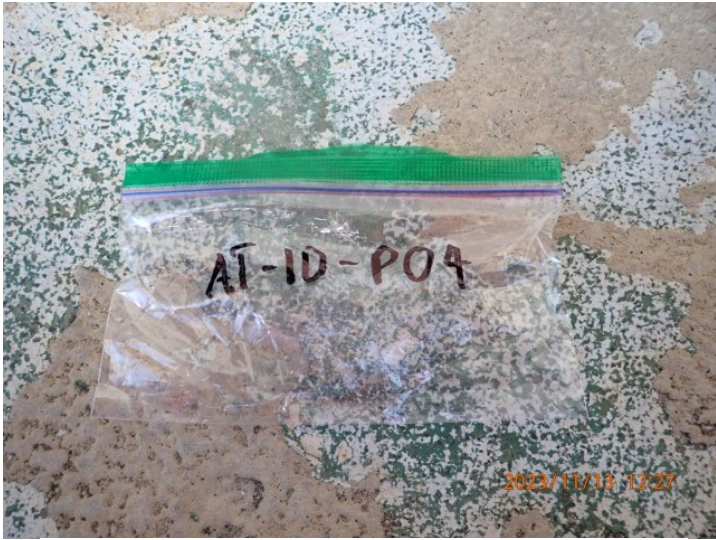


Photo 82 - AT-10-P04 (Close-Up)
[JV\JVAL1553.JPG]



Photo 83 - AT-10-P04 (Panoramic)
[JV\JVAL1554.JPG]

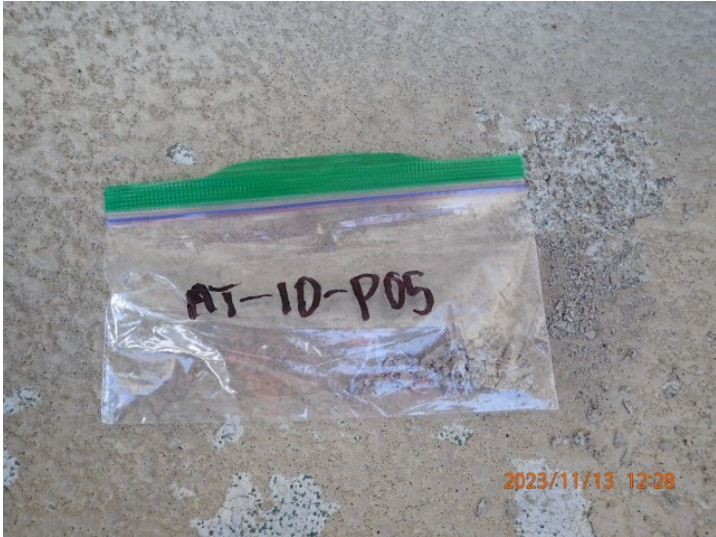


Photo 84 - AT-10-P05 (Close-Up)
[JV\JVAL1555.JPG]



Photo 85 - AT-10-P05 (Panoramic)
[JV\JVAL1557.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 86 - AT-11-P01 (Close-Up)
[JV\JVAL1518.JPG]



Photo 87 - AT-11-P01 (Panoramic)
[JV\JVAL1519.JPG]

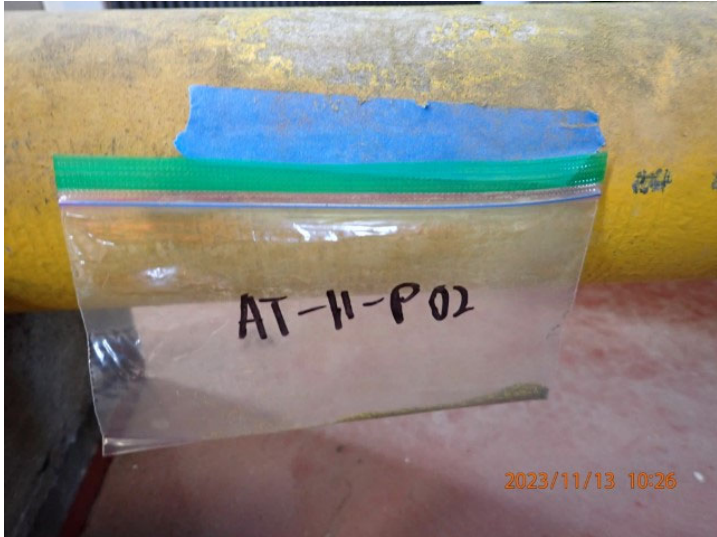


Photo 88 - AT-11-P02 (Close-Up)
[JV\JVAL1520.JPG]



Photo 89 - AT-11-P02 (Panoramic)
[JV\JVAL1521.JPG]



Photo 90 - AT-11-P03 (Close-Up)
[JV\JVAL1522.JPG]



Photo 91 - AT-11-P03 (Panoramic)
[JV\JVAL1523.JPG]

Paint Chip Samples
Aloha Tower, Honolulu Harbor, Oahu, Hawaii
(November 13 - 15, 2023)



Photo 92 - AT-11-P04 (Close-Up)
[JV\JVAL1524.JPG]



Photo 93 - AT-11-P04 (Panoramic)
[JV\JVAL1525.JPG]

APPENDIX D
Laboratory Reports



Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-1

Element Environmental, LLC
Bernice Baleté
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B354488
Date Received: 12/04/23
Date Analyzed: 12/14/23
Date Printed: 12/14/23
First Reported: 12/14/23

Job ID/Site: 230088 & 230089; Aloha Tower; Honolulu, Oahu, Hawaii

SGSFL Job ID: L1617
Total Samples Submitted: 207
Total Samples Analyzed: 207

Date(s) Collected: 11/13/2023, 11/14/2023, 11/15/2023

Table with 8 columns: Sample ID, Lab Number, Asbestos Type, Percent in Layer, Asbestos Type, Percent in Layer, Asbestos Type, Percent in Layer. Rows include AT-GF-C-01A, AT-GF-C-01B, AT-GF-C-01C, AT-GF-W-01A, AT-GF-W-01B, AT-GF-W-01C, AT-GF-W-01A, AT-GF-W-01B, AT-GF-W-01C.

Client Name: Element Environmental, LLC
Report Number: B354488
Date Printed: 12/14/23

Table with 8 columns: Sample ID, Lab Number, Asbestos Type, Percent in Layer, Asbestos Type, Percent in Layer, Asbestos Type, Percent in Layer. Rows include AT-GF-W-02A, AT-GF-W-02B, AT-GF-W-02C, AT-GF-W-03A, AT-GF-W-03B, AT-GF-W-03C, AT-GF-W-04A.

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-GF-W-04B	51713205						
Layer: Grey Cementitious Material			ND				
Layer: Grey Grout			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-GF-W-04C	51713206						
Layer: Grey Cementitious Material			ND				
Layer: Grey Grout			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-GF-M-01A	51713207						
Layer: Beige Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-GF-M-01B	51713208						
Layer: Beige Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-GF-M-01C	51713209						
Layer: Grey Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-C-01A	51713210						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (5 %) Fibrous Glass (Trace)							
AT-02-C-01B	51713211						
Layer: White Drywall			ND				
Layer: Off-White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (5 %) Fibrous Glass (Trace)							
AT-02-C-01C	51713212						
Layer: White Drywall			ND				
Layer: Grey Plaster			ND				
Layer: Off-White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (5 %) Fibrous Glass (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-02-F-01A	51713213						
Layer: Blue Tile			ND				
Layer: Black Mastie with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-F-01B	51713214						
Layer: Blue Tile			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-F-01C	51713215						
Layer: Blue Tile			ND				
Layer: Tan Mastie			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-F-02A	51713216						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-F-02B	51713217						
Layer: Grey Cementitious Material			ND				
Layer: Beige Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-F-02C	51713218						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-01A	51713219						
Layer: White Drywall			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-02-W-01B	51713220						
Layer: White Drywall			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-02-W-01C	51713221						
Layer: White Drywall			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-02-W-02A	51713222						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-02-W-02B	51713223		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-02C	51713224		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-03A	51713225		ND				
Layer: White Non-Fibrous Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-03B	51713226		ND				
Layer: White Non-Fibrous Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-03C	51713227		ND				
Layer: White Non-Fibrous Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-04A	51713228		ND				
Layer: Grey Grout							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-04B	51713229		ND				
Layer: Grey Grout							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-W-04C	51713230		ND				
Layer: Grey Grout							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-M-01A	51713231		ND				
Layer: Brown Mastic							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-02-M-01B	51713232		ND				
Layer: Brown Mastic							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-02-M-01C	51713233		ND				
Layer: Brown Mastic							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-C-01A	51713234		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-C-01B	51713235		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-C-01C	51713236		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-01A	51713237		ND				
Layer: White Drywall							
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (Trace)							
AT-03-W-01B	51713238		ND				
Layer: White Drywall							
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (Trace)							
AT-03-W-01C	51713239		ND				
Layer: White Drywall							
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (20 %) Fibrous Glass (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-03-W-02A	51713240						
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-02B	51713241						
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Layer: Beige Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-02C	51713242						
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Layer: Beige Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-03A	51713243						
Layer: Beige Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-03B	51713244						
Layer: Grey Cementitious Material			ND				
Layer: Beige Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-03C	51713245						
Layer: Grey Cementitious Material			ND				
Layer: Beige Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-04A	51713246						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-W-04B	51713247						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-03-W-04C	51713248						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-T-01A	51713249						
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
AT-03-T-01B	51713250						
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
AT-03-T-01C	51713251						
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
AT-03-M-01A	51713252						
Layer: Green Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-M-01B	51713253						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-03-M-01C	51713254						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-F-01A	51713255						
Layer: White Tile			ND				
Layer: Tan Mastic			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-F-01B	51713256						
Layer: White Tile			ND				
Layer: Tan Mastic			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-04-F-01C	51713257						
Layer: White Tile			ND				
Layer: Tan Mastic			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-F-02A	51713258						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-F-02B	51713259						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-F-02C	51713260						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-W-01A	51713261						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-W-01B	51713262						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-W-01C	51713263						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-04-W-02A	51713264						
Layer: Beige Non-Fibrous Material			ND				
Layer: Tan Fibrous Material with Adhesive			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (50 %)							
AT-04-W-02B	51713265						
Layer: Beige Non-Fibrous Material			ND				
Layer: Tan Fibrous Material with Adhesive			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (50 %)							
AT-04-W-02C	51713266						
Layer: Beige Non-Fibrous Material			ND				
Layer: Tan Fibrous Material with Adhesive			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (50 %)							
AT-04-W-03A	51713267						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %) Fibrous Glass (Trace)							
AT-04-W-03B	51713268						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %) Fibrous Glass (Trace)							
AT-04-W-03C	51713269						
Layer: White Drywall			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %) Fibrous Glass (Trace)							
AT-04-M-01A	51713270						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-04-M-01B	51713271						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-04-M-01C	51713272						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint with Debris			ND				
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %)							
AT-05-W-01A	51713273						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-05-W-01B	51713274						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-05-W-01C	51713275						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (7 %) Fibrous Glass (Trace)							
AT-05-W-02A	51713276						
Layer: Beige Plaster			ND				
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-05-W-02B	51713277						
Layer: Beige Plaster			ND				
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-05-W-02C	51713278						
Layer: Beige Plaster			ND				
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-05-M-01A	51713279						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-05-M-01B	51713280						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-05-M-01C	51713281						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Off-White Texture			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-C-01A	51713282						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-C-01B	51713283						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-C-01C	51713284						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-06-W-01A	51713285						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-06-W-01B	51713286						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-06-W-01C	51713287						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-06-W-02A	51713288						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-W-02B	51713289						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-W-02C	51713290						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-M-01A	51713291						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Off-White Texture			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-06-M-01B	51713292						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-06-M-01C	51713293						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Off-White Texture			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-C-01A	51713294						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-C-01B	51713295						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-C-01C	51713296						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-C-02A	51713297						
Layer: Brown Mastic			ND				
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %)	Fibrous Glass (45 %)						
AT-07-C-02B	51713298						
Layer: Brown Mastic			ND				
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (25 %)	Fibrous Glass (35 %)						

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-07-C-02C	51713299						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Brown Mastic			ND				
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (25 %)	Fibrous Glass (35 %)						
AT-07-W-01A	51713300						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-07-W-01B	51713301						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-07-W-01C	51713302						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (10 %)	Fibrous Glass (Trace)						
AT-07-W-02A	51713303						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-W-02B	51713304						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-07-W-02C	51713305						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-M-01A	51713306						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-M-01B	51713307						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Layer: Paint			ND				
Layer: Tan Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-07-M-01C	51713308						
Layer: Green Non-Fibrous Material			ND				
Layer: Tan Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-C-01A	51713309						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-C-01B	51713310						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-C-01C	51713311						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-08-C-02A	51713312						
Layer: Paint			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Brown Fibrous Material			ND				
Layer: Brown Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (55 %)							
AT-08-C-02B	51713313						
Layer: Paint			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Brown Fibrous Material			ND				
Layer: Brown Mastic			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (30 %)							
AT-08-C-02C	51713314						
Layer: White Non-Fibrous Material			ND				
Layer: Brown Fibrous Material			ND				
Layer: Brown Mastic			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (60 %)							
AT-08-F-01A	51713315						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-F-01B	51713316						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-F-01C	51713317						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-F-02A	51713318						
Layer: Grey Ceramic Tile			ND				
Layer: Tan Mastic			ND				
Layer: Grey Grout			ND				
Layer: Grey Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-08-F-02B	51713319						
Layer: Grey Ceramic Tile			ND				
Layer: Grey Grout			ND				
Layer: Grey Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-F-02C	51713320						
Layer: Grey Ceramic Tile			ND				
Layer: Grey Grout			ND				
Layer: Grey Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-W-01A	51713321						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (5 %)							
AT-08-W-01B	51713322						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (5 %)							
AT-08-W-01C	51713323						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (5 %)							
AT-08-W-02A	51713324						
Layer: Green Ceramic Tile			ND				
Layer: Grey Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-W-02B	51713325						
Layer: Green Ceramic Tile			ND				
Layer: Grey Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-08-W-02C	51713326						
Layer: Green Ceramic Tile			ND				
Layer: Grey Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-W-03A	51713327						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-W-03B	51713328						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-08-W-03C	51713329						
Layer: Grey Cementitious Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-09-C-01A	51713330						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-09-C-01B	51713331						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-09-C-01C	51713332						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-09-W-01A	51713333						
Layer: Beige Ceramic Tile			ND				
Layer: Off-White Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-09-W-01B	51713334						
Layer: Beige Ceramic Tile			ND				
Layer: Off-White Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-09-W-01C	51713335						
Layer: Beige Ceramic Tile			ND				
Layer: Off-White Grout			ND				
Layer: Off-White Mortar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-09-W-02A	51713336						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (5 %)							
AT-09-W-02B	51713337						
Layer: White Drywall			ND				
Layer: White Woven Material			ND				
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %) Fibrous Glass (5 %)							
AT-09-W-02C	51713338						
Layer: White Joint Compound			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-09-M-01A	51713339						
Layer: Black Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-09-M-01B	51713340						
Layer: Black Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488 Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-09-M-01C	51713341						
Layer: Black Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-C-01A	51713342						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-C-01B	51713343						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-C-01C	51713344						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-01A	51713345						
Layer: Beige Non-Fibrous Material			ND				
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-01B	51713346						
Layer: White Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-01C	51713347						
Layer: Beige Non-Fibrous Material			ND				
Layer: White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-02A	51713348						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-02B	51713349						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488 Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-CF-W-02C	51713350						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-03A	51713351						
Layer: Off-White Plaster			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-03B	51713352						
Layer: Off-White Plaster			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-W-03C	51713353						
Layer: Off-White Plaster			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-CF-M-01A	51713354						
Layer: Brown Non-Fibrous Material			ND				
Layer: Brown Mastic		Anthophyllite	Trace				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
AT-CF-M-01B	51713355						
Layer: Brown Non-Fibrous Material			ND				
Layer: Brown Mastic		Anthophyllite	Trace				
Layer: Off-White Non-Fibrous Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
Comment: This comment applies to the Brown Mastic only: Insufficient material for additional analyses.							
AT-CF-M-01C	51713356						
Layer: Brown Non-Fibrous Material			ND				
Layer: Brown Mastic		Anthophyllite	Trace				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
Comment: This comment applies to the Brown Mastic only: Insufficient material for additional analyses.							
AT-10-C-01A	51713357						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-10-C-01B	51713358						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-10-C-01C	51713359						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-10-C-02A	51713360						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-10-C-02B	51713361						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-10-C-02C	51713362						
Layer: Beige Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (35 %) Fibrous Glass (45 %)							
AT-10-C-03A	51713363						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-C-03B	51713364						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-C-03C	51713365						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-F-01A	51713366						
Layer: Grey Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488			
				Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-10-F-01B	51713367						
Layer: Grey Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-F-01C	51713368						
Layer: Grey Non-Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-F-02A	51713369						
Layer: Beige Tile			ND				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-F-02B	51713370						
Layer: Beige Tile			ND				
Layer: Black Mastic			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-F-02C	51713371						
Layer: Grey Non-Fibrous Material			ND				
Layer: Beige Tile			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-01A	51713372						
Layer: Beige Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-01B	51713373						
Layer: Grey Cementitious Material			ND				
Layer: Beige Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-01C	51713374						
Layer: Grey Cementitious Material			ND				
Layer: Beige Non-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-03A	51713375						
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488 Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-10-W-03B	51713376		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-03C	51713377		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-04A	51713378		ND				
Layer: White Plaster							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-04B	51713379		ND				
Layer: Beige Plaster							
Layer: White Plaster			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-10-W-04C	51713380		ND				
Layer: Off-White Plaster							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-F-01A	51713381		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-F-01B	51713382		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-F-01C	51713383		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-F-02A	51713384		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							

Client Name: Element Environmental, LLC				Report Number: B354488 Date Printed: 12/14/23			
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-11-F-02B	51713385		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-F-02C	51713386		ND				
Layer: Grey Cementitious Material							
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-W-01A	51713387		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-W-01B	51713388		ND				
Layer: Grey Cementitious Material							
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-W-01C	51713389		ND				
Layer: Beige Ceramic Tile							
Layer: Grey Cementitious Material			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
AT-11-M-01A	51713390		ND				
Layer: Beige Non-Fibrous Material							
Layer: Grey Non-Fibrous Material with Debris			ND				
Layer: Black Tar		Chrysotile	2 %				
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
AT-11-M-01B	51713391		ND				
Layer: Grey Non-Fibrous Material with Debris							
Layer: Black Tar		Chrysotile	Trace				
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (Trace)					
Cellulose (Trace)							
Comment: This comment applies to the Black Tar only: Insufficient material for additional analyses.							
AT-11-M-01C	51713392		ND				
Layer: Grey Non-Fibrous Material with Debris							
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (3%)					
Cellulose (Trace)							



Bulk Asbestos Material Analysis

(EPA Method 600/R-93/116, Point Count Analysis)

Client Name: Element Environmental, LLC

Report Number: B354488

Date Printed: 12/14/23

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
AT-11-M-02A	51713393						
Layer: Red Semi-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %)							
AT-11-M-02B	51713394						
Layer: Red Semi-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %)							
AT-11-M-02C	51713395						
Layer: Red Semi-Fibrous Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (2 %)							
AT-11-M-03A	51713396						
Layer: Grey Cementitious Material			ND				
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (2%)					
Cellulose (Trace)							
AT-11-M-03B	51713397						
Layer: Grey Cementitious Material			ND				
Layer: Black Tar		Chrysotile	2 %				
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (2%)					
Cellulose (Trace)							
AT-11-M-03C	51713398						
Layer: Grey Cementitious Material			ND				
Layer: Black Tar		Chrysotile	2 %				
Layer: Beige Semi-Fibrous Material		Chrysotile	3 %				
Total Composite Values of Fibrous Components:		Asbestos (2%)					
Cellulose (Trace)							

Element Environmental, LLC
 Bernice Balet
 98-030 Hekaha Street
 Unit 9
 Aiea, HI 96701

Client ID: L1617
 Report Number: N015919
 Date Received: 12/04/23
 Date Analyzed: 12/28/23
 Date Printed: 12/28/23

Job ID/Site: 230088 & 230089; Aloha Tower; Honolulu, Oahu, Hawaii

SGSFL Job ID: L1617
 Total Samples Submitted: 1
 Total Samples Analyzed: 1

PLM Report Number: B354488

Sample Preparation and Analysis:

Each sample was prepared using the gravimetric technique. A representative subsample was weighed, ashed for eight hours, and reweighed to determine the proportion of the organic component. The ashed residue was ground in concentrated hydrochloric acid, dried and reweighed to determine the acid-soluble component weight percentage. The residual material was analyzed for asbestos using polarized light microscopy. Asbestos quantitation was performed using the semi-quantitative Point Count method following the general guidelines in EPA Method 600/R-93/116. The analytical sensitivity for the method is calculated as the asbestos concentration that results from one point counted in the analysis adjusted using the residual weight of the sample. The limit of detection for this method has not been determined.

Sample ID	Lab Number	Sample Description		
AT-CF-M-01A	51713354	Brown Mastic		
<i>Point Count Results:</i>				
Number of asbestos points counted:	2	Organic weight percentage:	53.89	
Number of non-empty points:	1000	Acid-soluble weight percentage:	0.41	
Percent asbestos in layer:	0.09	Residual weight percentage:	45.71	
Analytical sensitivity (%):	0.05			
Asbestos type(s) detected:	Anthrophyllite			
Comment:				

Eric Cerecedo, Laboratory Supervisor, Carson Laboratory

Note: Limit of Quantification ("LOQ") = 1%. "Trace" denotes the presence of asbestos below the LOQ. "ND" = "None Detected".

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Eric Cerecedo, Laboratory Supervisor, Carson Laboratory

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Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Unit 9 Aiea, Hawaii 96701		Client No.: L1617		PO / Job#: 230088 & 230089		Date: 11/15/2023	
Contact: Bernice Balete		Phone: (808) 389-4792		Turn Around Time: <input type="checkbox"/> Same Day / <input type="checkbox"/> 1Day / <input type="checkbox"/> 2Day / <input type="checkbox"/> 3Day / <input type="checkbox"/> 4Day / <input checked="" type="checkbox"/> 5+ <input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B / <input type="checkbox"/> Rotometer		<input checked="" type="checkbox"/> PLM: <input checked="" type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400: <input type="checkbox"/> 1000 / <input type="checkbox"/> CARB 435	
E-mail: bbalete@e2hi.com		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Dust: <input type="checkbox"/> D5755 (microvac) / <input type="checkbox"/> D6480 (wipe)		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) / <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) / <input type="checkbox"/> Special Project		<input type="checkbox"/> Metals Analysis Matrix: Method: Analytes:	
Site Name: Aloha Tower		Site Location: Honolulu, Oahu, Hawaii		<input type="checkbox"/> Silica in Air <input type="checkbox"/> w/Gravimetry <input type="checkbox"/> Quartz Only			
Comments: See attached asbestos bulk table for sample information.							
Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
			[A] [P] [C]				
Sampled By: EA, GI, AL, JV Date/Time: 11/13-15 Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:							
Relinquished By: Bernice Balete		Relinquished By:		Relinquished By:			
Date / Time: 11/30/2023 @ 1400		Date / Time:		Date / Time:			
Received By: [Signature]		Received By:		Received By:			
Date / Time: 12/14/23 9:47 FIE		Date / Time:		Date / Time:			
Condition Acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Condition Acceptable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Condition Acceptable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Sample ID	Sample Date	Sample Location	Sample Description
AT-GF-C-01A	11/14/2023	Stairwell	Gypsum Ceiling Board/Joint Compound
AT-GF-C-01B	11/14/2023	Stairwell	Gypsum Ceiling Board/Joint Compound
AT-GF-C-01C	11/14/2023	Stairwell	Gypsum Ceiling Board/Joint Compound
AT-GF-W-01A	11/14/2023	Exterior	Concrete Wall
AT-GF-W-01B	11/15/2023	Main Electrical Room	Concrete Wall
AT-GF-W-01C	11/15/2023	Fire Pump Room	Concrete Wall
AT-GF-W-02A	11/14/2023	Hall	Plaster Wall
AT-GF-W-02B	11/14/2023	Hall	Plaster Wall
AT-GF-W-02C	11/14/2023	Hall	Plaster Wall
AT-GF-W-03A	11/14/2023	Exterior	Textured Wall Surfacing (beige, coarse)
AT-GF-W-03B	11/14/2023	Exterior	Textured Wall Surfacing (beige, coarse)
AT-GF-W-03C	11/14/2023	Exterior	Textured Wall Surfacing (beige, coarse)
AT-GF-W-04A	11/15/2023	Main Electrical Room	CMU Block Wall/Grout
AT-GF-W-04B	11/15/2023	Fire Pump Room	CMU Block Wall/Grout
AT-GF-W-04C	11/15/2023	Main Electrical Room	CMU Block Wall/Grout
AT-GF-M-01A	11/15/2023	Fire Pump Room	Gasket (black and grey)
AT-GF-M-01B	11/15/2023	Fire Pump Room	Gasket (black and grey)
AT-GF-M-01C	11/15/2023	Fire Pump Room	Gasket (black and grey)
AT-02-C-01A	11/14/2023	Mezzanine	Gypsum Ceiling Board/Joint Compound
AT-02-C-01B	11/14/2023	Mezzanine	Gypsum Ceiling Board/Joint Compound
AT-02-C-01C	11/14/2023	Mezzanine	Gypsum Ceiling Board/Joint Compound
AT-02-F-01A	11/14/2023	Mezzanine	Vinyl Floor Tile/Mastic (12" light and dark teal, checkerboard pattern/yellow)
AT-02-F-01B	11/14/2023	Stairwell	Vinyl Floor Tile/Mastic (12" light and dark teal, checkerboard pattern/yellow)
AT-02-F-01C	11/14/2023	Mezzanine	Vinyl Floor Tile/Mastic (12" light and dark teal, checkerboard pattern/yellow)
AT-02-F-02A	11/14/2023	Fire Pump Room	Concrete Floor
AT-02-F-02B	11/14/2023	Fire Pump Room	Concrete Floor
AT-02-F-02C	11/14/2023	Fire Pump Room	Concrete Floor
AT-02-W-01A	11/14/2023	Fire Pump Room	Gypsum Wallboard/Joint Compound
AT-02-W-01B	11/14/2023	Fire Pump Room	Gypsum Wallboard/Joint Compound
AT-02-W-01C	11/14/2023	Fire Pump Room	Gypsum Wallboard/Joint Compound
AT-02-W-02A	11/14/2023	Fire Pump Room	Concrete Wall
AT-02-W-02B	11/14/2023	Fire Pump Room	Concrete Wall
AT-02-W-02C	11/14/2023	Fire Pump Room	Concrete Wall
AT-02-W-03A	11/14/2023	Fire Pump Room	Skim Coat (white) over Concrete Wall
AT-02-W-03B	11/14/2023	Fire Pump Room	Skim Coat (white) over Concrete Wall
AT-02-W-03C	11/14/2023	Fire Pump Room	Skim Coat (white) over Concrete Wall
AT-02-W-04A	11/14/2023	Fire Pump Room	CMU Block Wall/Grout
AT-02-W-04B	11/14/2023	Fire Pump Room	CMU Block Wall/Grout
AT-02-W-04C	11/14/2023	Fire Pump Room	CMU Block Wall/Grout
AT-02-M-01A	11/14/2023	Fire Pump Room	Ceiling Tile Mastic only (brown) on Ceiling Tile (2'X4' white pegboard)
AT-02-M-01B	11/14/2023	Fire Pump Room	Ceiling Tile Mastic only (brown) on Ceiling Tile (2'X4' white pegboard)
AT-02-M-01C	11/14/2023	Fire Pump Room	Ceiling Tile Mastic only (brown) on Ceiling Tile (2'X4' white pegboard)
AT-03-C-01A	11/14/2023	Office	Concrete Ceiling (under Skim Coat)
AT-03-C-01B	11/14/2023	Office	Concrete Ceiling (under Skim Coat)
AT-03-C-01C	11/14/2023	Office	Concrete Ceiling (under Skim Coat)
AT-03-W-01A	11/14/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-03-W-01B	11/14/2023	Office	Gypsum Wallboard/Joint Compound
AT-03-W-01C	11/14/2023	Restroom	Gypsum Wallboard/Joint Compound
AT-03-W-02A	11/14/2023	Office	Wall Skim Coat
AT-03-W-02B	11/14/2023	Office	Wall Skim Coat
AT-03-W-02C	11/14/2023	Office	Wall Skim Coat
AT-03-W-03A	11/14/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-03-W-03B	11/14/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-03-W-03C	11/14/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-03-W-04A	11/14/2023	Storage 1	Concrete Wall
AT-03-W-04B	11/14/2023	Storage 3	Concrete Wall
AT-03-W-04C	11/14/2023	Storage 3	Concrete Wall
AT-03-T-01A	11/14/2023	Office	Blow-in Ceiling Insulation/Fireproofing

SGS Forensic Laboratories may subcontract client samples to other SGSFL locations to meet client requests.
 San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761 • Phone: 510/887-8828 • 800/827-3274
 Los Angeles Office: 20535 South Belshaw Ave., Carson, CA 90746 • Phone: 310/763-2374 • 888/813-9417
 Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040
 Chicago Office: 3020 Woodcreek Drive, Suite C, Downers Grove, IL 60515 • Phone: 341/465-2464

Sample ID	Sample Date	Sample Location	Sample Description
AT-03-T-01B	11/14/2023	Office	Blow-in Ceiling Insulation/Fireproofing
AT-03-T-01C	11/14/2023	Office	Blow-in Ceiling Insulation/Fireproofing
AT-03-M-01A	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-03-M-01B	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-03-M-01C	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-04-F-01A	11/13/2023	Store Room	Vinyl Floor Tile/Mastic (12" white/yellow) over Leveling Compound
AT-04-F-01B	11/13/2023	Store Room	Vinyl Floor Tile/Mastic (12" white/yellow) over Leveling Compound
AT-04-F-01C	11/13/2023	Store Room	Vinyl Floor Tile/Mastic (12" white/yellow) over Leveling Compound
AT-04-F-02A	11/13/2023	Stairwell	Concrete Floor
AT-04-F-02B	11/13/2023	Stairwell	Concrete Floor
AT-04-F-02C	11/13/2023	Stairwell	Concrete Floor
AT-04-W-01A	11/13/2023	Office	Skim Coat (white) over Concrete Wall
AT-04-W-01B	11/13/2023	Office	Skim Coat (white) over Concrete Wall
AT-04-W-01C	11/13/2023	Office	Skim Coat (white) over Concrete Wall
AT-04-W-02A	11/13/2023	Office	Wallpaper/Adhesive (brown stranded fabric/brown)
AT-04-W-02B	11/13/2023	Office	Wallpaper/Adhesive (brown stranded fabric/brown)
AT-04-W-02C	11/13/2023	Office	Wallpaper/Adhesive (brown stranded fabric/brown)
AT-04-W-03A	11/13/2023	Store Room	Gypsum Wallboard/Joint Compound
AT-04-W-03B	11/13/2023	Store Room	Gypsum Wallboard/Joint Compound
AT-04-W-03C	11/13/2023	Store Room	Gypsum Wallboard/Joint Compound
AT-04-M-01A	11/13/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)
AT-04-M-01B	11/13/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)
AT-04-M-01C	11/13/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)
AT-05-W-01A	11/14/2023	Office	Gypsum Wallboard/Joint Compound
AT-05-W-01B	11/14/2023	Electric Room	Gypsum Wallboard/Joint Compound
AT-05-W-01C	11/14/2023	Office	Gypsum Wallboard/Joint Compound
AT-05-W-02A	11/14/2023	Office	Plaster Wall
AT-05-W-02B	11/14/2023	Office	Plaster Wall
AT-05-W-02C	11/14/2023	Office	Plaster Wall
AT-05-M-01A	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-05-M-01B	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-05-M-01C	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-06-C-01A	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-06-C-01B	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-06-C-01C	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-06-W-01A	11/14/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-06-W-01B	11/14/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-06-W-01C	11/14/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-06-W-02A	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-06-W-02B	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-06-W-02C	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-06-M-01A	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-06-M-01B	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-06-M-01C	11/14/2023	Equipment Room	Vinyl Base/Mastic (4" green/yellow)
AT-07-C-01A	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-07-C-01B	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-07-C-01C	11/14/2023	Office	Skim Coat (white) over Concrete Ceiling
AT-07-C-02A	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, medium shallow fissures/brown)
AT-07-C-02B	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, medium shallow fissures/brown)
AT-07-C-02C	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, medium shallow fissures/brown)
AT-07-W-01A	11/14/2023	Office	Gypsum Wallboard/Joint Compound
AT-07-W-01B	11/14/2023	Store Room	Gypsum Wallboard/Joint Compound
AT-07-W-01C	11/14/2023	Store Room	Gypsum Wallboard/Joint Compound
AT-07-W-02A	11/14/2023	Office	Skim Coat (white) over Concrete Wall
AT-07-W-02B	11/14/2023	Office	Skim Coat (white) over Concrete Wall
AT-07-W-02C	11/14/2023	Office	Skim Coat (white) over Concrete Wall
AT-07-M-01A	11/14/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)
AT-07-M-01B	11/14/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)

Sample ID	Sample Date	Sample Location	Sample Description
AT-07-M-01C	11/14/2023	Store Room	Vinyl Base/Mastic (4" green/yellow)
AT-08-C-01A	11/14/2023	Restroom	Skim Coat (white) over Concrete Ceiling
AT-08-C-01B	11/14/2023	Restroom	Skim Coat (white) over Concrete Ceiling
AT-08-C-01C	11/14/2023	Restroom	Skim Coat (white) over Concrete Ceiling
AT-08-C-02A	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, fiberboard, pinholes/brown) over C-01
AT-08-C-02B	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, fiberboard, pinholes/brown) over C-01
AT-08-C-02C	11/14/2023	Office	Ceiling Tile/Mastic (1'X1' white, fiberboard, pinholes/brown) over C-01
AT-08-F-01A	11/14/2023	Stairwell	Concrete Floor
AT-08-F-01B	11/14/2023	Stairwell	Concrete Floor
AT-08-F-01C	11/14/2023	Stairwell	Concrete Floor
AT-08-F-02A	11/14/2023	Electric Room	Ceramic Floor Tile/Grout/Mortar (1" grey/grey/grey)
AT-08-F-02B	11/14/2023	Electric Room	Ceramic Floor Tile/Grout/Mortar (1" grey/grey/grey)
AT-08-F-02C	11/14/2023	Electric Room	Ceramic Floor Tile/Grout/Mortar (1" grey/grey/grey)
AT-08-W-01A	11/14/2023	Restroom	Gypsum Wallboard/Joint Compound
AT-08-W-01B	11/14/2023	Electric Room	Gypsum Wallboard/Joint Compound
AT-08-W-01C	11/14/2023	Electric Room	Gypsum Wallboard/Joint Compound
AT-08-W-02A	11/14/2023	Store Room	Ceramic Wall Tile/Grout/Mortar (4"X6" green/white/grey)
AT-08-W-02B	11/14/2023	Store Room	Ceramic Wall Tile/Grout/Mortar (4"X6" green/white/grey)
AT-08-W-02C	11/14/2023	Store Room	Ceramic Wall Tile/Grout/Mortar (4"X6" green/white/grey)
AT-08-W-03A	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-08-W-03B	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-08-W-03C	11/14/2023	Restroom	Skim Coat (white) over Concrete Wall
AT-09-C-01A	11/13/2023	Office	Ceiling Tile (5'X5' white, medium fissures with small holes)
AT-09-C-01B	11/13/2023	Office	Ceiling Tile (5'X5' white, medium fissures with small holes)
AT-09-C-01C	11/13/2023	Office	Ceiling Tile (5'X5' white, medium fissures with small holes)
AT-09-W-01A	11/13/2023	Equipment Room	Ceramic Wall Tile/Grout/Mortar (5" beige/white/white) over W-02
AT-09-W-01B	11/13/2023	Equipment Room	Ceramic Wall Tile/Grout/Mortar (5" beige/white/white) over W-02
AT-09-W-01C	11/13/2023	Equipment Room	Ceramic Wall Tile/Grout/Mortar (5" beige/white/white) over W-02
AT-09-W-02A	11/13/2023	Office	Gypsum Wallboard/Joint Compound
AT-09-W-02B	11/13/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-09-W-02C	11/13/2023	Equipment Room	Gypsum Wallboard/Joint Compound
AT-09-M-01A	11/13/2023	Office	Window Caulking (black)
AT-09-M-01B	11/13/2023	Office	Window Caulking (black)
AT-09-M-01C	11/13/2023	Office	Window Caulking (black)
AT-CF-C-01A	11/13/2023	Clock Room	Concrete Ceiling
AT-CF-C-01B	11/13/2023	Clock Room	Concrete Ceiling
AT-CF-C-01C	11/13/2023	Clock Room	Concrete Ceiling
AT-CF-W-01A	11/13/2023	Clock Room	Gypsum Wallboard/Joint Compound
AT-CF-W-01B	11/13/2023	Clock Room	Gypsum Ceiling Board/Joint Compound
AT-CF-W-01C	11/13/2023	Clock Room	Gypsum Wallboard/Joint Compound
AT-CF-W-02A	11/13/2023	Storage Room	Concrete Wall
AT-CF-W-02B	11/13/2023	Storage Room	Concrete Wall
AT-CF-W-02C	11/13/2023	Storage Room	Concrete Wall
AT-CF-W-03A	11/13/2023	Storage Room	Plaster Wall
AT-CF-W-03B	11/13/2023	Storage Room	Plaster Wall
AT-CF-W-03C	11/13/2023	Storage Room	Plaster Wall
AT-CF-M-01A	11/13/2023	Clock Room	Vinyl Base/Mastic (4" brown/brown)
AT-CF-M-01B	11/13/2023	Clock Room	Vinyl Base/Mastic (4" brown/brown)
AT-CF-M-01C	11/13/2023	Clock Room	Vinyl Base/Mastic (4" brown/brown)
AT-10-C-01A	11/13/2023	Observation Deck	Ceiling Tile/Mastic (1'X1' white, fiberboard with pinholes/brown)
AT-10-C-01B	11/13/2023	Observation Deck	Ceiling Tile/Mastic (1'X1' white, fiberboard with pinholes/brown)
AT-10-C-01C	11/13/2023	Observation Deck	Ceiling Tile/Mastic (1'X1' white, fiberboard with pinholes/brown)
AT-10-C-02A	11/13/2023	Observation Deck	Ceiling Tile (2'X4' white, deep linear fissures with small holes)
AT-10-C-02B	11/13/2023	Observation Deck	Ceiling Tile (2'X4' white, deep linear fissures with small holes)
AT-10-C-02C	11/13/2023	Observation Deck	Ceiling Tile (2'X4' white, deep linear fissures with small holes)
AT-10-C-03A	11/13/2023	Office Storage	Concrete Ceiling (under Skim Coat)
AT-10-C-03B	11/13/2023	Office Storage	Concrete Ceiling (under Skim Coat)
AT-10-C-03C	11/13/2023	Office Storage	Concrete Ceiling (under Skim Coat)



Metals Analysis of Bulks - TTLC

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Baleta
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: M256071
Date Received: 12/04/23
Date Analyzed: 12/11/23
Date Printed: 12/11/23
First Reported: 12/11/23

Job ID / Site: 230088 & 230089; Aloha Tower Honolulu, Oahu, Hawaii
Date(s) Collected: 11/14/23

SGSFL Job ID: L1617
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample ID	Sample Date	Sample Location	Sample Description
AT-10-F-01A	11/13/2023	Lanai	Non-skid Floor Surfacing (beige-painted, coarse)
AT-10-F-01B	11/13/2023	Lanai	Non-skid Floor Surfacing (beige-painted, coarse)
AT-10-F-01C	11/13/2023	Lanai	Non-skid Floor Surfacing (beige-painted, coarse)
AT-10-F-02A	11/13/2023	Storage Room	Vinyl Floor Tile/Mastic (12" beige with light beige streaks/yellow)
AT-10-F-02B	11/13/2023	Storage Room	Vinyl Floor Tile/Mastic (12" beige with light beige streaks/yellow)
AT-10-F-02C	11/13/2023	Storage Room	Vinyl Floor Tile/Mastic (12" beige with light beige streaks/yellow)
AT-10-W-01A	11/13/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-10-W-01B	11/13/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-10-W-01C	11/13/2023	Lanai	Textured Wall Surfacing (beige, coarse)
AT-10-W-03A	11/13/2023	Lanai	Concrete Wall
AT-10-W-03B	11/13/2023	Observation Deck	Concrete Wall
AT-10-W-03C	11/13/2023	Storage Room	Concrete Wall
AT-10-W-04A	11/13/2023	Storage Room	Plaster Wall
AT-10-W-04B	11/13/2023	Storage Room	Plaster Wall
AT-10-W-04C	11/13/2023	Observation Deck	Plaster Wall
AT-11-F-01A	11/13/2023	Elevator Machine Room	Concrete Floor
AT-11-F-01B	11/13/2023	Elevator Machine Room	Concrete Floor
AT-11-F-01C	11/13/2023	Elevator Machine Room	Concrete Floor
AT-11-F-02A	11/13/2023	Elevator Machine Room	Concrete Pipe Supports
AT-11-F-02B	11/13/2023	Elevator Machine Room	Concrete Pipe Supports
AT-11-F-02C	11/13/2023	Elevator Machine Room	Concrete Pipe Supports
AT-11-W-01A	11/13/2023	Elevator Machine Room	Concrete Wall
AT-11-W-01B	11/13/2023	Elevator Machine Room	Concrete Wall
AT-11-W-01C	11/13/2023	Elevator Machine Room	Concrete Wall
AT-11-M-01A	11/13/2023	Elevator Machine Room	Window Caulking (grey, white, beige)
AT-11-M-01B	11/13/2023	Elevator Machine Room	Window Caulking (grey, white, beige)
AT-11-M-01C	11/13/2023	Elevator Machine Room	Window Caulking (grey, white, beige)
AT-11-M-02A	11/13/2023	Elevator Machine Room	Gasket (orange)
AT-11-M-02B	11/13/2023	Elevator Machine Room	Gasket (orange)
AT-11-M-02C	11/13/2023	Elevator Machine Room	Gasket (orange)
AT-11-M-03A	11/13/2023	Elevator Machine Room	Window Caulking (white and grey, brittle and hard)
AT-11-M-03B	11/13/2023	Elevator Machine Room	Window Caulking (white and grey, brittle and hard)
AT-11-M-03C	11/13/2023	Elevator Machine Room	Window Caulking (white and grey, brittle and hard)

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
AT-08-C-02A, B, C (COMPOSITE)	LM263409	As	< 4	ppm	4	EPA 3050B/6010B

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Beatriz Hinojosa, Laboratory Supervisor, Carson Laboratory

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Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Unit 9 Aiea, Hawaii 96701		Client No.: L1617	PO / Job#: 230088 & 230089	Date: 11/14/2023			
Contact: Bernice Balete		Phone: (808) 389-4792	Turn Around Time: <input type="checkbox"/> Same Day / <input type="checkbox"/> 1Day / <input type="checkbox"/> 2Day / <input type="checkbox"/> 3Day / <input type="checkbox"/> 4Day / <input checked="" type="checkbox"/> 5+Days				
E-mail: bbalete@e2hi.com		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B / <input type="checkbox"/> Rotometer <input type="checkbox"/> PLM: <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400-1000 / <input type="checkbox"/> CARB 435					
Site Name: Aloha Tower		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chafffield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Dust: <input type="checkbox"/> D5755 (microvac) / <input type="checkbox"/> D6480 (wipe)					
Site Location: Honolulu, Oahu, Hawaii		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) / <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) / <input type="checkbox"/> Special Project <input checked="" type="checkbox"/> Metals Analysis Matrix: Bulk Method: EPA 3050B/7000B Analytes: Arsenic					
Comments: Page 1 of 1							
		<input type="checkbox"/> Silica in Air <input type="checkbox"/> w/Gravimetry <input type="checkbox"/> Quartz Only					
Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
AT-08-C-02A,B,C (composite)	11/14/23	8th Floor Office / Ceiling Tile/Mastic (1'X1' white, fiberboard, pinholes/brown)	A P C				
		(over Skim Coat (white) over Concrete Ceiling)	A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
Sampled By: AL, EA, GI, JV Date/Time: 11/14/23 Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:							
Relinquished By: Bernice Balete		Relinquished By:		Relinquished By:			
Date / Time: 11/30/2023 @ 1400		Date / Time:		Date / Time:			
Received By: <i>Bernice Balete</i>		Received By:		Received By:			
Date / Time: 12/14/23 10:00 947		Date / Time:		Date / Time:			
Condition Acceptable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Condition Acceptable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Condition Acceptable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: M256052
Date Received: 12/04/23
Date Analyzed: 12/08/23
Date Printed: 12/08/23
First Reported: 12/08/23

Job ID / Site: 230088 & 230089; Aloha Tower; Honolulu, Oahu, Hawaii
Date(s) Collected: 11/13/23, 11/14/23, 11/15/23

SGSFL Job ID: L1617
Total Samples Submitted: 37
Total Samples Analyzed: 37

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
AT-GF-P01	LM263306	Pb	33	ppm	6	EPA 3050B/7000B
AT-GF-P02	LM263307	Pb	70	ppm	60	EPA 3050B/7000B
AT-GF-P03	LM263308	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-GF-P04	LM263309	Pb	2600	ppm	200	EPA 3050B/7000B
AT-GF-P05	LM263310	Pb	< 200	ppm	200	EPA 3050B/7000B
Comment: Sample submission below 0.1 grams.						
AT-GF-P06	LM263311	Pb	390	ppm	90	EPA 3050B/7000B
AT-GF-P07	LM263312	Pb	360	ppm	60	EPA 3050B/7000B
AT-02-P01	LM263313	Pb	36000	ppm	3000	EPA 3050B/7000B
AT-03-P01	LM263314	Pb	5600	ppm	300	EPA 3050B/7000B
AT-03-P02	LM263315	Pb	19000	ppm	2000	EPA 3050B/7000B
AT-03-P03	LM263316	Pb	3100	ppm	300	EPA 3050B/7000B
AT-03-P04	LM263317	Pb	3300	ppm	200	EPA 3050B/7000B
AT-04-P01	LM263318	Pb	12000	ppm	2000	EPA 3050B/7000B
AT-04-P02	LM263319	Pb	< 200	ppm	200	EPA 3050B/7000B
Comment: Sample submission below 0.1 grams.						
AT-05-P01	LM263320	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-05-P02	LM263321	Pb	70	ppm	60	EPA 3050B/7000B
AT-06-P01	LM263322	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-06-P02	LM263323	Pb	8600	ppm	600	EPA 3050B/7000B
AT-07-P01	LM263324	Pb	8400	ppm	600	EPA 3050B/7000B
AT-07-P02	LM263325	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-07-P03	LM263326	Pb	660	ppm	90	EPA 3050B/7000B
AT-08-P01	LM263327	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-08-P02	LM263328	Pb	4200	ppm	200	EPA 3050B/7000B
AT-08-P03	LM263329	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-09-P01	LM263330	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-09-P02	LM263331	Pb	< 300	ppm	300	EPA 3050B/7000B
Comment: Sample submission below 0.1 grams.						
AT-CF-P01	LM263332	Pb	< 60	ppm	60	EPA 3050B/7000B
AT-CF-P02	LM263333	Pb	410	ppm	60	EPA 3050B/7000B

SGS Forensic Laboratories may subcontract client samples to other SGSFL locations to meet client requests.
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 Chicago Office: 3020 Woodcreek Drive, Suite C, Downers Grove, IL 60515 • Phone: 341/465-2464



Final Report

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: M256052
Date Received: 12/04/23
Date Analyzed: 12/08/23
Date Printed: 12/08/23
First Reported: 12/08/23

Job ID / Site: 230088 & 230089; Aloha Tower; Honolulu, Oahu, Hawaii
Date(s) Collected: 11/13/23, 11/14/23, 11/15/23

SGSFL Job ID: L1617
Total Samples Submitted: 37
Total Samples Analyzed: 37

Table with 7 columns: Sample Number, Lab Number, Analyte, Result, Result Units, Reporting Limit*, Method Reference. Contains 11 rows of lead (Pb) analysis results.

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Handwritten signature of Beatriz Hinojosa

Beatriz Hinojosa, Laboratory Supervisor, Carson Laboratory

Analytical results and reports are generated by SGS Forensic Laboratories at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGS Forensic Laboratories to any third party without prior written request from client.

Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.



Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC
Client No.: L1617
PO / Job#: 230088 & 230089
Date: 11/15/2023
Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day
PCM: NIOSH 7400A / NIOSH 7400B / Rotometer
PLM: Standard / Point Count 400-1000 / CARB 435
Contact: Bernice Balete
Phone: (808) 389-4792
Email: bbalete@e2hi.com
Site Name: Aloha Tower
Site Location: Honolulu, Oahu, Hawaii
Comments: See attached lead paint chip table for sample information.
Sample ID, Date / Time, Sample Location / Description, Type, Time On/Off, Avg LPM, Total Time, Sample Area / Air Volume
Sampled By: JV, EA, GI, AL
Shipped Via: Fed Ex, UPS, US Mail, Courier, Drop Off, Other
Relinquished By: Bernice Balete
Received By: Bernice Balete

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San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761
Los Angeles Office: 20536 South Belshaw Ave., Carson, CA 90746
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119

Sample ID	Sample Date	Sample Location	Sample Description
AT-GF-P01	11/14/2023	Exterior	Gray Concrete Wall
AT-GF-P02	11/14/2023	Main Electrical Room	Light Blue Concrete Wall
AT-GF-P03	11/14/2023	Electrical Room	Beige Concrete Wall
AT-GF-P04	11/14/2023	Fire Pump Room	Yellow Beige Concrete Wall
AT-GF-P05	11/14/2023	Fire Pump Room	Red Metal Pipe
AT-GF-P06	11/14/2023	Fire Pump Room	Black Metal Pipe
AT-GF-P07	11/14/2023	Elevator	Gray Metal Wall
AT-02-P01	11/14/2023	Fire Pump Room	Beige Plaster Wall
AT-03-P01	11/14/2023	Vestibule	White Concrete Wall
AT-03-P02	11/14/2023	Corridor	Gray Concrete Wall
AT-03-P03	11/14/2023	Lanai 2	Beige Plaster Wall
AT-03-P04	11/14/2023	Storage 2	Green Concrete Wall
AT-04-P01	11/13/2023	Stair Room	Green Concrete Wall
AT-04-P02	11/13/2023	Equipment Room	White Gypsum Wall
AT-05-P01	11/14/2023	Equipment Room	White Gypsum Wall
AT-05-P02	11/14/2023	Stair Room	Gray Concrete Wall
AT-06-P01	11/14/2023	Equipment Room	White Gypsum Wall
AT-06-P02	11/14/2023	Stair Room	Gray Concrete Wall
AT-07-P01	11/14/2023	Stair Room	Gray Concrete Wall
AT-07-P02	11/14/2023	Office	White Gypsum Wall
AT-07-P03	11/14/2023	Elevator	Beige Metal Wall
AT-08-P01	11/14/2023	Equipment Room	White Gypsum Wall
AT-08-P02	11/14/2023	Equipment Room	White Concrete Wall
AT-08-P03	11/14/2023	Stair Room	Gray Plaster Wall
AT-09-P01	11/13/2023	Equipment Room	White Gypsum Wall
AT-09-P02	11/13/2023	Restroom	Green Wood Windows
AT-CF-P01	11/15/2023	Clock Room	Tan Gypsum Wall
AT-CF-P02	11/15/2023	Clock Room	Tan Concrete Wall
AT-10-P01	11/13/2023	Storage Room	Peach Plaster Wall
AT-10-P02	11/13/2023	Elevator	Gray Metal Wall
AT-10-P03	11/13/2023	Observation Deck	White Gypsum Wall
AT-10-P04	11/13/2023	Lanai	Green Concrete Floor
AT-10-P05	11/13/2023	Lanai	Beige Textured Surfacing Floor
AT-11-P01	11/13/2023	Elevator Machine Room	Beige Metal Railing
AT-11-P02	11/13/2023	Elevator Machine Room	Yellow Metal Pipe
AT-11-P03	11/13/2023	Elevator Machine Room	Red Concrete Floor
AT-11-P04	11/13/2023	Elevator Machine Room	Beige Metal Ladder

ARTICLE XIV - LEAD PAINT CONTROL MEASURES

14.1 SUMMARY

- A. The work shall include the handling, treatment, encapsulation, removal, demolition, transportation, and/or disposal procedures of lead-containing paints, lead-based paints, and painted materials located at the project site in conjunction with the elevator repair. The Contractor may use chemical strippers, HEPA vacuum shrouded tools, or manual scraping, or other techniques to remove lead-containing paint, if all work is performed in accordance with all applicable requirements for worker protection and environmental protection.
- B. The Contractor acknowledges that he alone is responsible for the lead paint control work and for enforcing personnel protective requirements, and that this specification provides only minimum acceptable standards. The Contractor shall comply with all requirements of 29 CFR 1926.62, HIOSH 12-148.1, and all applicable Environmental Protection Agency (EPA) regulations regarding lead-containing paints and painted materials.
- C. The Contractor shall coordinate all work with the General Contractor and the Officer-in-Charge.
- D. Sampling confirmed that lead-based paint (LBP) and lead-containing paint (LCP) are present at the project site. Loose and flaky lead paint should be removed prior to disturbance, cutting, demolition, replacement, etc. In general, all paint is assumed to contain lead, and may contain cadmium and chromium.
- E. Refer to the "Final Letter Report, Limited Hazardous Materials Survey, S10842 Repair Elevator, Aloha Tower, Honolulu Harbor, Oahu, Hawaii," 94 pages, dated January 2024, prepared by Element Environmental, LLC and appended at the end of ARTICLE XIII - EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS MATERIAL SURVEY.

14.2 APPLICABLE STANDARDS AND GUIDELINES

All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable federal, state, and local regulations, standards, and codes governing lead paint handling, treatment, removal, demolition, transportation, and disposal of lead-containing paints and painted materials, as required. The most recent edition of any relevant document shall be in effect. Other specific Statutory and Regulatory Requirements include, but are not limited to the following:

- A. Title 29 Code of Federal Regulations (CFR) Section 1926.62 Lead Exposure in Construction; Interim Final Rule.
- B. Department of Labor and Industrial Relations, Department of Occupational Safety and Health: State of Hawaii (HIOSH), Occupational Safety and Health Standards; Title 12, Subtitle 8, Chapter 148.1 (also known as Chapter 12-148.1, Hawaii Administrative Rules (HAR), Lead Exposure in Construction).
- C. Title 29 CFR Part 1910.134 Respiratory Protection.
- D. Title 40 CFR Parts 249 - 262 Resource Conservation and Recovery Act (RCRA).
- E. Title 49 CFR Parts 171-179 DOT Hazardous Materials Transportation.

14.3 DEFINITIONS

- A. Action Level (AL): Employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. The AL for lead is 30 micrograms per cubic meter of air.
- B. Air Monitoring: Process of measuring the content of a specific, known volume of air in a stated period of time. For this project, National Institute for Occupational Safety and Health (NIOSH) Method 7082 shall be used for lead air monitoring.
- C. Authorized Visitor: The Officer-in-Charge, Qualified Consultant, their representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- D. Contractor: Individual and/or legal entity and its subcontractors and employees of the contractor and subcontractor awarded the contract
- E. Control Area: An area where unwanted toxic or harmful substances exist.
- F. High Efficiency Particulate Air (HEPA) Filter: Filter capable of trapping and retaining 99.97% of particulates greater than 0.3 micron in diameter.
- G. Lead: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.
- H. Lead-Based Paint: A paint or other surface coating containing lead equal to or in excess of 1.0 milligram per square centimeter of painted surface or 0.5 percent by weight.

- I. Lead-Containing Paint: A paint or other surface coating containing measurable quantities of lead.
- J. Monitoring Specialist: Person under the supervision of the Contractor-hired Qualified Consultant who is trained in health and safety requirements for lead exposure and air monitoring. The Monitoring Specialist should have at least two (2) years of experience on similar lead projects, having experience in the sampling for employee and ambient air, and monitoring for compliance with applicable regulations and work plans.
- K. Officer-in-Charge: Owner's representative for this project for work that pertains to lead-containing materials only.
- L. Permissible Exposure Limit (PEL): Maximum amount or concentration of a chemical that a worker may be exposed to under OSHA regulations. The PEL for lead is 50 micrograms per cubic meter over an 8-hour time weighted average.
- M. Personal Monitoring: Contractor's sampling of lead in air concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of the employee.
- N. Qualified Consultant: Independent third-party, not an employee of the Contractor or on the Contractor's payroll, who is hired by the Contractor and who is educated and trained in recognizing and evaluating work place hazards and providing guidance on the methods and means of removing or correcting such hazards within the work environment. For this contract, the work place hazards are work related to lead-containing material removal and demolition. The Qualified Consultant should have at least five (5) years of experience on similar projects, having experience with managing wastes and hazardous wastes for construction and demolition projects, and being familiar with the applicable regulations pertaining to these activities.
- O. Time Weighted Average (TWA): Average exposure to a contaminant or condition to which workers may be exposed without adverse effect over a period such as in an 8-hour day or 40-hour week.

14.4 SUBMITTALS

Submit in accordance with Submittal Procedures prior to starting work for the asbestos disturbance work:

- A. Work Plan: The Contractor shall submit in accordance with Submittal Procedures prior to starting work a project work plan for the lead paint disturbance work, to include:
1. Work Methods and Procedures:
 - a. Sequence of work and performance schedule, in coordination with other trades.
 - b. Work area preparation and setup, including the lead work control area, staging areas, entrances and exits to the work area, location of decontamination units, locations of ambient air sampling pumps, location of waste storage area, etc.
 - c. Lead paint handling, treatment, removal, transportation, and disposal, as required.
 - d. Materials, equipment, and tools, including personal protective equipment, respirators, and cartridges/filters.
 - e. Air monitoring.
 - f. Decontamination procedures.
 - g. Cleanup and visual clearance.
 - h. Toxicity Characteristic Leaching Procedure (TCLP) sampling and analysis.
 - i. Waste transportation and disposal.
 2. Documentation (Certificates for all workers on the site should be submitted prior to lead work. No one is allowed in the controlled areas or allowed to handle wastes until these certificates are supplied.):
 - a. Insurance: Proof of Workman's Compensation and General Liability Insurance, which covers lead, asbestos, and pollution.
 - b. Lead Training: Documentation of experience, assigned responsibilities during the project, and lead removal training, based on 29 CFR 1926.62, HIOSH 12-148.1, and current EPA regulatory requirements. In addition, each worker in the lead control area should have site-specific awareness training to inform them of the hazards of the

site, the work plan provisions, and the means of protecting themselves.

- c. Respiratory Protection: Written program and current documentation of training and fit-testing for all personnel who will enter the work area wearing negative-pressure respirators.
 - d. Medical Examination: Current clearance of comprehensive medical examination, including blood lead monitoring, ZPP testing, and the ability to wear a respirator.
 - e. Qualified Consultant Qualifications: Name, address, telephone number, and certifications.
 - f. Testing Laboratory Qualifications: Name, address, telephone number, and certifications, including EPA National Lead Laboratory Accreditation Program (NLLAP) by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA), and the Environmental Lead Proficiency Analytical Testing (ELPAT) Program.
 - g. Proposed Disposal Landfill Waste Acceptance: Name, address, telephone number, and type of waste accepted.
 - h. Emergency Response and Evacuation Plan: Written program and training.
3. Manufacturer's Data: Specifications, installation instructions, and field test procedures for each material and all equipment related to lead work, to include, but not limited to the following:
- a. Personal protective equipment (e.g., clothing, etc.).
 - b. Respirators and Cartridges/Filters: NIOSH approvals.
 - c. Specialized tools, dust collection, vacuum systems, chemical agents, as applicable
4. Respiratory Protection Program: Written program meeting the requirements of 29 CFR 1910.134(b)(d)(e).
5. Emergency Response and Evacuation Plan: To include consideration of fire explosion; toxic atmospheres; electrical hazards; slips, trips, and falls; confined spaces; and heat-related injury. In non-life threatening situations, the injured or incapacitated employee shall decontaminate following normal

procedures, with assistance from co-workers if necessary, before exiting the work area to obtain proper medical treatment. In life threatening situations, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the injured worker from the work area, and secure proper medical treatment.

- B. Final Clearance Report: The Contractor shall submit after completing work in accordance with Submittal Procedures a project final clearance report for the lead paint disturbance work, to include:
1. Statement signed by the Contractor that all lead disturbance and disposal was completed in compliance with federal, state, and local regulations, this specification, and the approved Work Plan.
 2. Contractor license number, work duration, respiratory protection and decontamination procedures employed, employee exposure and ambient air sample results, and results of the current Proficiency Analytical Testing (PAT) Program results for the laboratory conducting the air analysis.
 3. Visual clearance certification received from the Qualified Consultant.
 4. USEPA waste generator identification number (HI0000463752), material removed, total quantity of waste, and TCLP lead reports. All Hazardous Waste (HW) disposal-related documentation (e.g., Uniform Hazardous Waste Manifests, waste profile sheets, etc.) should be provided to the Officer-in-Charge for review prior to any HW leaving the project site. Copies of related manifests shall be provided to HDOT-HAR-EE for record-keeping.
 5. Waste shipping and disposal manifests of all waste material signed and accepted by the waste disposal facility, to include names and addresses of the Contractor, the Transporter, the Facility, and information on the type and number of waste containers.
 6. Visitor/Worker Entry Log: The daily log of all personnel who enter the work area while lead disturbance operations are in progress and until final clearance is received. The log shall include, as a minimum: date of visit/worker entry; Visitor/Worker's name, employer, business address, and telephone number; time of entry and exit from work area; purpose of visit; type of protective clothing and respirator worn; and certificate of release signed and filed with the contractor.

14.5 PRODUCTS

- A. Respirators and Cartridges/Filters: Use appropriate respirators and cartridges/filters, which meet all requirements of OSHA 29 CFR 1926.62 and HIOSH 12-148.1.
- B. Personal Protective Clothing: Use appropriate personal protective clothing (disposable coveralls/suits, boots, gloves, eye protection, etc.) as required by OSHA 29 CFR 1926.62 and HIOSH 12-148.1.
- C. Paint Removal Materials: Use appropriate tools, containment systems, chemical agents, vacuum systems, and environmental protection materials to fully collect and contain all lead-containing residues from the area during handling of paint coatings.

14.6 WORK AREA PREPARATION

- A. Notice and Protection of Occupants: Inform occupants of the lead disturbance work. Protect occupants, spaces, and surrounding area from possible contamination.
- B. Lead Work: During lead disturbance work, acceptable industry standard dust control methods shall be used to control dust such as, providing dust screens; setting up the decontamination unit; using negative pressure enclosures; remove paint using manual methods, or chemical strippers; and using HEPA vacuum shrouded tools, as applicable. Seal any penetrations to the affected work area with 6-mil polyethylene plastic sheeting and duct tape, if necessary. Separate the work area from non-work areas using two layers of 6-mil poly sheeting, if necessary. Completely contain and control all paint debris from leaving the work area.
- C. Daily Cleanup: High Efficiency Particulate Air (HEPA) vacuum and wet clean surfaces and surrounding ground within the work area daily. Do not allow lead-painted/coated debris, paint chips, and dust to accumulate. Restrict the spread of dust and debris. Keep waste from being distributed over the general area. Do not dry sweep or use compressed air to clean the area.

14.7 AIR MONITORING

Refer to ARTICLE XV - AIR MONITORING.

14.8 CLEANUP AND CLEARANCE

- A. Waste Segregation: During the course of the work, the Contractor shall separate non-hazardous waste material (e.g., plastic sheeting, disposable tools, disposable protective suits, etc.) from potentially hazardous waste material (e.g., lead paint chips, debris, trash, etc.). The lead-containing waste must be placed in UN-approved (49 CFR 178) and appropriately labeled containers. The containers with lead-containing waste shall be removed from the immediate work area and shall be stored onsite for TCLP testing.
- B. Final Cleanup: When the lead work has been completed, the area will be cleaned of all visible lead paint contamination by vacuuming with a HEPA-filtered vacuum cleaner followed by wet mopping, where applicable.
- C. Visual Clearance:
1. The Qualified Consultant shall visually inspect the affected surfaces for residual lead paint chips and accumulated dust before the eventual removal of the lead control area.
 2. If the Qualified Consultant requests recleaning due to visual dust or residual paint chips, the process will be repeated until the clearance is obtained. The Contractor shall not remove the lead control area or roped-off perimeter and warning signs prior to the Officer-in-Charge's receipt of the Qualified Consultant's lead clearance certification. Any additional clearance inspection initiated by the Contractor or required due to failure of the first clearance inspection, shall be at the Contractor's expense.
- D. Once clearance is obtained, dismantle the decontamination unit.
- E. Toxicity Characteristic Leaching Procedure (TCLP) Sampling and Analysis for waste disposal.
1. The Contractor shall be responsible for collecting representative samples of different waste streams and analyzing the samples for eight RCRA metals by TCLP analysis. The TCLP test result must be compared to the EPA limits (40 CFR 261.24), to determine if the demolition debris can be disposed of at a local landfill and/or metal recycling company approved for such purposes.
 2. The Contractor shall be responsible for obtaining waste disposal approval from the landfill.
- F. Waste Transportation and Disposal
1. Hazardous Waste: If any wastes are found to be classified as a hazardous waste, the owner will be notified within 24 hours and all

hazardous wastes labeled, stored, and secured in accordance with applicable regulations.

Local waste landfill facilities do not accept RCRA hazardous waste. All hazardous waste must be disposed of at an EPA-approved U.S. mainland RCRA hazardous waste disposal facility. All hazardous waste must be removed from the project site within 90 days of the waste being created for disposal.

2. Non-hazardous Waste: Non-hazardous lead waste and debris may be disposed of at the local waste landfill facility that is State-approved to accept such waste.
 - a. Notify Non-hazardous Waste Landfill Operator: The Contractor shall advise the Non-hazardous Waste landfill operator, at least 24 hours prior to transportation, of the material to be delivered.
 - b. Provide the Non-hazardous Waste Landfill Operator with applicable TCLP results, which indicate that the waste material is non-hazardous.
 - c. If the TCLP results indicate that the wastes are hazardous waste, the Contractor, within three (3) days, shall securely store, label, and handle the materials in accordance with EPA regulations for hazardous waste. The Qualified Consultant shall ensure that the hazardous waste regulations are being followed for these wastes.

14.9 PAYMENT

Payment for disposal of hazardous wastes will not be made separately, but shall be considered incidental to the other contract items. Project final payment will not be made until a signed copy of the manifest from the treatment or disposal facility certifying the amount of hazardous materials delivered is returned and a copy is furnished to the State.

END OF ARTICLE

ARTICLE XV - AIR MONITORING

15.1 SUMMARY

- A. The Contractor shall employ or subcontract all testing and air monitoring to personnel qualified to provide such monitoring for the purpose of:
 - 1. Verification of compliance with the specifications listed in
 - a. ARTICLE XIV - LEAD PAINT CONTROL MEASURES.
 - 2. Ensuring that the State's legally required documentation is collected.
 - 3. Providing engineering controls during the project.
- B. The testing/air monitoring requirements shall conform to all applicable Federal, State and local regulations and shall be incorporated into this Article. Testing/air monitoring requirements shall comply with EPA, OSHA, and HIOSH.

15.2 ABATEMENT CONTRACTOR'S RESPONSIBILITIES

- A. The Abatement Contractor shall be responsible for providing the personal monitoring and necessary records for all of the Abatement Contractor's employees as required by and (29 CFR 1926.62) (for lead), (12-148.1 and HAR 11-41) (for lead) and all other applicable Federal, State, and local laws governing this abatement project.
- B. The Abatement Contractor shall obtain the legally required reports for air monitoring as part of the Contract. All air monitoring reports shall include all field data, laboratory reports, test results and other pertinent information about the daily work activities.
- C. Monitoring information developed by the Qualified industrial hygienist's activities while under contract with the State shall be for the use of the State. The information will be available and offered to the Abatement Contractor when developed, but not thereafter, and shall not waive the Abatement Contractor's obligations stated elsewhere in this Article.
- D. Air monitoring and testing which becomes necessary in order to follow up on work by the Abatement Contractor, which is rejected as not conforming to the requirements, shall be the responsibility of the Qualified industrial hygienist. Full cost of such additional monitoring and testing shall be borne by the Abatement Contractor, and shall be deducted from the final contract payment.

- E. Personal air monitoring that is part of the Qualified Consultant's scope of work shall be accommodated by the Abatement Contractor and shall not be assumed to be the monitoring required of the Abatement Contractor by law or regulation.
- F. The Abatement Contractor shall be responsible for the proper, required notification to the EPA and State of Hawaii Department of Health.

15.3 VISUAL INSPECTION

- A. The Qualified industrial hygienist employed or subcontracted by the Contractor shall conduct visual inspections of the work areas where lead removal and disposal work is being conducted.
 - 1. Lead-Based Paint: The Qualified Consultant will conduct visual inspections of the work area prior to, during, and after lead removal operations to ensure general cleanliness of the work area. The Qualified Consultant will also conduct a final visual inspection of the work area prior to the opening of the work area to other trades and personnel.

15.4 TESTING/AIR MONITORING

- A. The Qualified Consultant will ensure that the applicable specifications are being followed using the methods and requirements of the applicable scope of work.
- B. The Qualified Consultant shall have the authority to implement engineering control measures during the project and stop work if deemed necessary.
- C. Lead air monitoring shall be performed to detect airborne fiber and dust concentrations in and outside the work area for the duration of the lead disturbance work. An adequate amount of samples of from each of the following locations shall be collected daily (downwind or outside of the work area, upwind of the work area, and in the work area (not including blanks)).
- D. The Abatement Contractor shall be responsible for daily personal air samples that shall be collected on a minimum of two (2) personnel or 25% of the workers performing lead removal work for the duration of the project.
- E. Air monitoring shall be performed by a qualified industrial hygienist or personnel under the direct supervision of one. The monitoring personnel must be able to prove proficiency in AIHA/NIOSH PAT program and

EPA's RTI program, or equivalent. Payment to the testing laboratory shall be by the State.

- F. All work performed by the Qualified industrial hygienist shall be under the supervision of a Certified Industrial Hygienist (CIH).
- G. Throughout the entire removal and cleaning operations, air monitoring shall be conducted to ensure that the Abatement Contractor is complying with this specification, EPA, HUD and OSHA regulations and any applicable state and local government regulations.
- H. Lead air monitoring and testing will be conducted according to the method prescribed by OSHA 29 CFR 1926.62; HIOSH 12-148.1; and HAR 11-41. Lead in air samples shall be analyzed by NIOSH Method 7082 FAAS or equivalent.
- I. Following the removal of LBP, the Qualified Consultant together with the Abatement Contractor's representative, will conduct a visual inspection of the work area. The work area shall be free of visible material or debris generated during the removal process. Also, all generated waste shall be properly packaged, labeled, and secured following each removal period or shift. The Abatement Contractor shall re-clean the work area if the Qualified Consultant does not accept that the area is visually clean. Subsequent cleaning operations due to failure of the visually acceptance shall be the responsibility of the Abatement Contractor. No change orders will be allowed.
- J. The final visual clearance inspection shall only be conducted when the work area is visually clean of debris, waste material, tools, and all other foreign materials.

15.5 PAYMENT

Payment for testing/air monitoring will not be made separately, but shall be considered incidental to the other contract items. Project final payment will not be made until a signed copy of the visual clearances and/or testing results are furnished to the State.

ARTICLE XVI - SELECTIVE DEMOLITION

16.1 GENERAL

- A. Provide all materials, labor, equipment, and tools necessary to complete selective demolition work as indicated by the design intent of the drawings.
- B. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.
- C. Selective demolition work includes but is not limited to selective demolition, removal, and subsequent disposal of all materials indicated or required to be removed.
- D. Execute all work in an orderly and careful manner with due consideration for all items of work to remain.
- E. Obvious conditions which exist on the site shall be accepted as part of the work, even though they may not be clearly indicated on the Drawings and/or described herein, or may vary therefrom.
- F. All debris of any kind accumulated from the work of this Section shall be disposed of off the Site.
- G. Protect all existing conditions surrounding the work area, including but not limited to walkways, adjacent roofs not in scope of work, etc. at all times from damage.
- H. Any damage as a result of demolition work and any neglect to provide protection shall be fixed new at no cost to the State.
- I. Demolish and remove, including but not limited to, existing damaged roof framing end blocking and sheathing; portions of existing roof drain downspout piping, etc.
- J. Properly remove and salvage all items as indicated by the Harbors.

16.2 SUBMITTALS

Schedule: Submit two copies of schedule indicating proposed methods and sequence of operations for selective demolition work to the Construction Engineer for review prior to commencement of work. Include coordination for temporary shut-off and continuation of utility services as required, together with details for dust and noise control protection.

16.3 JOB CONDITIONS

- A. Condition of Structure: The State assumes no responsibility for actual condition of items or portions of structure to be demolished.
- B. Existing Conditions: Conditions existing at time of commencement of contract will be maintained by the State insofar as practicable.
- C. Occupied Spaces: Do not interfere with use of adjacent occupied spaces. Maintain free and safe passage to and from occupied spaces.
- D. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor, may be removed from structure as work progresses. Transport salvaged items from site as they are removed. Storage or sale of removed items on site will not be permitted.
- E. Utility Services: The existence of above and below ground and exposed and concealed utility lines other than those shown on the drawings is not definitely known. Should any other utility lines be encountered, the Contractor shall immediately notify the Construction Engineer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Construction Engineer. Outages and interruptions must be accepted in advance by the Construction Engineer. Submit written notice of outages and interruptions not less than fourteen days in advance of intended outage. Report damage, however slight, immediately. Do not repair or reconstruct any pipe, conduit, or installation without authorization, except perform emergency repairs immediately.
- F. Dust Control:
 - 1. Keep dust within acceptable levels at all times, including nonworking hours, weekends and holidays, in conformance with Chapter 60.1 - Air Pollution Control of the State Department of Health, Public Health Regulations, latest edition.
 - 2. Mechanical dry sweeping not permitted. Vacuuming, wet mopping, approved limited dry hand, wet or damp sweeping is acceptable.
 - 3. During loading operations, water down debris and waste materials to allay dust.

4. The method of dust control and all costs incurred thereof shall be the responsibility of the Contractor.

G. Noise Control:

1. Noise shall be kept within acceptable levels at all times in conformance with State Department of Health, Title II, Administrative Rules, Chapter 46 - Community Noise Control.
2. The Contractor shall obtain and pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at a level exceeding the allowable limits.
3. All internal combustion engine powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
4. Starting up of on-site vehicular equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior acceptance of the Construction Engineer. Equipment exceeding allowable noise limits shall not be started up prior to 7:00 a.m.
5. Conform to noise control related to events at the project site or adjoining facilities as directed by the Construction Engineer.

H. Other Controls:

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutter and catch basins unless treated to comply with Department of Health pollution regulations.
2. Trucks hauling materials shall be covered as required by PUC regulation. Trucks hauling fine materials shall be covered.
3. Existing Conditions: The Contractor shall be responsible for protection of existing conditions for the entire duration of the project. Damage to the existing conditions as a result of the work of this section shall be corrected at no additional cost to the State.

16.4 INSPECTION - Prior to commencement of selective demolition work, inspect areas in which work will be performed. Inventory existing conditions of surfaces, equipment or surrounding properties which could be misconstrued as damage resulting

from selective demolition work; photograph, video or otherwise document and file with the Construction Engineer prior to starting work. No compensation from the State shall be provided without proof of existing damage by the Contractor.

16.5 BARRICADES

- A. Erect temporary barricades as required, to prevent people from entering into project area to the extent as accepted by the Construction Engineer. The extent of barricade may be adjusted as necessary with the acceptance of the Construction Engineer. This work shall be accomplished at no extra cost to the State.
- B. When necessary, the Contractor shall provide, erect and maintain barriers, etc., as required by traffic and safety regulations with special attention to protection of life.

16.6 SELECTIVE DEMOLITION

- A. Perform selective demolition work, including all exterior and interior improvements indicated on the drawings, in a systematic manner. Use such methods as required to complete work indicated on drawings in accordance with demolition schedule and governing regulations.
 - 1. Demolish concrete in small sections. Cut concrete at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
 - 2. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction. All dust shall be suppressed by a fog spray or other approved method.
 - 3. Water and sewer facilities shall be available and in operating condition at all times.
- B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Construction Engineer in written, accurate detail. Pending receipt of directive from the Construction Engineer rearrange selective demolition schedule as necessary to continue overall job progress without delay.

16.7 PROTECTIONS - Provide temporary barricades and other forms of protection as required to protect the general public from injury due to selective demolition work.

- A. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or elements to be removed, and adjacent facilities or work to remain.
- B. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
- C. Life safety procedures and provisions shall be in conformance with all applicable Federal, State, and City and County regulations, including OSHA.
- D. Remove protections at completion of work.

16.8 DAMAGES - Promptly repair damages caused to adjacent facilities by demolition work at no cost to the State.

16.9 DISPOSAL OF DEMOLISHED MATERIALS - Remove debris, rubbish, and other materials resulting from demolition operations from building site daily. Transport and legally dispose of materials off site.

- A. If hazardous materials are encountered during demolition operations, comply with applicable regulation, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- B. Burning of removed materials is not permitted on project site.

16.10 CLEAN-UP AND REPAIR

- A. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. Return temporarily relocated furniture, equipment, supplies back to their original locations per existing conditions following completion of floor repair work to make space ready for next business day for Harbors operations, if required by the Construction Engineer.

16.11 PAYMENT - Payment for Selective Demolition shall be made as described in Article X of these Specifications.

ARTICLE XVII - JOINT SEALANTS

17.1 SUMMARY

- A. Provide all sealants to completely close all joints indicated on the drawings or specified to be sealed to a watertight condition, including the following:
 - 1. Interior joints.
 - 2. Silicone sealant.
 - 3. Acoustical sealant.
- B. Related Work Specified Elsewhere:
Article XXIV - PAINTING: Coordinate work.

17.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and specifications for type of sealant required for approval.
- B. Shop Drawings: Submit color finish samples of each sealant for approval.
- C. Guaranty: Submit guaranty as noted under item entitled "GUARANTY" hereinbelow.

17.3 GUARANTY

The Contractor shall submit a written guaranty on the sealant for a two (2) year period after the project acceptance date. The guaranty shall provide for the repair of all leaks as well as repair and replacement of sealant and damage to the building and/or its finishes at no cost to the Harbors.

17.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

- C. Preconstruction Compatibility and Adhesion Testing: Use manufacturers standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

17.5 PERFORMANCE REQUIREMENTS

Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

17.6 PRODUCT HANDLING

- A. Delivery: Deliver sealants to the jobsite in sealed containers labeled to show the designated name, formula, or specification number, lot number, color, date of manufacture, shelf life, curing time, manufacturer's directions, and name of manufacturer.
- B. Storage: Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high temperatures, contaminants, or other causes.

17.7 PROJECT CONDITIONS

- A. Inspection: Examine joint surfaces and backing, and their anchorage to the structure, and condition under which joint sealer work is to be performed, and notify Contractor in writing of conditions detrimental to proper completion of the work and performance of sealers. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- B. Weather Conditions: Do not proceed with installation of sealants under adverse weather conditions. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength.

17.8 MATERIALS

- A. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyethylene-jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, nonabsorptive material as recommended for compatibility with sealant by the sealant manufacturer to control the joint depth for sealant placement, to break bond of sealant at bottom of joint, to form optimum shape of sealant bead on back side, and

to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed.

- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure.
- C. Primer for Sealants: Non-staining, as recommended by the sealant manufacturer.
- D. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.
- E. Sealants:
 - 1. Sealant No. 1, At Interior Vertical and Overhead Joints: Non-Elastomeric Sealant; acrylic-emulsion type, conforming to ASTM C 834. Provide one of the following, or approved equal products of other manufacturers:
 - a. AC-20 Acrylic Latex; Pecora Corp.
 - b. Chem-Calk 600; Bostik Inc.
 - c. Tremflex 834; Tremco.
 - 2. Sealant No. 2, Silicone Sealant: Mildew-resistant, conforming to ASTM C 920; Type S; Grade NS; Class 25; Use NT, formulated with fungicide; intended for sealing interior joints between plumbing fixtures and wall surfaces. Provide one of the following or approved equal products of other manufacturers:
 - A. 786 Mildew Resistant; Dow Corning Corp.
 - B. 898 Silicone Sanitary Sealant; Pecora Corp.
 - C. Tremsil 600 White; Tremco.
 - 3. Sealant No. 3, Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag interior sealant complying with ASTM C 834. Provide one of the following or approved equal:
 - a. AC-20 FTR Acoustical and Insulation Sealant; Pecora Corp.
 - b. SHEETROCK Acoustical Sealant; USG Corp.
 - c. Tremflex 834; Tremco.

F. Bituminous Joint Filler:

1. Provide resilient and non-extruding type premolded bituminous composition of organic fiber or granulated cork, between 2 bituminous felt liners, complying with ASTM D 944 of D 1751, AASHTO M 33 or M 213, and (if fiber type) Fed. Spec. HH-F-341, Type III.
2. Provide one of the following products, or approved equal products of other manufacturers:
 - a. “Elastite” Celotex
 - b. “Tex-Mastic”; J.P. Petroleum Products
 - c. “Corkfill”; W.R. Meadows

17.9 MANUFACTURER’S INSTRUCTIONS

Comply with manufacturer’s printed instructions except where more stringent requirements are shown or specified, and except where manufacturer’s technical representative directs otherwise.

17.10 EXAMINATION

Examine joints indicated to receive joint sealers, with Installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

17.11 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; water; and surface dirt.
 2. Clean concrete, masonry, and similar porous joint substrate surfaces, by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate

capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

3. Remove laitance and form release agents from concrete.
 4. Clean metal, glass, glazed surfaces of hard tile; and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

17.12 INSTALLATION OF JOINT SEALERS

- A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply. Do not apply sealants on wet surfaces.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions.
- C. Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.
- D. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications.
- E. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-

sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

- a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.
2. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.
 3. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.
- F. Primer: Immediately prior to application of the sealant, clean out all loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry units, wood, and other porous surfaces in accordance with compound manufacturer's instructions. Do not apply primer to exposed finish surfaces.
- G. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.
- H. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
 2. Provide flush joint configuration per Figure 5B in ASTM C 1193, where indicated.

17.13 JOINT SEALANT SCHEDULE

- A. Sealant and Location: Install sealants indicated in joints fitting descriptions and locations as well as in location where sealant is typically applied and as shown on the drawings, including but not limited to the following locations.
- B. Sealant No. 1:
1. Small voids between walls or partitions and adjacent casework, shelving, door frames, built-in or surface-mounted equipment and fixtures, and similar items.
 2. Perimeter of frames at doors and windows which adjoin exposed interior concrete and masonry surfaces.
 3. Interior locations, not otherwise indicated or specified, where small voids exist between materials specified to be painted.
- C. Sealant No. 2:
1. Joints between plumbing fixtures and adjoining surfaces.
 2. Joints occurring where substrates change.
- D. Sealant No. 3:
1. Interior sealing of exposed joints.
 2. Interior sealing of concealed construction joints.

17.14 CLEANING

Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

17.15 PROTECTION

Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of project acceptance. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new

materials to produce joint sealer installations with repaired areas indistinguishable from original work.

17.16 PAYMENT - Payment for Joint Sealants shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XVIII - BLANKET INSULATION

18.1 SUMMARY

- A. Provide all insulation as indicated on the drawings and as specified herein, including the following:
 - 1. Batt type sound attenuation insulation installed in interior stud walls.
- B. Related Work Specified Elsewhere:

ARTICLE XXII - GYPSUM BOARD: Coordinate installations in wall.

18.2 SUBMITTALS

Product Data: Submit manufacturer's product data, specifications, and installation instructions for type of insulation required. Include data substantiating that materials comply with specified requirements.

18.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

18.4 PRODUCT HANDLING

Protection from Deterioration: Do not allow insulation materials to become wet or soiled. Comply with manufacturer's recommendations for handling, storage, and protection during installation.

18.5 MATERIALS

- A. General: Provide insulation materials that comply with requirements and with referenced standards.
- B. Sound Attenuation Batt Insulation in Interior Stud Walls: Fiberglass batt, ASTM C 665, Type I, approximately 3-1/2 inch thick unless otherwise indicated to be thinner to match stud size.

18.6 INSPECTION

Installer shall examine surfaces and conditions under which batt insulation is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

18.7 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the work.
 - 2. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.
 - 3. Apply a single layer of insulation of the required thickness, unless otherwise shown or required to make up the total thickness.
- B. Wall Insulation: Install insulation to fit tightly against studs. Carry insulation full height from floor to underside of structure unless otherwise indicated on the drawings. Size width of insulation to fit snug where studs are irregularly spaced. Butt ends tightly at joints.
- C. Protection: Protect installed insulation from harmful weather exposure and physical damage where possible by not delaying installation of covering work or where not possible, by temporary covering or enclosure.

18.8 BLOCKING AROUND HEAT PRODUCING DEVICES

- A. Install non-combustible blocking around heat producing devices to provide the following minimum clearances as described below.
- B. Recessed lighting fixtures, including wiring compartments, ballasts, and other heat producing devices, unless these are certified by the manufacturer for installation surrounding by insulation, install 3-inches from outside face of fixtures and devices or as required by NFPA 70 and, if insulation is to be placed above fixture or device, 24-inches above fixture.

18.9 PAYMENT - Payment for Blanket Insulation shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XIX - STEEL DOORS AND FRAMES

19.1 GENERAL

- A. Provide all steel doors and frames as indicated on the drawings and specified herein, including the following:
 - 1. Steel doors.
 - 2. Steel door frames.
- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XX - DOOR HARDWARE: Door hardware installation.
 - 2. ARTICLE XXIV - PAINTING: Field painting factory-primed doors and frames.

19.2 SUBMITTALS

- A. Product Data: Submit product data for each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, and finishes.
- B. Shop Drawings: Submit shop drawings showing the following:
 - 1. Elevations of each door design.
 - 2. Details of doors, including vertical and horizontal edge details.
 - 3. Frame details for each frame type, including dimensioned profiles.
 - 4. Details and locations of reinforcement and preparations for hardware
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, accessories, joints, and connections.
- C. Door Schedule: Submit door schedule using the same reference designations indicated on drawings in preparing schedule for doors and frames.

19.3 QUALITY ASSURANCE - Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.

19.4 PRODUCT HANDLING

- A. Delivery: Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.
- B. Inspection: Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work. Remove and replace damaged items that cannot be repaired.
- C. Storage: Store doors and frames at building site under cover. Place units on minimum 4-inch high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

19.5 MATERIALS

- A. Metallic-Coated Steel Sheets: ASTM A 653/A 653M, Commercial Steel (CS), Type B, with an A60 zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.
- B. Doors
 - 1. General: Provide doors of sizes, thicknesses, and designs indicated.
 - 2. Doors: Provide doors complying with Level 3 and Physical Performance Level A (Extra Heavy Duty), Model 2 (Seamless), minimum 16 gauge, by referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-endurance level.
- C. Frames
 - 1. General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated.
 - 2. Frames: Provide minimum 16 gauge steel sheet.

3. Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.
4. Plaster Guards: Provide 26 gauge steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware openings.
5. Supports and Anchors: Fabricated from not less than 18 gauge, electrolytic zinc-coated or metallic-coated steel sheet.
6. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

19.6 FABRICATION

- A. General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects, including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.
- B. Door Construction: Fabricate doors, panels, and frames from metallic-coated steel sheet. Close top and bottom edges of doors flush as an integral part of door construction or by addition of minimum 16 gauge, metallic-coated steel channels with channel webs placed even with the top and bottom edges.
- C. Core Construction: Manufacturer's standard core construction that produces a door complying with SDI standards.
- D. Clearances for Non-Fire-Rated Doors: Not more than 1/8-inch at jambs and heads, except not more than 1/4-inch between pairs of doors. Not more than 3/4-inch at bottom.
- E. Single-Acting, Door-Edge Profile: Beveled edge, unless square edge is indicated.
- F. Tolerances: Comply with SDI117, "Manufacturing Tolerances for Standard Steel Doors and Frames".

- G. Fabrications: Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.
- H. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- I. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware. For concealed overhead door closers, provide space, cutouts, reinforcement, and provisions for fastening in top rail of doors or head of frames, as applicable.
- J. Frame Construction:
 - 1. Fabricate frames to shape shown.
 - 2. Fabricate frames with mitered or coped and continuously welded corners and seamless face joints.
- K. Reinforcements: Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
- L. Hardware: Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.
- M. Grouted Frames: Grout where indicated as recommended by the manufacturer.

19.7 FINISHES

- A. Primer: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.
- B. Finish: Paint as specified in ARTICLE XXIV - PAINTING.

19.8 INSTALLATION

- A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

- B. Placing Frames: Comply with provisions in ANSI 250.11, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged. Install according to the following requirements where conditions occur.
1. Place frames before construction of enclosing walls and ceilings.
 2. In masonry construction, provide at least 3 wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
 3. In metal-stud partitions, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.
 4. For openings 90-inches or more in height, install an additional anchor at hinge and strike jambs.
- C. Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.

19.9 ADJUSTING AND CLEANING

- A. Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.
- B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

19.10 PAYMENT - Payment for Steel Door and Frames shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XX- DOOR HARDWARE

20.1 SUMMARY

- A. Section Includes:
 - 1. Door hardware.
- B. Related Work Specified Elsewhere:

ARTICLE XIX - STEEL DOOR AND FRAME
- D. Provide all materials, labor, equipment and tools necessary to complete finish hardware work for all doors whether specified or not.
- E. Furnish and deliver to the building site, all finishing hardware required for all doors, etc., complete as indicated on the drawings and as specified herein.
- F. It is the intent of these specifications to cover in general the class and character of all finish hardware required.
- G. The hardware list specified hereinafter has been made for the convenience of the Contractor and covers in general the necessary hardware for doors, but all other doors, etc., shown on the plan and not covered by the general characterization shall be fitted with appropriate hardware of the same standards as the hardware described throughout these specifications. Contractor shall furnish hardware schedule as hereinafter specified.

20.2 REFERENCES

- A. Use date of standard in effect as of Bid date.
 - 1. American National Standards Institute - ANSI 156.18 - Materials and Finishes.
 - a. ICC/ANSI A117.1 - 1998 - Specifications for making buildings and facilities usable by physically handicapped people.
 - b. ANSI A156.18 Materials and Finishes
 - 2. ADA - Americans with Disabilities Act
 - 3. BHMA - Builders Hardware Manufacturers Association

4. DHI - Door and Hardware Institute
5. NFPA - National Fire Protection Association
 - a. NFPA 80 - Fire Doors and Windows
 - b. NFPA 105 - Smoke and Draft Control Door Assemblies
 - c. NFPA 252 - Fire Tests of Door Assemblies
6. UL - Underwriters Laboratories
 - a. UL10C - Positive Pressure Fire Tests of Door Assemblies.
 - b. UL 305 - Panic Hardware
7. WHI - Warnock Hersey Incorporated
8. Local applicable codes
9. WI - Woodwork Institute
10. AWI - Architectural Woodwork Institute
11. NAAMM - National Association of Architectural Metal Manufacturers

B. Abbreviations

1. Manufacturers: see 20.8 of this section
2. Finishes: see 20.14 of this section.

20.3 SUBMITTALS & SUBSTITUTIONS

- A. SUBMITTALS: Submit schedule as required. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening. Minimum 10pt font size. Include following information:
 1. Product Data: Submit manufacturer’s descriptive literature along with schedule for information only.
 2. Schedule: Submit schedule of hardware in compliance with specifications and drawings. List each opening and hardware to be applied. State material, finish and manufacturer’s number for each item. Required minimum types are listed under item entitled “HARDWARE SCHEDULE” hereinbelow.

3. Keying Schedule: Submit keying schedule for approval by the Harbors. Keying Schedule shall be submitted listed in D.H.I. document "Keying Terminology". Door designation listed in the Keying Schedule shall be same as those used on drawings and hardware schedule.
 4. Warranty: Submit warranty as noted under paragraph entitled "WARRANTY" hereinbelow.
- B. Bid and submit manufacturer's updated/improved item if scheduled item is discontinued.
 - C. Deviations: Highlight, encircle or otherwise identify deviations from "Schedule of Finish Hardware" on submittal with notations clearly designating those portions as deviating from this section.
 - D. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from the Construction Engineer for resolution.
 - E. Substitutions per Division 1. Include product data and indicate benefit to the Project. Furnish operating samples on request.
 - F. Items listed with no substitute manufacturers have been requested by Harbors to meet existing standard.
 - G. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

20.4 QUALITY ASSURANCE

- A. Qualifications:
 1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course of work for project hardware consultation to Construction Engineer and Contractor.
 - a. Responsible for detailing, scheduling and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.

- B. Hardware: Free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.
- C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
- D. Fire-Rated Openings: NFPA 80 compliant. Hardware UL10C / IBC 2003 Section 715.4.1 (positive pressure) compliant for given type/size opening and degree of label. Provide proper latching hardware, non-flaming door closers, approved- bearing hinges, and resilient seals. Coordinate with wood door section for required intumescent seals. Furnish openings complete.
- F. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions and code requirements.

20.5 WARRANTY - All door hardware shall be supplied with a two (2) year written warranty from the manufacturer agreeing to repair or replace components of door hardware that fail in materials, workmanship, function and/or operation commencing from the project acceptance date at no cost to the State.

20.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: coordinate delivery to appropriate locations (shop or field).
Permanent keys and cores: secured delivery direct to Harbors.
- B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.
- C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

20.7 PROJECT CONDITIONS AND COORDINATION

- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to the Construction Engineer's approval.

- B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:
1. Location of embedded and attached items to concrete.
 2. Location of wall-mounted hardware, including wall stops.
 3. Location of finish floor materials and floor-mounted hardware.
 4. At masonry construction, coordinate with the anchoring and hollow metal supplier prior to frame installation by placing a strip of insulation, wood, or foam, on the back of the hollow metal frame behind the rabbet section for continuous hinges, as well as at rim panic hardware strike locations, silencers, coordinators, and door closer arm locations. When the frame is grouted in place, the backing will allow drilling and tapping without dulling or breaking the installer's bits.
 5. Locations for conduit and raceways as needed for electrical hardware items. Fire/life-safety system interfacing. Point-to-point wiring diagrams plus riser diagrams to related trades.
 6. Coordinate: flush top rails of doors at outswinging exteriors, and throughout where adhesive-mounted seals occur.
 7. Manufacturers' templates to door and frame fabricators.
- C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
- D. Environmental considerations: segregate unused recyclable paper and paper product packaging, uninstalled metals, and plastics, and have these sent to a recycling center.
- E. Prior to submittal, carefully inspect existing conditions to verify finish hardware required to complete Work, including sizes, quantities, existing hardware scheduled for re-use, and sill condition material. If conflict between the specified/scheduled hardware and existing conditions, submit request for direction from the Construction Engineer. Include date of jobsite visit in the submittal.

Submittals prepared without thorough jobsite visit by qualified hardware expert will be rejected as non-compliant.

20.8 WARRANTY

- A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties:
1. Extra Heavy Duty Commercial Mortise Lock (L-Series): Ten Years
 2. Closers (4000/1460 Series): mechanical Thirty years
 3. Other Hardware Two years

20.9 COMMISSIONING

- A. Conduct these tests prior to request for certificate of substantial completion:
1. With installer present, test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.
 2. With installer and electrical contractor present, test hardware interfaced with fire/life-safety system for proper operation and release

20.10 MANUFACTURERS

- A. Requirements for design, grade, function, finish, size, etc. is indicated in the HARDWARE SCHEDULE. Products are identified by using proprietary manufacturer's numbers to establish quality and functions. Approved equal products of other manufacturers are acceptable.

20.11 HINGING METHODS

- A. Drawings typically depict doors at 90 degree, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise Construction Engineer if 8-inch width is insufficient.
- B. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices, notify Construction Engineer of deviation from

scheduled hardware.

- C. Conventional Hinges: Steel or stainless steel pins and concealed bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.
1. Outswing exterior doors: non-ferrous with non-removable (NRP) pins and security studs.
 2. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

20.12 LOCKSETS, LATCHSETS, DEADBOLTS

- A. Heavy Duty Full Mortise Locks and Latches: as scheduled.
1. Chassis: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.
 2. Locking Spindle: stainless steel, integrated spring and spindle design.
 3. Latch Retractors: forged steel. Balance of inner parts: corrosion-resistant plated steel, or stainless steel.
 4. Latchbolt: solid steel.
 5. Backset: 2.75 inches typically, more or less as needed to accommodate frame, door or other hardware.
 6. Lever Trim: accessible design, independent operation, spring-cage supported, minimum 2.00 inches clearance from lever mid-point to door face.
 7. Strikes: 16 gage curved steel, bronze or brass with 1.00 inch deep box construction, lips of sufficient length to clear trim and protect clothing.
 8. Lock Series and Design: Schlage ND series, "Rhodes" design.
 9. Certifications:
 - a. ANSI A ANSI A156.2, 1994, Series 4000, Grade 1.
 - b. UL listed for A label and lesser class single doors up to 4

feet x 8 feet. 156.2, 1994, Series 4000, Grade 1.

20.13 OTHER HARDWARE

- A. Kick Plates: Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.
- B. Door Stops: Provide stops to protect walls, casework or other hardware.
 - 1. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide overhead type.
- C. Seals: Inelastic, rigid back, not subject to stretching. Self-compensating for warp, thermal bow, door settling, and out-of-plumb. Adhesive warranted for life of installation.
- D. Thresholds: As scheduled and per details. Comply with ICC/ANSI A117.1 Section 404.2.4 & 303. Substitute products: certify that the products equal or exceed specified material's thickness. Proposed substitutions: submit for approval.
 - 1. Saddle Thresholds: 0.125 inches minimum thickness.
 - 2. Exteriors: Seal perimeter to exclude water and vermin. Use sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Minimum 0.25 inch diameter fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).
 - 3. Fire-rated openings, 90-minutes or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use threshold unit as scheduled. If none scheduled, request direction from the Construction Engineer.
 - 4. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.
 - 5. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

- E. Through-bolts: Do not use. Coordinate with wood doors; ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers. Coordinate with metal doors and frames; ensure provision of proper reinforcement to support machine screws for mounting panic hardware and door closers.

Exception: surface-mounted overhead stops, holders, and friction stays.

- F. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors.

Leave no unfilled/uncovered pre-punched silencer holes.

Intent: door bears against silencers, seals make minimal contact with minimal compression - only enough to effect a seal.

20.14 FINISH

- A. Generally: BHMA 626 Satin Chromium.

1. Areas using BHMA 626: furnish push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise scheduled.

20.15 GENERAL CHARACTER

- A. All hardware shall be of the best quality in construction, design and finish, and free from any defects. Any defective pieces shall be replaced by the Contractor at his own expense.
- B. Hardware shall be of the manufacture, type, weight, function and quality as shown by factory numbers in the HARDWARE SCHEDULE herein or an approved equal.
- C. Mortise Locks and Latches: In accordance with ANSI/BHMA A156.13.
- D. Bored Locks and Latches: In accordance with ANSI/BHMA A156.2
- E. Hinges: In accordance with ANSI/BHMA A156.1.
- F. Closers: In accordance with ANSI/BHMA A156.4. Adjust door closers where provided to conform to ADAAG Section 404.2.8.1.
- G. Cylinders: All cylinders shall be as manufactured by a single manufacturer.

- H. Finish: In accordance with ANSI/BHMA A156.18. All hardware items shall be furnished in the finish as indicated in the HARDWARE SCHEDULE. Contractor shall replace all items with defects or blemishes at no additional cost to the State.

20.16 ADAAG REQUIREMENTS

- A. Hardware:
1. All door hardware shall comply with the requirements of the Americans with Disability Act Accessibility Guidelines (ADAAG) Sections 404.1.
 2. Operable hardware shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate in compliance with ADAAG 309.4.
- B. Accessible doors: Door required to be accessible by ADAAG 404.1 shall comply with requirements of ADAAG 404.2.9. The maximum force for pushing or pulling open a door shall be as follows: Interior Hinged Doors, 5 lbs.

These forces do not apply to the force required to retract the latch bolts, or disengage other devices that may hold the door in a closed position.

20.17 KEYING

- A. Locks shall have four (4) keys each. Locks for the same rooms shall be keyed alike. During period of construction, all locks shall be operated by a special construction key. All keys shall be stamped "DO NOT DUPLICATE" at the point of manufacture. Proper certification of factory assembly of all locks and cylinders as well as factory master keying shall be furnished by the Contractor prior to final acceptance of this portion of the work.
- B. Keying Schedule:
1. Keying system shall match existing or as directed by the Harbors. Revise deadlock as required to match existing at no additional cost to the State.
 2. It shall be the responsibility of the hardware supplier or hardware manufacturer's representative to meet with the Construction Engineer to review the keying requirements and establish the final keying arrangements.

3. Hardware Supplier shall submit keying schedule, along with hardware schedule, clearly showing how the State's final instructions on keying of locks have been fulfilled.

20.18 FASTENINGS

- A. Furnish necessary screws, bolts, and other fastenings for proper application of hardware. Fastenings shall be of suitable size and type, and of sufficient length to secure hardware for heavy use. Fastenings must harmonize with the hardware as to material and finish. All fasteners shall be stainless steel.
- B. Furnish necessary expansion shields, toggle bolts, machine or wood screws or other suitable approved anchoring devices where hardware is to be installed on concrete, masonry or other types of backing.

20.19 TEMPLATES - Furnish templates as required to the Contractor within seven (7) days after receipt of approved hardware schedule.

20.20 TOOLS AND INSTRUCTIONS - Furnish all tools and maintenance or installation instruction packed with the closers and locksets to the Harbors when the project is completed.

20.21 INSTALLATION

- A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by the Construction Engineer.
 1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
 2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
 3. Use manufacturers' fasteners furnished with hardware items, or submit Request for Substitution with Construction Engineer.

4. Replace fasteners damaged by power-driven tools.
- B. Locate floor stops no more than 4 inches from walls and not within paths of travel. See paragraph 22.10 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Construction Engineer direction.
 - C. Drill pilot holes for fasteners in wood doors and/or frames.
 - D. Lubricate and adjust existing hardware scheduled to remain.
 - E. Field-verify existing conditions and measurements prior to ordering hardware. Fill existing hardware cut outs not being used by the new hardware.
 - F. Where existing wall conditions will not allow door to swing using the scheduled hinges, provide wide-throw hinges and if needed, extended arms on closers.
 - G. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
 - H. Fit face of all mortise parts snug and flush.
 - I. Operating parts shall move freely and smoothly without binding, sticking or excessive clearance.
 - J. Install latch and bolt to automatically engage into strike, whether activated by closer or manual push. In no case shall additional manual pressure be required to engage latch or bolt into strike.
 - K. Protect hardware from damage or marring of finish during construction. Replace all damaged or marred hardware at no additional cost.
 - L. Adjust closers to operate noiselessly and evenly and to conform to ADAAG requirements.
 - M. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by the Construction Engineer.
 1. “Recommended Locations for Builders Hardware for Standard Steel Doors and Frames” by the Door and Hardware Institute.

2. “Recommended Locations for Architectural Hardware for Flush Wood Doors” By Door and Hardware Institute.
3. Americans with Disabilities Act Accessibility Guidelines (ADAAG), Section 404.1.

20.22 ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
 1. Hardware damaged by improper installation or adjustment methods: repair or replace to Harbors’ satisfaction.
 2. Adjust doors to fully latch with no more than 1 pound of pressure.
 3. Adjust door closers for proper function.
- B. Final inspection: Installer to provide letter to Harbors that upon completion installer has visited the Project and has accomplished the following:
 1. Has re-adjusted hardware.
 2. Has evaluated maintenance procedures and recommend changes or additions, and instructed Harbors’ personnel.
 3. Has identified items that have deteriorated or failed.
 4. Has submitted written report identifying problems.

20.23 DEMONSTRATION

- A. Demonstrate mechanical hardware and electrical hardware systems, including adjustment and maintenance procedures.

20.24 PROTECTION/CLEANING

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation /

reinstallation process.

20.25 SCHEDULE OF FINISH HARDWARE

A. See door schedule in drawings for hardware set assignments.

HW GROUP - 001
(NEW ELEVATOR EQUIPMENT CLOSET)

6	EA	HINGE	TA2314 4.5 X 4.5	US32D-NRP	MCK
1	EA	STOREROOM LOCK	8204 LNL	US26D WBX	SAR
1	EA	MORTISE CYLINDER	E6551-1	626 COMP	ASA
2	EA	AUTOMATIC FLUSH BOLT	2842	626	ROC
2	EA	DOOR CLOSER	351	P9 EN	SAR
1	EA	DOOR SEAL	PK55D25		PEM
2	EA	DOOR BOTTOM	210AV 36"		PEM
1	EA	THRESHOLD	171A 72"		PEM
2	EA	WALL STOP (CONVEX)	406	630	ROC

Key to existing.

20.26 PAYMENT - Payment for Door Hardware shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XXI - LOUVERS

21.1 SUMMARY

- A. Provide all louvers as indicated on the drawings and as specified herein.
- B. Related Work Specified Elsewhere: ARTICLE XVII - JOINT SEALANTS: Field applied sealants.

21.2 SUBMITTALS

- A. Submit in accordance with these Specifications.
- B. Product Data: Submit product data for each type of product indicated. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.
- C. Shop Drawings: Submit shop drawings for louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show blade profiles, angles, and spacing.
- D. Samples: Submit manufacturer's full range of samples for each type of metal finish required for selection.

21.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain louvers through one source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.
- B. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code - Aluminum".
- C. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

21.4 DEFINITIONS

Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined or in referenced standards.

21.5 PERFORMANCE REQUIREMENTS

- A. **Structural Performance:** Provide louvers capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act on vertical projection of louvers.

Wind Loads: Louvers to withstand wind velocity of 105 mph, Exposure B, in accordance with current International Building Code.

- B. **Thermal Movements:** Provide louvers that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

Temperature Change (Range): 120 degrees Fahrenheit, ambient; 180 degrees Fahrenheit, material surfaces.

- C. **Air-Performance and Water-Penetration:** Provide louvers complying with manufacturer's performance requirements, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

21.6 PROJECT CONDITIONS

Field Measurements: Verify louver openings by field measurements before fabrication and indicate measurements on Shop Drawings.

21.7 MANUFACTURER

Provide Airlite Company "Louver Type K6772" or pre-approved equal products of Construction Specialties, Inc. or Industrial Louvers, Inc.

21.8 FIXED, EXTRUDED-ALUMINUM LOUVERS

- A. **Blade Profile:** Drainable blade spaced 2-inches on center.
- B. **Louver Depth:** 2-inches.

- C. Frame and Blade Nominal Thickness: As required to comply with structural performance requirements, but not less than 0.063-inch for blades and frames.
- D. Mullion Type: Exposed.
- E. Performance Requirements:
 - 1. Free Area: Not less than 8.76 square feet for 48-inch wide by 48-inch high louver.
 - 2. Water Penetration: Maximum of 0.01 ounce at an airflow of 858 fpm.

21.9 MATERIALS

- A. Aluminum Extrusions: ASTM B 221, alloy 6063-T6.
- B. Aluminum Sheet: ASTM B 209, alloy 3003 or alloy 5005 with temper as required for forming, or as otherwise recommended by metal producer for required finish.
- C. Fasteners: Of same basic metal and alloy as fastened metal or 300 Series stainless steel, unless otherwise indicated. Do not use metals that are incompatible with joined materials.
 - 1. Use types and sizes to suit unit installation conditions.
 - 2. Use Phillips flat-head screws for exposed fasteners, unless otherwise indicated.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

21.10 FABRICATION, GENERAL

- A. Assemble louvers in factory to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Maintain equal louver blade spacing to produce uniform appearance.
- C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances,

adjoining material tolerances, and perimeter sealant joints.

Frame Type: Channel, unless otherwise indicated.

- D. Include supports, anchorages, and accessories required for complete assembly.
- E. Provide vertical mullions of type and at spacings indicated, but not more than recommended by manufacturer, or 72-inches on center, whichever is less.

Exposed Mullions: Where indicated, provide units with exposed mullions of same width and depth as louver frame. Where length of louver exceeds fabrication and handling limitations, provide interlocking split mullions designed to permit expansion and contraction.

- F. Where indicated, provide subsills made of same material as louvers or extended sills for recessed louvers.
- G. Join frame members to each other and to fixed louver blades with fillet welds, threaded fasteners, or both, as standard with louver manufacturer, concealed from view, unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

21.11 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish louvers after assembly.

21.12 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
- B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
- C. High-Performance Organic Coating Finish: AA-C12C42RIx (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoridephosphate conversion coating; Organic Coating: as specified

below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.

Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605. Color and Gloss: As selected as per submittals.

21.13 EXAMINATION

Examine substrates and openings, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

21.14 PREPARATION

Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

21.15 INSTALLATION

- A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
- E. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.
- F. Protect galvanized and nonferrous-metal surfaces from corrosion or

galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

- G. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with ARTICLE XVII - JOINT SEALANTS for sealants applied during louver installation.

21.16 ADJUSTING AND CLEANING

- A. Clean exposed surfaces of louvers that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.
- B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Restore louvers damaged during installation and construction so no evidence remains of corrective work. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating. If results of restoration are unsuccessful, remove damaged units and replace with new units.

21.17 PAYMENT - Payment for Louvers shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XXII - GYPSUM BOARD

22.10 SUMMARY

- A. Provide all gypsum board where indicated on the drawings and as specified herein. Work shall include, but not be limited to, the following:
 - 1. Interior gypsum boards.
 - 2. Non-load bearing studs.

22.11 SUBMITTALS

- A. Submit in accordance with these Specifications.
- B. Product Data: Submit product data for each type of product specified. Include manufacturer's recommended installation instructions.
 - 1. Fasteners
 - 2. Joint treatment materials
 - 3. Accessories
 - 4. Cementitious backer units

22.12 QUALITY ASSURANCE

- A. Industry Standard: Comply with applicable requirements of GA-216, "Application and Finishing of Gypsum Board", by the Gypsum Association, except where more detailed or more stringent requirements are indicated, including the recommendations of the manufacturer, and GA-214, "Recommended Specification: Levels of Gypsum Board Finish", by the Gypsum Association.
- B. Fire Resistance: For walls and ceiling where indicated or requiring fire-resistance-rated gypsum board assemblies, comply with following requirements:
 - 1. Fire-Resistance Ratings: As indicated by GA File Numbers in GA-600, "Fire Resistance Design Manual", or design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

2. Gypsum board assemblies indicated are identical to assemblies tested for fire resistance according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

22.13 PRODUCT HANDLING - Deliver gypsum board materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type, and grade; store in a dry well-ventilated space, protected from the weather, under cover, and off the ground. Stack gypsum panels flat to prevent sagging.

22.14 MATERIALS

- A. Cementitious Backer Units: ANSI A118.9, Regular, 48 inches wide, thickness as indicated.
- B. Joint Treatment Materials - ASTM C 475.
 1. Embedding Compound: Specifically formulated and manufactured for use in embedding tape at gypsum board joints and completely compatible with tape, substrate and fasteners.
 2. Finishing or Topping Compound: Specifically formulated and manufactured for use as a finishing compound.
 3. All-Purpose Compound: Specifically formulated and manufactured to serve as both a taping and a finishing compound and compatible with tape, substrate and fasteners.
 4. Joint Tape: Cross-laminated, tapered edge, reinforced paper, or special tape recommended by the manufacturer.
- C. Wallboard Fasteners: ASTM C 1002. Type "S" steel drill screws. Use specially designed steel screws as recommended by the manufacturer of the gypsum board for the screw application of gypsum board to steel framing.
- D. Non-Load Bearing Studs: ASTM C 645 "Non-Load (Axial) Bearing Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board". Studs shall be rolled formed channel of minimum 20 gauge galvanized steel, ASTM A 653 "Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process", G60 coating. Provide holes and notches for conduit or electrical wiring. Adjust stud to a heavier gauge where required by the manufacturer's recommendations for stud wall heights.

- E. PVC Trim Accessories: ASTM C 1047. Fabricate from plastic designed for its intended use. Flanges shall be free from dirt, grease, and other materials that may adversely affect the bond of joint treatment.
- F. Water: Clean, fresh, and potable.

22.15 EXAMINATION - Verify that framing and furring are securely attached and of sizes and spacing to provide a suitable substrate to receive gypsum board. Verify that all blocking, headers and supports are in place to support plumbing fixtures and to receive soap dishes, grab bars, and similar items. Do not proceed with work until framing and furring are acceptable for application of gypsum board and unsatisfactory conditions have been corrected.

22.16 APPLICATION OF CEMENTITIOUS BACKER UNITS

- A. Application: Apply cementitious backer units in accordance with ANSI A108.11.
- B. Joint Treatment: ANSI A108.11.

22.17 INSTALLATION OF STEEL FRAMING, GENERAL

- A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

22.18 INSTALLATION OF STEEL FRAMING FOR WALLS AND PARTITIONS AND SOFFIT FRAMING

- A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum drywall stud system abuts other construction. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.
- B. Install each steel framing and furring member so that fastening surface do not vary more than 1/8-inch from plane of faces of adjacent framing. Align plumb and square.

- C. Extend partition framing full height to structural supports, unless otherwise indicated. Continue framing over frames for doors and openings to provide support for gypsum board.
- D. Install steel studs and furring in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard. For single layer construction, 16-inches on center, except as otherwise indicated.
- E. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
- F. Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings.

22.19 PROTECTION - Provide final protection and maintain conditions, in a manner suitable to installer, which ensures gypsum drywall construction being without damage or deterioration at time of project acceptance.

22.20 PAYMENT - Payment for Gypsum Board shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XXIII - RESILIENT FLOORING

23.1 SUMMARY

- A. Provide all resilient flooring as indicated on the drawings and specified herein.

23.2 SUBMITTALS

- A. Submit in accordance with Article X - Project Description.
- B. Product Data: Submit product data for each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation methods.
- C. Shop Drawings: Submit shop drawings including plans and details showing the following:
 - 1. Doorways, walls or partitions, etc.
 - 2. Type of subfloor.
 - 3. Type of installation.
 - 4. Type, color, and location of edge, transition, and other accessory strips.
- D. Samples: Submit sample for each of the following products and for each color and texture required. Label each sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings.
 - 1. Luxury Vinyl Tile (LVT) Planks: Full-size samples.
 - 2. Exposed Edge Stripping and Accessory: 12-inch long samples.
- E. Product Schedule: Submit schedule using the same room and product designations indicated on Drawings.
- F. Maintenance Data: Submit maintenance data to include the following:
 - 1. Methods for maintaining flooring and resilient base, including cleaning and stain removal products and procedures and manufacturer's recommended maintenance schedule.
 - 2. Precautions for cleaning materials and methods that could be

detrimental to carpet and resilient base.

- G. Certificate: Submit certificate stating that the concrete slab was tested for moisture and alkalinity and that the flooring manufacturer's requirements have been met.
- H. Warranty: Submit warranty as noted under paragraph entitled "WARRANTY" hereinbelow.

23.3 WARRANTY

- A. Contractor's Warranty: Submit written warranty from the carpet laying contractor and countersigned by the Contractor, covering all materials and workmanship for a period of one year from the project acceptance date. The warranty shall cover the correction by the Contractor of any defects in materials or workmanship which occur during the period of warranty by the repairing or replacing with new material at his own expense.
- B. Manufacturer's Warranty: Submit written warranty, signed by carpet manufacturer agreeing to replace carpet that does not comply with requirements or that fails within specified warranty period. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination. The Surety shall not be liable beyond 2 years from the project acceptance date.

23.4 QUALITY ASSURANCE

- A. Installer Qualifications: Resilient luxury vinyl tile flooring experienced and competent in the installation of resilient luxury vinyl tile flooring.
- B. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
 - 1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
 - 2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less.

23.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
- B. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer.

23.6 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F and a maximum temperature of 85°F for at least 48 hours before, during, and for not less than 48 hours after installation.

23.7 EXTRA MATERIALS

Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

LVT Planks: Full-size units equal to 5 percent of amount installed for each type indicated.

23.8 LVT PLANKS MATERIALS

LVT Planks: J+J Flooring

- | | |
|----------------------|-------------------------------------|
| 1. Make your Mark | V5012 |
| 2. Wear Layer | 20 mil |
| 3. Thickness | 5mm Loose Lay |
| 4. Finish/Coating | Enhanced UV Urethane w/Ceramic Bead |
| 5. Pattern Repeat | Random |
| 6. Dimensions | 9"x48" |
| 7. Standard Adhesive | Commercialon® LVT Adhesive |
| 8. Backing Class | Commercial Grade |

- | | |
|-----------------------|------------------|
| 9. Commercial Traffic | Heavy Commercial |
| 10. Colorways | To Be Selected |

23.9 INSTALLATION ACCESSORIES

- A. Resilient Base: Rubber, complying with ASTM F 1861, top set, 1/8-inch thick, 4-inch high. Rubber material shall be free from offensive odor and its color uniform throughout the thickness of base. Provide coved type wall base at resilient flooring.
- B. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement based formulation provided by or recommended by resilient flooring manufacturer.
- C. Adhesives: Water-resistant, mildew-resistant, nonstaining type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed resilient flooring and that is recommended by resilient flooring manufacturer.
- D. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edge of resilient flooring, and of maximum lengths to minimize running joints.
- E. Edge Guards: Vinyl or rubber type reducer strips and transition strip where shown or required, as manufactured by Johnson Rubber Co., Mercer Plastic Co., Textile Rubber Co., Roppe, or equal.

23.10 EXAMINATION

- A. General: Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting resilient flooring performance. Verify that substrates and conditions are satisfactory for resilient flooring installation and comply with requirements specified.
- B. Subfloors: Verify that subfloors comply with ASTM F 710 and the following:
 - 1. Substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond, moisture and alkalinity tests recommended by resilient flooring manufacturer. Where testing shows the moisture content or alkalinity is not within the floor manufacturer's requirements,

provide remedial work, including floor sealing system or other means, to assure compliance with resilient flooring manufacturer.

2. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

23.11 PREPARATION

A. General:

1. Resilient flooring must be installed over properly prepared substrates that are suitable for the specific product and installation method selected. All cracks, holes, and flooring irregularities must be adequately repaired to ensure a smooth, finished appearance and prevent accelerated wear. Subfloors must be structurally sound and free of foreign substances that might compromise the carpet or its installation. Patching compounds must be suitable for the use application. They must be polymer-fortified and applied according to the patch manufacturer's instructions.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curin compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet manufacturer.
- D. Broom and vacuum clean substrates to be covered immediately before installing resilient flooring.
- E. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.
- F. Apply W.F. Taylor Primer 2025 or equal over existing flooring to remain.

23.12 INSTALLATION

- A. Install resilient flooring in accordance with manufacturer's instructions.

- B. Comply with resilient flooring manufacturer's written recommendations for seam locations and direction of seams; maintain uniformity of direction and lay of pile. At doorways, center seams under the door in closed position.
 - 1. Bevel adjoining border edges at seams.
 - 2. Level adjoining border edges.
- D. Cut and fit resilient flooring to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by resilient flooring manufacturer.
- E. Extend resilient flooring into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, non-staining marking device.
- G. Install pattern parallel to walls and borders.
- H. Comply with requirements of ADAAG 302.1 and 303 Changes in Level.

23.13 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing resilient flooring:
 - 1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by resilient flooring manufacturer.
 - 2. Vacuum resilient flooring using commercial machine with face-beater element.
- B. Protect installed resilient flooring to comply with CRI 104, Section 16, "Protection of Indoor Installations".
- C. Protect resilient flooring against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by resilient flooring manufacturer.

23.14 PAYMENT - Payment for Resilient Flooring shall not be paid for separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XXIV - PAINTING

24.1 SUMMARY

- A. Provide painting and finishing of interior items and surfaces as called for in the drawings. Paint all new work whether scheduled or not, except as otherwise indicated. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of the work and included in this section.
- B. "Paint" as used herein means all coating systems materials, including primers, enamels, sealers, and fillers, and other applied materials whether used as prime, intermediate or finish coats, except as specifically noted herein.
- C. Paint all new exposed surfaces and adjacent areas whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not designated, submit standard colors available for the materials systems specified for selection as per submittals.

24.2 SUBMITTALS

- A. Schedule of Finishes: Submit painting finish schedule. The schedule shall indicate surface to be painted, manufacturer, product no., the spread rate which the proposed paint/coating will be applied that are necessary to achieve the final dry film thickness indicated under item entitled "SCHEDULE OF FINISHES" hereinbelow.
- B. Color Samples:
 - 1. Submit color finish samples for approval by the Harbors.
 - 2. Submit, after the color finish sample has been approved, one set of color finish samples painted onto 8-1/2 inch x 11-inch cardboard. The cardboard shall be divided into 4 horizontal strips and painted as follows:
 - a. Prime 3 strips starting from the bottom.
 - b. 1st coat bottom 2 strips.
 - c. 2nd coat bottom strip.
- C. Schedule of Operations: Submit, before work on the project is commenced, work schedule showing his sequence of operations and dates.

- D. Certifications: Submit asbestos-free, lead-free, zinc-chromate-free, strontium-chromate-free, cadmium-free, and mercury-free paint certificates. Should the Contractor require additional copies for distribution to his suppliers and subcontractors, he shall include these additional copies along with his submittal.
- E. Manufacturer's Product Data Sheets: Submit Manufacturer's Product Data Sheets for the primers, paints, coatings, solvents, sealing and patching materials, sealants, and caulking. Data sheets shall indicate thinning and mixing instructions, required film thickness (mil) and application instructions. Should the Contractor require additional copies for distribution to his suppliers and subcontractors, he shall include these additional copies along with his submittal.
- F. Manufacturer's Material Safety Data Sheets: Submit Manufacturer's Material Safety Data Sheets for coatings, solvents, and other hazardous materials. Should the Contractor require additional copies for distribution to his suppliers and subcontractors, he shall include these additional copies along with his submittal.
- G. Receipt of Delivery: Submit receipt signed by the user's representative, attesting to delivery of extra paint as required under paragraph entitled "Extra Paint" hereinbelow.
- H. Warranty: Submit written warranty as noted under item entitled "WARRANTY" hereinbelow.

24.3 WARRANTY

- A. The Contractor shall provide written warranty that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship performed by the Contractor. Such warranty shall continue for a period of two (2) years from the project acceptance date during which period the Contractor shall remedy at his own expense any such failure to conform or any such defect.
- B. The Contractor shall warrant a mildew free surface for a period of one year from the project acceptance date. Should mildew formation occur on surfaces painted under this project within the one year, the Contractor shall clean such surfaces at his own expense.
- C. The Contractor shall guarantee that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship performed by the Contractor. Such guarantee shall continue for a period of two (2) years from the project acceptance date

during which period the Contractor shall remedy at his own expense any such failure to conform to any such defect.

- D. Should the Contractor fail to remedy any failure or defect described in Paragraph A. above within 10 working days after receipt of notice thereof, the Harbors shall have the right to repair or otherwise remedy such failure or damage at the Contractor's expense.

24.4 INSPECTION AND APPROVALS

The Contractor shall obtain written approval from the Construction Engineer upon completion of each phase of work (phases of work are: surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase of work. The Contractor shall give the Construction Engineer one day (24 hours minimum) advance notice of completion of any phase of work for a work area when he deviates from the previously submitted work schedule. The Contractor shall provide necessary access to areas to be inspected. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at no cost to the STATE.

Right of Rejection: The Construction Engineer shall have the right to reject all work which is not in compliance with the plans and specifications. Rejected work shall be redone at no cost to the STATE.

In addition, the Construction Engineer shall have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence or repeated non-compliance with the contract requirements.

24.5 ANALYZING AND TESTING

- A. All paints and their applied thickness shall be subject to testing whenever the Construction Engineer deems necessary to determine conformation to the requirements of these specifications. Should testing by a laboratory be required, the laboratory shall be selected by the Harbors and the cost of testing shall be borne by the Contractor. Should test results show that the paint is in compliance with this specification, the cost will also be borne by the Contractor.
- B. All rejected material shall be removed from the job site immediately. Surfaces painted with the rejected material shall be redone at Contractor's own expense.
- C. Where the required paint thickness is deficient, the affected surface(s) shall be recoated as necessary to provide the required paint thickness at Contractor's own expense.

24.6 PAINTING NOT INCLUDED

The following categories of work are not included as part of field applied paint and finish work.

1. Pre-Finished Items: Unless otherwise indicated, do not include painting for factory-finished or installer finished items such as (but not limited to) solid phenolic, plastic laminate, acoustic materials, high performance organic coated metal, finished mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets, etc.
2. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, and similar finished materials will not require finish painting, unless otherwise indicated.
3. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories, or any equipment identification, performance rating, name, or nomenclature plates.

24.7 GENERAL REQUIREMENTS

- A. Inspection and Approvals: The Contractor shall obtain written approval from the Construction Engineer upon completion of each phase of work (phases of work are surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase or work. The Contractor shall give the Construction Engineer one day (24 hours minimum) advance notice of completion of any phase of work for a work area when he deviates from the previously submitted work schedule noted under paragraph entitled "Schedule of Operations" hereinabove. The Contractor shall provide necessary access to areas to be inspected. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at Contractor's own expense.
- B. Right of Rejection: The Construction Engineer shall have the right to reject all work which is not in compliance with the plans and specifications. Rejected work shall be redone at Contractor's own expense. In addition, the Construction Engineer shall have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence or repeated non-compliance with the contract requirements.

24.8 SPECIAL REQUIREMENTS

- A. Codes: The Contractor shall comply with the HIOSH codes and regulations (Occupational Safety and Health Law) and all pollution control regulations of the State Department of Health.

- B. Protection
 - 1. Persons:
 - a. The Contractor shall take all necessary precautions to protect public pedestrians, including tenants from injury.
 - b. The Contractor shall provide, erect and maintain safety barricades around scaffolds, hoists, and wherever Contractor's operations create hazardous conditions in order to properly protect the public and tenants.
 - 2. Completed Work: The Contractor shall provide all necessary protection for wet paint surfaces.
 - 3. Protective Covering and Enclosures: The Contractor shall provide and install protective covering over furniture, equipment, floor, and other areas that are not scheduled for treatment. Protective covering shall be clean sanitary drop cloth or plastic sheets. Paint applied to surfaces not scheduled for treatment shall be completely removed and surfaces shall be returned to their original condition.
 - 4. Protection of Buildings and Vehicles: The Contractor shall take all necessary precautions to protect buildings and vehicles. Spray painting is not allowed and no painting will be done on windy weather. The Contractor shall be responsible for any damages to vehicles caused by his or his employee's negligence.
 - 5. Safeguarding of Property: The Contractor shall take whatever steps may be necessary to safeguard his work and also the property of the Harbors and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages and for losses to work or property caused by his or his employee's negligence. Where the damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) it shall be replaced with a new product of equal quality. No proration or use of "used" products will be permitted.

6. Fire Safety: The Contractor shall direct his employees not to smoke in the vicinity and exercise precautions against fire at all times. Waste rags, plastic (polyester sheets), empty cans, etc. shall be removed from the site at the end of each day.

C. Storage Area for Materials:

1. No paint material, empty cans, paint brushes, and rollers may be stored in the building(s). They shall be stored in separate storage facilities away from the building(s).
2. The Contractor may furnish a job site storage facility. Such facility shall comply with the requirements of the local Fire Department. The storage area shall be kept clean and the facility shall be locked when not in use or when no visual supervision is possible.

D. Sequence of Operations: The sequence of operations shall divide the surfaces into work areas and present a schedule for:

1. Surface preparation and spot prime.
2. Prime coat.
3. First finish coat.
4. Second finish coat.

24.9 AREAS (SURFACES/STRUCTURES) TO BE PAINTED

Surfaces to be Painted:

1. Interior: Interior surfaces shall be painted as indicated on the plans unless specifically deleted in these specifications. Interior surfaces to be painted shall be those surfaces not exposed to weather in an area enclosed by 4 walls. Also, a surface shall be considered an interior surface and painted as such whenever the color is that of the existing interior color. Extent of treatment for special items is as follows:
 - a. Steel doors and frames.
 - b. Fixed wood louvers.
 - c. Wood framing.
 - d. Concrete/concrete masonry.

- e. All other miscellaneous items.
- f. All areas damaged or exposed during construction.

24.10 OTHER INCIDENTAL WORK TO BE PERFORMED BY CONTRACTOR

- A. Interior:
 - 1. Unless otherwise specified, the Contractor is responsible for moving about all furniture and equipment to provide himself with sufficient working space. The Contractor shall protect these items and make good any damage to them at his own expense. After the painting of the room is completed, the Contractor shall replace all furniture and equipment to their original locations.
 - 2. The Contractor shall carefully remove from surfaces to be painted framed and mounted pictures and charts, curtains, blinds, etc. and neatly store away. All items shall be returned to the same location after completion of painting.
 - 3. All items on shelving and in cabinets to be painted will be removed by the user personnel prior to painting work.
- B. Areas Inaccessible to Normal Painting: The Contractor shall remove and reinstall items as required to paint area(s) where indicated or required.

24.11 MATERIALS

- A. Asbestos Prohibition: All paints shall be asbestos-free.
- B. Lead Prohibition: All paints shall be lead-free.
- C. Mercury Prohibition: All paint shall be mercury-free.
- D. Chromate Prohibition: All paint shall be free of zinc-chromate and/or strontium-chromate.
- E. Cadmium Prohibition: All paint shall be cadmium-free.
- F. Material shall be equal in quality to that specified under the Schedule of Finishes and any given finish shall be as labeled by one manufacturer.

- G. All materials shall be delivered to the job site in undamaged original containers bearing the manufacturer's label and shall be stored in such a manner as to prevent damage. All rejected materials shall be removed from the job site immediately.
- H. Paints shall be as manufactured by Ace, Benjamin Moore, Cabot's, Carboline, Dupont, Dutch Boy, Glidden Professional, Olympic Stain, Pittsburg, Porter Inti., Pratt & Lambert, Rust-Oleum, Sherwin-Williams, Spectra-Tone, Thoro Systems, Tnemec, United Paint and Coatings, or approved equal.
- I. Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's printed specifications. Compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline shall not be used for thinning.
- J. Except for metal primers all interior paint shall contain the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint.
- K. The supplier shall submit a signed certificate indicating the amounts of mildewcide added by both the paint manufacturer and the paint supplier.

24.12 SURFACE PREPARATION OF SURFACES

- A. The painting contractor shall be wholly responsible for the finish of his work and shall not commence any part of it until surfaces are in proper condition. If painting contractor considers any surfaces unsuitable for proper finish of his work, he shall notify the Construction Engineer of this fact in writing and he shall not apply any material until the unsuitable surfaces have been made satisfactory. Major defects shall be restored by the proper trades. In general, follow the manufacturer's direction for surface preparation for the paint to be applied.
- B. All knots or sappy spots shall be given one coat of shellac before painting. All necessary puttying of nail holes, cracks, and blemishes shall be done after priming coat has become hard and dry and before second coat is applied. On stain work, putty shall match color of finish.
- C. Concrete and concrete masonry unit surfaces shall be cured and dry and shall be wire brushed clean to remove all dust and loose mortar, efflorescence, and laitance. Test for alkalinity level and provide remedy where alkalinity exceeds manufacturer's acceptable level.
- D. Unprimed galvanized metal shall be cleaned with nonpetroleum-based solvents so surface is free of oil and surface contaminants.

- E. All metal surfaces shall be made clean and free of any defects or condition that may produce unsatisfactory finish.

24.13 PAINT APPLICATION

- A. General:
 - 1. All work shall be done in a workmanlike manner by skilled and experienced mechanics and shall conform to the best painting practices.
 - 2. All materials shall be applied in strict accordance with the manufacturer's specifications, including spread rates, and the finished surfaces shall be free from runs, sags, drops, ridges, waves, laps, streaks, brush marks, and variations in color, texture, and finish (glossy or dull). The coverage shall be complete and each coat shall be so applied as to produce a film of uniform thickness. No paint shall be applied until the preceding coat is thoroughly dry and approved.
 - 3. Any mixing shall be done outside the building.
- B. Application: Paint application shall be by brush and roller only.
- C. Colors: Each coat shall be tinted a different shade from the preceding coat. Colors shall match existing surfaces and/or adjacent surfaces. Where a color is not indicated, the color shall be selected by the Construction Engineer.
- D. Finish Film Thickness: Apply primer, intermediate, and finish coats in dry film thickness, as scheduled unless recommended otherwise in writing by the manufacturer, for each coat and in accordance with the manufacturer's recommendations. Verify mil thickness by use of a suitable wet film gauge. Use a Tooke or other dry film gauge to test for total dry film thickness.

24.14 MISCELLANEOUS

- A. Installation of Removed Items: After completion of final paint coat, removed items shall be reinstalled.
- B. Clean-up:

1. During the progress of the work, all debris, empty crates, waste, drippings, etc. shall be removed by the Contractor and the grounds about the areas to be painted shall be left clean and orderly at the end of each work day.
 2. Upon completion of the work, staging, scaffolding, containers, and all other debris shall be removed from the site. All painted splashed or spilled upon adjacent surfaces not requiring treatment (hardware, fixture, floor glass) shall be removed and the entire job left clean and acceptable.
 3. Work to correct punchlist items shall be performed during non-business hours if the work will inconvenience the building occupants. Where necessary for access during non-business hours, the Contractor shall pay for custodial staff to gain entry and to secure the building.
- C. Extra Paint: The Contractor shall provide extra paint in each of the different colors of interior and exterior paint used for all surfaces to the Harbors upon completion of the project. The paint shall be in unopened one gallon cans and shall be in the quantities listed below:
1. Paint used in single room areas and in small areas, such as rooms and doors 1 gallon of each color.
 2. Paint used over large areas, such as the interior and exterior of the building and in several rooms - 5 one gallon cans of each color.

24.15 SCHEDULE OF FINISHES

- A. The Schedule of Finishes is made for the convenience of the Contractor and indicates the types and quality of finishes to be applied to the surfaces.
- B. Any existing painted surfaces not specifically noted in the finish schedule shall be finished to match adjoining work.
- C. Paint schedule is based on the products of Benjamin Moore catalog, unless otherwise called for and are so named to establish quality and standard of materials. Paint materials equal to those mentioned may be used provided they are acceptable to the Construction Engineer.
- D. The painting schedule shall apply to new surfaces of designated materials, unless specified otherwise, in conformity with instructions of the paint products used.

- E. The following schedule represents the general character of the paint systems necessary to complete the work. Provide additional comparable systems and sheens as required. At the option of the Construction Engineer, paint systems and sheens may be revised at Contractor's own expense.

24.16 INTERIOR PAINT SCHEDULE

A. Concrete:

Prime coat: N023 Fresh Start Multi-Purpose Latex Primer
1.2 mils DFT@400 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat
or
N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat
or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

B. Concrete Masonry:

Prime coat: 571 Ultra Spec Hi-Build Masonry Block Filler
8.5-11.4 mils DFT@75-100 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat
or
N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat
or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

C. Ferrous Metal:

Prime coat: HP04 Ultra Spec Acrylic Metal Primer
1.7-2.3 mils DFT@300-400 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

D. Galvanized Metal:

Prime coat: HP04 Ultra Spec Acrylic Metal Primer
1.7-2.3 mils DFT@300-400 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

E. Wood:

Prime coat: N023 Fresh Start Multi-Purpose Latex Primer
1.2 mils DFT@400 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat

or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

F. Gypsum Board:

Prime coat: 253 Super Spec Latex Primer Sealer
1.1 mils DFT@400-500 sf/gal

2nd and
3rd coats: N539 Ultra Spec Interior Waterborne Semi-Gloss Finish

1.8 mils DFT@350-400 sf/gal/coat

or

N536 Ultra Spec Interior Waterborne Flat Finish

1.8 mils DFT@350-400 sf/gal/coat

or

N538 Ultra Spec Interior Waterborne Eggshell Finish

1.8 mils DFT@350-400 sf/gal/coat

24.17 PAYMENT - Payment for Painting shall be made as described in Article X of these Specifications.

ARTICLE XXV - MECHANICAL WORK

25.1 DESCRIPTION OF WORK

- A. Furnish and install a new variable refrigerant flow split-system air condition in harbor agent's office.
- B. This section covers the furnishing, fabrication, delivery and installation of the air conditioning system complete, including but not limited to the following:
- C. Proper installation of the new variable refrigerant flow split-system air conditioning and related appurtenances.

25.2 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Section XXIV - PAINTING
- B. Section XXVIII - ELECTRICAL WORK

25.3 CODES, STANDARDS, REGULATIONS

- A. Installation of all work in this Section shall be made in accordance with State Department of Health Regulations, National Fire Protection Association, and the Uniform Building Code.
- B. All applicable codes, regulations and ordinances of public bodies having jurisdiction are considered a part of these specifications; all work installed and materials provided must comply with the current edition of such codes, regulations and ordinances.
- C. Present to the Construction Engineer certificates of inspection and approval from proper authorities.

25.4 CONTRACT DRAWINGS

- A. Contract drawings are essentially diagrammatic, indicating general layout and approximate locations toward establishing the scope for uniform estimating basis for all bidders. They are not intended to be detailed construction working drawings. Equipment and piping arrangements shall fit into space allotted and shall allow adequate clearances for servicing and maintenance. Reasonable modifications to indicated locations and

arrangement to suit job conditions shall not constitute basis for requesting additional funds from the State.

- B. Nameplate: Each major component of equipment shall have the manufacturer's name, address, and catalog number on a plate securely attached to the item of equipment.
- C. Verification of Dimensions: The Contractor shall be responsible for the coordination and proper relation of this work to the building structure and to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions, to verify all dimensions in the field, and to advise the Construction Engineer of any discrepancy before performing any work.

25.5 SHOP DRAWINGS AND MANUFACTURER'S PUBLISHED DATA

- A. Submit electronic copies of sets and within 20 days after award of contract and before installation of any materials or equipment is begun, Contractor shall submit complete list of materials and equipment together with names and addresses of manufacturers, catalog numbers, and trade names to the Construction Engineer for approval. No consideration shall be given to partial list submitted from time to time.
- B. Approval of materials will be based on manufacturer's published rating. Any materials and equipment which are not in accordance with these specifications may be rejected.
- C. Prior to start of any field work, required copies of to-scale shop drawings of mechanical equipment shall be submitted for review. No work shall be started without approval of the Construction Engineer. Where apparatus and equipment have been indicated on the drawings, dimensions have been taken from typical equipment of the class indicated. The shop drawings shall show the details of construction and installation of the particular equipment furnished. The shop drawings shall be fully dimensioned to show that the equipment and connections thereto fit the space provided.
- D. Contractor shall check the submittals and shop drawings and certify that they are correct and in compliance with the drawings and specifications.

25.6 AS-BUILT DRAWINGS

Upon completion of work, submit accurate field posted as-built drawings to the Construction Engineer. With these drawings, also submit operating instructions and other pertinent literature of fixtures and equipment incorporated into the

project. Show exact locations and sizes, as actually installed, of air conditioning equipment, piping, drains and controls of this record field posted “as-built” drawing.

25.7 SUBSTITUTION OF MATERIAL

- A. Request for substitutions, complete with catalog data, shall be furnished to the Construction Engineer.
- B. Design is based on equipment as described in drawings and by Equipment Schedule. Any changes in foundations, bases, connections, piping, controls, electrical equipment, specified and required by approved substitutions shall be made by Contractor at no additional cost to the State.

25.8 OMISSIONS

It is the intent of the plans and specifications to provide a complete installation. Should there be omissions, the Contractor shall call the attention of the Construction Engineer to such omissions in sixteen (16) days advance of the date of bid opening so that the necessary corrections can be made.

25.9 GUARANTEE AND CERTIFICATE

Contractor and Installer shall guarantee and certify in writing all work in this section for a period of one year after 30 days of trouble-free operation from date of project acceptance by the Construction Engineer. Should any equipment or material fail due to faulty workmanship or materials within this period, replace or repair that item at no cost to the State. Replacement of lost refrigerant and correction of undue noise or vibration is included in this guarantee. Contractor shall be responsible for all damages to any part of the premises during equipment installation work under this section.

25.10 MATERIALS

- A. Window Air Conditioner shall be energy star, with auto restart, multiple fan speed with 24-hour timer cooling schedule, overload protection. Provide washable filter, field manufacturer wall installation, remote, condensation piping, and associated accessories for a complete installation.
 - 1. Window AC shall be Friedrich, LG, or approved equal, see Mechanical Schedule.

25.11 COOPERATION WITH OTHER TRADES AND CONFLICT IN WORK

- A. Contractor shall examine all drawings of proposed work and coordinate his work with other trades. Work conflicts shall be brought to the attention of the Construction Engineer and work rearranged or modified in accordance with his decision.
- B. If changes in indicated locations or arrangements of work are required, they shall be made by Contractor without additional charge to the State.

25.12 EQUIPMENT INSTALLATION

- A. Install Window AC unit in accordance with installation instructions provided by the manufacturer.
- B. Necessary supports shall be provided for equipment, appurtenances and pipe, as required. These include frames or supports for air conditioners, and other similar type items requiring supports.
- C. Perform the following field tests and inspections and prepare test reports:
 - 1. After installing Window AC unit completely, perform visual and mechanical check of the AC unit. Except for nameplate data, remove any manufacturer's marketing labels.
 - 2. After electrical circuitry has been energized, start the unit to confirm motor rotation and unit operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning control and equipment.
 - 4. Repair or replace malfunctioning unit and retest as specified above.

25.13 CLEANING AND ADJUSTING

- A. Condensate drain line shall be leak tested. No leaks are allowed at any joints.
- B. Equipment shall be wiped clean, with all traces of oil, debris, dirt, grime, or paint spots removed. Clean the inside of the AC unit and filter of oil, debris, dirt, grime, or other foreign material as necessary to ensure proper operation.

- C. All surfaces damaged by this project's renovation work shall be repaired and restored to match the adjacent surfaces. Paint finishes shall be repainted with matching paint type color and sheen.

25.14 PAYMENT - Payment for Mechanical Work shall be made as described in Article X of these Specifications.

ARTICLE XXVI - FIRE SPRINKLER SYSTEM

26.1 GENERAL CONDITIONS

As specified in ARTICLE X - PROJECT DESCRIPTION.

26.2 GENERAL REQUIREMENTS

Provide complete wet pipe automatic fire sprinkler and fire extinguisher cabinet for designated areas as shown on plans, as required by code and authority having jurisdiction. Sprinkler system layout, as shown on the drawings is intended only to describe general scope of work required and is not to be construed as being complete workable design in accordance with all applicable NFPA Codes and Regulations. Final design and providing of sprinkler system meeting all applicable codes and regulations shall be sole responsibility of the Contractor. Electrical work to be included under this section is limited to provide all labor and materials required for providing complete working local supervisory system, including circuitry between panels, alarms, detector, etc. Prior to fabrication and installation, obtain approval from Hawaii Insurance Rating Bureau.

26.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

All electrical power, wiring, conduit, etc., flow switch and other equipment required under this section shall be provided under ARTICLE XXVIII - ELECTRICAL WORK.

26.4 REFERENCE SPECIFICATION

Latest edition of Standards for Installation of the Fire Protection System shall be as followed. Where these specifications vary from said standards, more rigid requirements shall apply.

NFPA 13 Standard for the Installation of Sprinkler Systems.

NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection

26.5 STANDARDS

Comply with local ordinances, requirements of local authorities, applicable regulations of National Board of Fire Underwriters, regulations of Building Department and all other applicable regulatory bodies.

26.6 SUBSTITUTIONS

Refer to ARTICLE X - PROJECT DESCRIPTION.

26.7 COORDINATION

Coordinate with various trades. Where items must fit spaces previously constructed, verify measurements at site. Coordinate with other work to ensure that all required inserts, sleeves, and attachments are properly set and that adequate provision is made for installing this work.

26.8 PERMITS AND INSPECTIONS

Obtain and pay for permits, arrange for periodic inspection by local authorities, and deliver certificates of final inspection to Construction Engineer.

26.9 DRAWINGS

- A. Contract Drawings: Follow architectural plans of building and diagrammatic fire protection layouts wherever practicable. Locations are approximate. Before installing, study adjacent architectural details and make installation in most logical manner.
- B. Shop Drawings: Before any work is commenced, Contractor shall submit complete sets of working drawings of sprinkler system, hydraulic calculations to show basis for design, graphs or tables showing pressure discharge relationship for sprinkler heads; and full descriptive data for pipe, fittings, alarm valves, gate valves, check valves, water-motor alarms, sprinkler heads, hangers, devices, materials, and associated equipment to the Construction Engineer for approval. Partial submissions will not be acceptable. Descriptive data shall be annotated to show specific mode, type, and size of each item Contractor proposes to furnish. Drawings shall be in accordance with requirements for "working plans" as specified in NFPA 13 and shall include all applicable data specified herein. No work shall being unit design of system and various components have been approved by the Construction Engineer.
- C. Record Drawings: Maintain copy of drawings to record daily any additions or changes. After final inspection, prepare "as-built" drawings from site copy, as specified in GENERAL CONDITIONS and turn over to the Construction Engineer. Show all piping, valves, etc., accurately and clearly, as actually installed.

26.10 GUARANTEE

- A. Contractor shall guarantee all work in compliance with GENERAL CONDITIONS Section. Should any equipment or material fail within this period, replace or repair at no cost to Harbors for material and/or services, if due to faulty workmanship or quality of material furnished.
- B. Defective or Improper Work: Remove any work or materials not acceptable to Construction Engineer and replace by approved materials or work, without additional cost.
- C. Be responsible for all damage caused by leaks in piping or equipment for guarantee period. Any leaks or piping system failure due to any cause of location, workmanship, or quality of material that cause damage will be responsibility of Contractor.

26.11 DESIGN

Design of wet pipe sprinkler system shall be by hydraulic calculation or pipe schedule method and shall conform to NFPA 13 and to requirements as specified hereinafter.

26.12 WORKMANSHIP

All materials and equipment shall be installed in accordance with NFPA No. 13 to conform with contract documents. System shall be installed by an experienced firm regularly engaged in installation of fire protection sprinkler systems in accordance with NFPA Standards. The Construction Engineer may reject any proposed installer who cannot show evidence of such qualifications. The Construction Engineer's approval will not relieve Contractor from his responsibilities to perform all work in accordance with specifications and contract terms.

26.13 INSTRUCTIONS TO OWNER

Contractor shall provide Harbors' personnel with necessary (as required by NFPA Pamphlet No. 13) information concerning care, operation, and maintenance of system.

26.14 PRODUCTS

A. MANUFACTURER

Sprinkler and alarm equipment shall be products of Central, Grinnell Co., Reliable, Viking, Automatic Sprinkler, or Gem Sprinkler Co.

B. SPRINKLER HEADS

1. U.L. of Factory Mutual Laboratory approved automatic, flush closed pendant, single wall or upright type, ordinary degree temperature ratings (165 degrees F).
 - a. Overhang Areas: pendant type heads, corrosion resistant, Electroless Nickel Polytetrafluorethylene (PTFE) finish. Corrosion-resistant coatings must be factory-applied by the sprinkler manufacturer.
2. Furnish six (6) extra sprinklers of each type packed in suitable containers and two (2) special sprinkler wrenches and four (4) proper types of sprinkler stoppers. Provide where directed, approved metal cabinets with hinged door, lock and two (2) days for storing extra sprinkler and wrenches. All sprinkler heads in finished areas shall be polished chrome plated with polished chrome brass escutcheon.

C. PIPE AND FITTINGS - (Wet System)

1. Sprinkler System Piping:
Automatic Fire Sprinkler: Sch 49 black steel
2. Fittings: Fittings for steel pipe shall be black cast iron, screwed 6-inches and under, flanged over 6-inch standard, suitable for 250 psi wwp. Fittings to be provided by Grinnell Company, Crane Company, Stockham Pipe Fitting Company or approved equal. Fittings may be grooved joints with victaulic couplings or welded fittings.

D. SOLENOID VALVES

Provide solenoid valve, Furnish a piping package with the control valve assembly, package to be supplied by the valve manufacturer, components as follows: the supply side of the coil shall contain a strainer/shut-off ball valve/drain [an integrated isolation ball valve/manual air vent] with P/T port; the return side of the coil shall contain a union fitting with a P/T port, ball-style control valve, an integrated manual balancing valve/union/isolation ball valve/manual air vent with P/T port. Isolation valves furnished as an integrated part of the ball-style control valve shall not be permitted; install complete as per manufacturer's printed installation directions.

E. SUPPORT

Support sprinkler system piping from building structure by means of hangers, inserts, other supports, as per requirements in NFPA Pamphlet No. 13 and as indicated on drawings.

F. PIPE SLEEVES

Furnish and set cast iron (below grade) or Schedule 40 steel pipe sleeves to accommodate pipes passing through foundations, walls, floors, partitions. Extend sleeves above finished floor and pack space between pipe and sleeve as recommended by NFPA Pamphlet No. 13.

G. SPRINKLER WATER FLOW DETECTOR - (Wet System)

Vane-Type water flow detector shall be installed in feed main to each sprinkler zone as indicated on drawings. Detector shall have minimum of two (2) contacts. Detector shall incorporate retard element to prevent false signals and be installed in accordance with manufacturer's recommendations. Local electrical audible alarm, activated by detector circuit, shall also be provided by Sprinkler Contractor.

H. GAUGES

Gauges shall be 3-1/2" dial type.

I. PRESSURE SWITCH

Switch with circuit opener or closer for automatic transmittal of alarm system shall be provided and shall be connected into fire pre-action system. Alarm actuation device shall be of mechanical diaphragm-controlled water flow type without retard feature, which instantly recycles when pressure is released on diaphragm.

J. ESCUTCHEON PLATES

Sprinkler piping passing through floors, walls, and ceilings shall be provided with approved type, one piece or split type plates. Plates where pipe passes through finished ceiling shall match color of surrounding surfaces. Other plates shall be of steel or cast iron, with aluminum finish. Plates shall be securely anchored in place with set screws or other approved positive means.

K. FLOW SWITCHES AND TAMPER SWITCHES

1. Furnish and install 2-pole flow switches with two terminals in sprinkler lines on each floor for each connection and where required by NFPA Standard No. 13. All wiring conduits, and related items from flow switches to fire alarm system to be provided under FIRE ALARM SYSTEM Section.

2. Furnish and install 2-pole tamper switches on each floor at control valves and where required by NFPA Standard No. 13. All wiring, conduits, and related items, from tamper switches to fire alarm system to be provided under FIRE ALARM SYSTEM Sections.

26.15 EXECUTION

A. GENERAL

1. Do not scale plans. Check all measurements at building and adjust work to fit space allotted. Close cooperation between all trades will be required. Any work done without regard for work of other trades shall be moved, if necessary, at option of the Construction Engineer, without cost to the State, to permit proper installation of other work.
2. When work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth, or other substances can enter pipe or fittings.
3. Responsibility for care and protection of equipment and work rests with Contractor until it has been tested and accepted by the Construction Engineer.

B. CUTTING AND PATCHING

1. Place sleeves for piping penetrating through poured concrete or masonry construction prior to pouring of concrete or construction of masonry. Fill void between pipe and floor or wall with grout.
2. Do not cut any openings in any structural member until location has been approved by the Construction Engineer.
3. Cutting of holes in hardened concrete is not permitted except by special permission of Construction Engineer, which will be on an individual basis and shall require use of small hand tools, diamond drills, or other controlled means of Construction Engineer's discretion.
4. Cutting of reinforcing bars is not permitted.
5. If necessary to cut holes in slabs or concrete walls, first relocate holes to clear beams, joists, columns, etc. Cut holes neat and clean using diamond core drill or small chipping gun. Leave all reinforcing bars intact; enlarge holes if necessary.
6. If necessary to cut holes in masonry walls, carefully remove minimum amount of masonry.

7. Install sheet metal or black iron pipe sleeves through holes cut in slabs, concrete walls or masonry walls. In concrete slab walls, install sleeves to clear reinforcing bars and tightly pack concrete around sleeve for full thickness of walls. In masonry walls, rest or re-grout all loose masonry units; pack cement grout tight and solid around sleeves for full thickness of wall.
8. Annular space between pipe and sleeve shall be completely sealed with grout.

C. FITTINGS

Fittings for aboveground piping shall be of type specifically approved for use in sprinkler system. Bushings shall be used only where standard fittings of required size are not available. Use of bushings is further restricted to requirements of NFPA No. 13.

D. REDUCERS

Reduction in pipe sizes shall be made with one-piece reducing fittings. Bushings will not be acceptable, except that when standard fittings of proper size are not available. Where used, face bushings shall be installed with outer face flush with face of fitting opening being reduced. Bushings shall not be used in elbow fittings in more than one outlet of a tee, in more than two outlets of a cross, or where reduction in size is less than 1/2".

E. PIPE SUPPORTS AND HANGERS

1. Recommend methods and requirements for supporting of hanging pipe as set forth in NFPA No. 13 shall be mandatory.
2. Install hangers and supports for all pipe work to provide for expansion and contraction, to prevent vibration, and maintain required grading by proper adjustment.
3. Refer to structural drawings for type of construction from which piping and/or equipment is to be suspended. Drilling from bottom or pre-stressed tee is not permitted. Drill one side of T-stem or bottom of T-flanges.
4. Drilled-in-Threaded Inserts: Where support in beams and joists are required after concrete has been poured, Phillips "Redhead" Drilled-in-Threaded Inserts shall be provided and installed in accordance with recommendation of manufacturer.
5. Install concrete reaction blocks for underground pipe and angle/plate reaction supports for aboveground piping at main and cross main tees and elbows.

F. PIPE SLEEVES

Pipes passing through concrete or masonry walls or concrete walls, shall be provided with pipe sleeves fitting into place at time of construction. All rectangular and square openings shall be as detailed. Each sleeve shall extend through its respective wall or floor, and be cut flush with each surface. Unless otherwise indicated, sleeves shall be of such size as to provide minimum of 1/4" all-around clearance between pipe and sleeve. Sleeve in bearing walls, waterproofing membrane floors, and wet areas shall be steel pipe or cast iron pipe. Sleeves in non-bearing walls, floors, or ceilings may be steel pipe, cast iron pipe, or galvanized sheet metal with lock-type longitudinal seam.

G. DISTRIBUTION OF WATER - (Wet Pipe System)

Distribution shall be essentially uniform throughout area in which it is assumed sprinkler heads will open.

H. DENSITY OF APPLICATION OF WATER - (Wet Pipe System)

Application to horizontal surfaces below sprinklers shall be 0.16 gpm/s.f., 0.19 gpm/s.f. in mercantile areas; and 21 gpm/s.f. in storage areas. Pipe shall be sized to provide specified density when system is discharging specified total maximum required flow, as per NFPA No. 13 Figure 2-2.1.1.(b).

I. SPRINKLER DISCHARGE AREA - (Wet Pipe System)

Area shall be hydraulically most remote 1,500 square feet area as defined in NFPA 13.

J. FRICITION LOSSES

Losses in pipe shall be calculated in accordance with Hazen and Williams formula with "C" value of 120 for aboveground steel pipe, 140 for aboveground copper pipe and 120 for underground cement lined cast iron pipe.

K. LOCATION OF WET PIPE SPRINKLER HEADS

Heads in relation to ceiling and spacing of sprinkler heads shall not exceed that permitted by NFPA No. 13 for ordinary hazard occupancy. Spacing of sprinklers on branch lines shall be essentially uniform.

L. WATER SUPPLY

Static pressure and availability shall be verified with Board of Water Supply.

M. BRACING AND CLAMPING

Bends, plugs, and tees shall be braced or clamped in accordance with requirements of NFPA No. 24. Connection between underground pipe and bass riser shall be anchored by means of tie rods and pipe clamps.

N. THRUST BLOCKS

Adequate concrete reaction thrust blocks conforming to local Board of Water Supply standards shall be installed at underground piping direction changes.

O. TESTS

1. Subject sprinkler system to tests required by and in presence of representatives of agencies having jurisdiction. Conduct, duration and other details of tests not covered by agencies' requirements, equipment; pay expenses incurred in making test, obtain approval, and certificates. Where evidence of stoppage appears in piping or equipment, disconnect, clean, repair, and reconnect obstructed parts. Contractor shall bear all costs of cutting and patching adjoining work made necessary by such cleaning and repairing.
2. Defective Work: If inspection or test shows defects, such defective work or material shall be replaced and inspection and test repeated. Repairs to piping shall be made with new material. No caulking of screwed joint or holes will be accepted.
3. Protection to Fixtures, Materials, and Equipment: Pipe openings shall be closed with caps or plugs during installation. Equipment shall be tightly covered and protected against dirt, water, and chemical or mechanical injury. Upon completion of all work, materials and equipment shall be thoroughly cleaned, repainted as required, adjusted, and operational.
4. Removal and capping of existing lines as required is included in this Section.
5. Fire Pump: The pump shall be subjected to an operation test at rated speed. Performance curve showing the flow, total head, brake horsepower and efficiency to be plotted. Certified curves shall be supplied to the customer. The pump shall be hydrostatically tested at two times the shut-off pressure or 300 psig, whichever is greater.

P. SPECIAL CONDITIONS

Conformance with provisions of the enforcing edition of the International Building Code, as amended, is hereby made a part of this Section of specifications.

Q. WATER SUPPLY CONNECTION

Connect sprinkler system to the existing 8" pipe outside of building. Before connecting, flush waster service through unrestricted opening of at least 4-inches in diameter.

R. DRAIN AND TEST CONNECTIONS

Install horizontal piping, graded to low points, and in manner to make it possible to test and empty entire system. Provide valves and piping of sizes and in locations in accordance with requirements of NFPA Pamphlet No. 13. Drain valve and discharge fittings shall be visible; use sight-drain fittings if necessary. Provide flushing connections at end of cross mains, consisting of capped nipple same diameter as pipe be not larger than 2 inches.

S. VALVE SEALS, TAGS, CHARTS

1. Seals: Provide approved seal for each manually operated shut-off valve required to be sealed in open position.
2. Signs: Provide identification signs of standard design, fasten securely at designated locations as per NFPA Pamphlet No.13.
3. Tags: Provide brass tags 3-inches in diameter, stamped with designated numbers. Secure with gauge copper wire to spindle or all control valves.
4. Charts: Provide two copies of approved sprinkler diagram and valve chart, giving designating number, function, location of each valve; mount in painted, glazed frames, hang where directed.

26.16 PAYMENT - Payment for Fire Sprinkler System work shall be made as described in Article X of these Specifications.

ARTICLE XXVII - FIRE ALARM SYSTEM

27.1 GENERAL - Furnish all labor, tools, equipment, materials, and accessories required to provide and install a complete, electrically supervised, closed circuit fire alarm system as specified herein and as shown on the plans.

27.2 RELATED WORK

ARTICLE XXVIII - ELECTRICAL WORK. Raceways and junction boxes for fire alarm system infrastructure.

27.3 PAYMENT PROCEDURES

Permits, Tests and Inspections. Apply, secure and pay for all required permits, fees, licenses, tests, inspections and royalties necessary to accomplish the work. Schedule and coordinate required tests and inspections.

27.4 SCOPE

- A. System Description. This work includes modifications to the existing addressable voice evacuation fire alarm system as described herein and on the contract drawings at Aloha Tower, Honolulu Harbor. The system shall include all wiring, raceways, pull boxes, terminal cabinets, outlet and mounting boxes, control equipment, alarm, and supervisory signal initiating devices, and all other accessories and miscellaneous items required for a complete operating system even though each item is not specifically mentioned or described. The system layout on the drawings is conceptual. Equipment, materials, installation, workmanship, inspection, and testing shall be in strict accordance with the required and advisory provisions of NFPA 72.

- B. Existing Fire Alarm Equipment. The existing fire alarm system is manufactured by Simplex, and new equipment shall be listed for use with and shall operate reliably and accurately with the existing system. A preconstruction functional test shall be performed by the Contractor to confirm any existing troubles and/or deficiencies. The results of the test shall be submitted to the Harbors Construction Engineer. Existing fire alarm equipment shall be maintained fully operational until the new equipment has been tested and accepted. As new equipment is installed, it shall be tagged "NOT IN SERVICE" until the new equipment is accepted. Once the system modifications are completed, tested, and accepted by the Harbors Construction Engineer, it shall be placed in service. All new equipment shall have tags removed and the existing equipment shall be tagged "NOT IN SERVICE" until removed from the building.

- C. Equipment Removal. After acceptance of the system modifications by the Harbors Construction Engineer, all existing equipment not connected to the system shall be removed, all unused exposed conduit shall be removed, and all damaged surfaces and holes shall be patched, restored, and painted to match.

27.5 APPLICABLE PUBLICATIONS - The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- A. ASME International (ANSI/ASME).
ANIS/ASME A17.1 (2010) Safety Code for Elevators and Escalators
- B. Code of Federal Regulations (CFR).
29 CFR 1910.36 Occupational Safety and Health Standards,
Subpart E - Means of Egress, General
Requirements
29 CFR 1910.37 Occupational Safety and Health Standards,
Subpart E, Means of Egress, General
- C. Factory Mutual Engineering and Research Corporation (FM).
FM P7825 (2009) Approval Guide
- D. National Electrical Manufacturers Association (NEMA).
NEMA ICS 1 (1993) Industrial Control and Systems
- E. National Fire Protection Association (NFPA).
NFPA 1 (2018) Uniform Fire Code
NFPA 70 (2017) National Electrical Code
NFPA 72 (2022) National Fire Alarm Code
- F. Underwriters Laboratories Inc. (UL).
UL 464 (1990) Audible Signal Appliances
UL 864 (1991; R 1994, Bul. 1995) Control Units for
Fire- Protective Signaling Systems

- UL 1449 (1985; Errata 1986, Bul. 1993, 1994, and 1995)
UL FPED (2015) Fire Protection Equipment Directory
- G. American Electricians Handbook by Croft (latest edition), McGraw-Hill;
- H. Local ordinances and regulations of the City and County of Honolulu;
- I. International Municipal Signal Association Inc. Specification No. 19-1 1991, polyethylene insulated, polyvinyl chloride jacket signal cable; and
- J. Applicable instructions of the manufacturer for equipment and materials supplied for the project.

27.6 SUBMITTALS

- A. Manufacturer's Catalog Data.
 - 1. Smoke sensors.
 - 2. Addressable interface devices.
 - 3. Fire alarm cables.
- B. Shop (Working) Drawings.
 - 1. Point-to-Point Wiring Diagrams. Drawings shall be job-specific. "Typical" or "generic" drawings are not acceptable. The diagrams shall include but not be limited to the following:
 - a. Locations of All System's Elements. Indicate all devices, junction boxes, and pass-through devices and entities where the cables and conductors can be accessed by personnel. Indicate the number of devices provided.
 - b. Also indicate the locations of all cable and conductor terminations and intermediate connections showing where they pass through without terminations/connections from and to equipment panels and/or devices.
 - c. Labeling of All Elements. All devices junction boxes, etc. shall be labeled by functional designations, locations and numbers such as building alphabet, room function and room number.

- d. Fire Alarm Wiring and Color Codes. All cable and conductor color codes, the wire marking system and marker designation as specified herein shall be shown.
2. Equipment and/or Modular Systems Wiring Diagram. Wiring diagrams showing all equipment (control panel and annunciator in separate panel) modules, components and key internal cabinet wiring that should be accessed for tests and maintenance. Drawings shall include but not be limited to the following:
- a. Equipment Modules and Components. The equipment modules and components layout (relative locations in proportion to the modules, components, and cabinet/enclosure sizes) including the fire alarm control panel(s), battery cabinets, etc. The drawings shall also show the arrangement of modules, components, wiring and expansion space within the FACP cabinet.
 - b. Input and Output Circuits Labeling. Label the input and output circuits by circuit designations specified herein.
 - c. Internal - External Circuits Interface Information. Only information that interfaces with external circuits and internal equipment wiring need be shown. All external wiring and circuits shall be shown in the riser diagram and the Contractor furnished Point-To-Point Wiring Diagrams.
 - 1) Changes in or deletion of the modular system wiring diagrams shall not require changes to the riser diagrams and the Contractor furnished Point-To-Point Wiring Diagrams and vice versa except for the panel deletion or change.
 - 2) Provide a complete description of the system sequence of operation for all initiating, notification, and control devices via a sequence of operation matrix diagram.
- C. Design Data. Standby battery capacity calculations shall list the type of devices and modules, quantities, unit amperage draw for standby and alarm conditions, total amperage draw and battery amp/hour rating.
- D. Qualifications of fire alarm system installer and technician as stipulated in item entitled "QUALITY ASSURANCE" hereinbelow.

- E. Guaranty. Submit guaranty as stipulated in item "GUARANTY AND CERTIFICATE" hereinbelow.
- F. Certificate. Submit certificate as stipulated in item "GUARANTY AND CERTIFICATE" hereinbelow.
- G. Written notification of all tests and test results as specified in item "TESTING" hereinbelow.
- H. Operations and Maintenance Manual.
 - 1. The manual may be provided in several volumes, if so approved by the Harbors Construction Engineer.
 - 2. All drawings shall be folded to letter size by individual sheets so they can be retained in the manual.
 - 3. The manual shall contain the following:
 - a. Manufacturer's Printed Equipment/System Operations and Maintenance Manual, and Devices Brochures:
 - 1) Start-up, operating, preventative maintenance, adjustment and troubleshooting procedures, and parts list.
 - 2) System Control Diagrams.
 - 3) Internal equipment wiring diagrams.
 - b. Approved fire alarm system shop drawings including battery capacity calculations.
 - c. Manufacturer's Representatives. The names, addresses and phone numbers of the fire alarm system manufacturer, the nearest manufacturer's representative, and the nearest supplier of the manufacturer's equipment and parts.
 - d. Fire Alarm System Test Results. Provide completed test data sheets with the recorded measured data obtained during pre-final testing in the designated spaces and a printout of the equipment program. The test plan shall be developed in accordance with NFPA 72, Chapter 7. Submit the following information.
 - 1) Test information applicable for the project.

- 2) Standard attendance signature sheets.
4. Provide 2 CDs of the Operations and Maintenance Manual in PDF format.
- I. As-Built Drawings. Drawings shall provide a detailed description of system operation during alarm, supervisory, and trouble modes and shall include a complete list of all system addresses including input/output logic. Upon completion and before final acceptance of the work, submit complete set of as-built drawings of the system for record purposes. Drawings shall include all components and circuit diagrams complete with conductor color codes and a listing of initiating devices.

27.7 QUALITY ASSURANCE

- A. Qualification of Installer. Installation shall be accomplished by an electrical contractor with a minimum of 5 years' experience in the installation of fire alarm systems in the State of Hawaii. The services of a technician provided by the control equipment manufacturer shall be provided to supervise installation, adjustments, and tests of the system. Prior to installation, submit data for approval by the Harbors Construction Engineer showing that the Contractor has successfully installed addressable, programmable analog intelligent interior fire alarm systems of the same type as specified herein, or that the Contractor has a firm contractual agreement with a subcontractor having such required experience. Include the names and locations of at least 2 installations where the Contractor or the subcontractor referred to above, has installed such systems. Indicate the type and design of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 18 months. Submit names and phone numbers of points of contact at each site.
- B. Qualifications of System Technician. Installation drawings, shop drawings, and "as-built" drawings shall be prepared by, or under the supervision of, a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein and is currently certified by the National Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level-III certification in Fire Alarm Systems program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings.
- C. Regulatory Requirements. Devices and equipment for fire alarm service shall be listed by Underwriters Laboratories, Inc. or approved by the

Factory Mutual System or listed by other Nationally Recognized Testing Laboratories.

- D. Requirements for Fire Protection Service. Equipment and material shall have been tested by Underwriters Laboratories, Inc. and listed in UL FPED or approved by Factory Mutual and listed in FM P7825. Where the terms "listed" or "approved" appear in this specification, they shall mean listed in UL FPED or FM P7825. The omission of these terms under the description of any item of equipment described shall not be construed as waiving this requirement.
- E. Standard Products. Materials and equipment shall be standard new products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least one year prior to bid opening. Select material from one manufacturer, where possible, and not a combination of manufacturers, for any particular classification of materials.
- F. Modification of References. In NFPA publications referred to herein, consider advisory provisions to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears; interpret reference to "authority having jurisdiction" to mean the State of Hawaii, Department of Transportation, Harbors.

27.8 GUARANTY AND CERTIFICATE

- A. The Contractor shall guaranty and certify in writing all work in this section for period of 1 year. Should any equipment or material fail due to defective equipment, material or workmanship within this period, the Contractor shall replace the item at no cost to the State.
- B. The 1-year guaranty shall start at the end of 30 consecutive days of trouble-free operation after certification and acceptance by the Harbors Construction Engineer whichever date is the latest.
- C. If, during the 1-year guaranty period, the new fire alarm system is inoperative or deficient and requires repair, the 1-year guaranty period shall be extended for additional 30 days after repair of the system.

27.9 MANUFACTURER QUALIFICATIONS - All components of the system shall be furnished by a single manufacturer, shall be of current design and shall be in regular and recurrent production. Provide design, materials and devices for a protected premises fire alarm system, complete, conforming to NFPA 72, except as otherwise or additionally specified herein.

27.10 SYSTEM DESIGN

- A. System Operation. System shall be a complete, supervised, noncoded, releasing, fire alarm system conforming to NFPA 72. The entire system shall operate in the alarm mode upon actuation of any alarm initiating device. The system shall remain in the alarm mode until all initiating device(s) are reset and the fire alarm control panel is manually reset and restored to normal. The system shall provide the following functions and operating features:
1. The FACP shall provide power, annunciation, supervision and control for the system.
 2. Provide Class B, Style 4, signaling line circuits.
 3. All alarm, supervisory, or trouble signals shall be automatically transmitted, via Hawaiian Telcom analog telephone lines, to the existing Harbors supervising station located at Aloha Tower (9th Floor). Contractor shall be responsible for ensuring that the signals are being transmitted properly to the satisfaction of the Harbors.
 4. Where the fire alarm system is responsible for initiating action in another emergency system control device or system, the addressable relay shall be within 3 feet of the emergency control device.
 5. Operation of a smoke sensor in an elevator lobby, elevator control room and elevator hoistway, except for the designated level, shall initiate elevator recall to the primary level. Operation of the smoke sensors in the designated level elevator lobby shall recall the elevator to the alternate level.
 6. An alarm signal shall automatically initiate the following functions:
 - a. Visual indication of the device operated on the main fire alarm control panel (FACP) and at the existing supervising station at Aloha Tower (9th Floor).
 - b. Continuous actuation of all alarm notification appliances.
 7. A supervisory signal shall automatically initiate the visual indication of the device operated on the main fire alarm control panel (FACP) and at the existing supervising station at Aloha Tower (9th Floor).

8. A trouble condition shall automatically initiate the visual indication of the system trouble on the main FACP and at the existing supervising station at Aloha Tower (9th Floor).
- B. Addressable Interface Devices. The addressable monitor device shall provide an addressable input interface to the FACP for monitoring normally-open or normally- closed contact devices such as independent fire sprinkler systems, etc.
1. Addressable Monitor Modules. Addressable Monitor Module shall be provided to connect supervised conventional initiating device or zone of supervised conventional initiating devices, including but not limited to fire sprinkler pressure, tamper and flow switches, and other such devices. Monitor module shall mount in a 4-inch square, 2-inch deep electrical box and shall be capable of Style B supervised wiring to the initiating device. Monitor module shall provide address setting means switches and store an internal identifying code which the control panel shall use to identify the type of devices. Monitor module shall contain an integral LED that flashes each time the monitor module is polled.
 2. Addressable Control Modules: The control module shall be capable of operating as a relay (dry contact Form C), to control auxiliary functions. The module shall mount in a 4-inch square, two-1/8 inch deep electrical box and shall be capable of Class B supervised wiring to the indicating or control device. Module shall contain an integral LED that flashes each time the module is polled.
 3. Isolation Modules. Provide isolation modules to isolate wire-to-wire short circuits on a loop and limit the number of other modules or sensors that are incapacitated by the short circuit fault. Place isolator modules at signaling line circuit T-taps where the T-tap will contain more than 5 addressable devices and located such that not more than 30 addressable devices are connected between isolation modules. If a wire-to-wire short occurs, the module shall automatically open the circuit. On repair of the short, the module shall automatically reconnect the isolated section of the signaling line circuit. The module shall mount in a 4-inch square, 2-inch deep electrical box. Module shall contain an integral LED that flashes each time the module is polled and illuminates steadily to indicate that a short has been detected and isolated.
- C. Smoke Sensors.

1. Photoelectric Smoke Sensors. Provide addressable photoelectric smoke sensors as follows:
 2. Provide analog photoelectric smoke sensors utilizing the photoelectric light scattering principle for operation. Smoke sensors shall be listed for use with the fire alarm control panel.
 3. All components shall be rust and corrosion resistant. Vibration shall have no effect on the sensor's operation. Protect the sensor chamber with a fine mesh metallic screen which prevents the entrance of insects or air born materials. The screen shall not inhibit the movement of smoke particles into the chamber.
 4. Provide twist lock bases for the sensors. The sensors shall maintain contact with their bases without the use of springs. Provide companion mounting base with fixed wiring terminals. Terminate field wiring on the fixed terminals.
 5. Sensors shall be equipped with screw terminals for each conductor.
 6. The sensor address shall identify the particular unit, its location within the system, and its sensitivity setting. Sensors shall be of the low voltage type rated for use on a 24 VDC system.
 7. Sensors shall include alarm LED which flashes under normal conditions, indicating that the sensor is operational and in regular communication with the control panel. LED to be placed into steady illumination by the control panel when the sensor is in alarm.
- D. System Wiring. Provide wiring materials under this section as specified in ARTICLE XXVIII - ELECTRICAL WORK with the additions and modifications specified herein.
1. Wiring within Cabinets, Enclosures, Boxes, Etc. Provide wiring installed in a neat and workmanlike manner and installed parallel with or at right angles to the sides and back of any box, enclosure or cabinet. All conductors which are terminated, spliced, or otherwise interrupted in any enclosure, cabinet, mounting or junction box shall be connected to terminal blocks. Mark each terminal in accordance with the wiring diagrams of the system. Make all connections with approved pressure type terminal blocks, which are securely mounted.
 2. Above Grade Alarm Wiring. Conductors shall be Type THHN/THWN. Type TW is not permitted. Signaling line and speaker circuits shall be twisted pair No. 18 to No. 12 AWG,

depending on distance and per manufacturer's recommendations. Wire size shall be sufficient to prevent voltage drop problems. Provide wiring in raceways as specified in ARTICLE XXVIII - ELECTRICAL WORK. The minimum conduit size shall be 0.75 inch. Shielded wiring shall be utilized where recommended by the manufacturer. For shielded wiring, the shield shall be grounded at only one point, which shall be in or adjacent to the FACP. T-taps are permitted where allowed by the fire alarm system manufacturer.

3. Conductor Terminations. Color coding is specified under paragraph 6.14 INSTALLATION. Labeling of any circuit at terminal blocks in terminal cabinets, FACP, and remote fire alarm control units shall be provided at each conductor connection. Each conductor or cable shall have a shrink-wrap label to provide a unique and specific designation. Each terminal cabinet and FACP shall contain a laminated drawing which indicates each conductor, its label, circuit, and terminal. The laminated drawing shall be neat, using 12-point lettering minimum size, and mounted within each cabinet, panel or unit so that it does not interfere with the wiring or terminals.
4. Cable Markers in Junction Boxes.
 - a. Rectangular, commercially available polyethylene cable tags with pre-punched holes at each corner for the attachment with self- locking ties.
 - b. Minimum 0.035-inch thick.
 - c. Average Tensile Strength. 4500 pounds psi.
 - d. Non-corrosive, non-conductive, resistant to acids, alkalis, organic solvents, salt water and distortion-resistant in temperatures up to 300 degrees F.
5. Cable and Conductor Ties. One-piece, self-locking nylon ties having a minimum loop tensile strength of 175 pounds and resistance to the same conditions as cable marker.
6. Corrosion and Fungus Protection. Metallic equipment shall be coated with a rust inhibiting treatment and standard finish per the manufacturer's standard. Components shall be protected against corrosion and fungus (e.g. circuit boards shall be epoxy coated).

27.11 EXAMINATION OF THE DRAWINGS AND SPECIFICATIONS - Confirm and coordinate voltages and requirements of equipment of other systems which will be connected to the fire alarm system. They include any other equipment connected to the fire alarm system. Include the above information on the field-posted as-built drawings.

27.12 EXAMINATION OF EXISTING SITE CONDITIONS - Equipment and devices shall be installed in the locations and heights shown on the drawings and/or as specified herein.

- A. The location of the equipment and devices shown on the plans are approximate. Before installing, the Contractor shall study adjacent construction, verify all dimensions, sizes, and types of equipment at the job site (including Aloha Tower), and perform installation in what he considers the most logical manner.
- B. Any changes from the locations shown on the drawings must be approved by the Harbors Construction Engineer and shown on the "field-posted as-built" drawings.
- C. Any device may be relocated within 10 feet before installation at the direction of Harbors Construction Engineer without additional charge to State.

27.13 INSTALLATION

- A. Protect dissimilar metals with approved fittings and treatment.
- B. All metallic conduits and boxes shall be grounded with a green wire ground conductor.
- C. Equipment Installation.
 - 1. Equipment, materials, installation, workmanship, inspection, and testing shall be in accordance with NFPA 70, NFPA 72, DCAB/ADA codes/laws/regulations, and as modified herein.
 - 2. Smoke Sensors. Locate sensors on a 4-inch mounting box. Sensors located on the ceiling shall be installed not less than 4 inches from a side wall to the near edge. Those located on the wall shall have the top of the sensor/detector at least 4 inches below the ceiling, but not more than 12 inches below the ceiling. In the case of solid joist construction, the sensors shall be mounted on the bottom of the joists. Install smoke sensors no closer than 3 feet from air handling supply outlets.
- D. Cables and Conductors.

1. Above Grade Conductor Installation.

- a. Conductors shall not be installed in the same conduits, ducts, junction boxes, etc. with non-fire alarm circuits. 120-volt AC fire alarm circuit conductors shall not be contained within the same multi-conductor cable nor installed with cables and other conductors in the same conduits, ducts, enclosures, junction boxes, etc. with 24-volt DC fire alarm circuits.
- b. Conductors shall be installed in continuous lengths. Splices shall be made in above ground junction boxes by terminating wires with wirenut connections.
- c. Cable pulling tensions shall not exceed manufacturer's recommended pulling tensions.
- d. Wire-Nut Connectors. Permitted for connections in above grade locations only, in junction boxes and equipment and to devices that are not available or manufactured with screw-type connections.

2. Conductor Color Code.

- a. Color coding is required for circuits and shall be maintained throughout the circuit. Conductors used for the same function shall be similarly color coded.
- b. Multi-Conductor Cable. Green, white, and gray colors shall not be used.

E. Cable and Conductor Terminations and Dress. The following requirements shall apply to terminal cabinets, junction and outlet boxes larger than 12 inches x 12 inches:

1. Electric equipment shall be installed in a neat and workmanlike manner.
2. Cable conductors or individual conductors shall be bundled, dressed and held together with cable straps, ties or lace and fanned in a manner that equipment terminals are visible and accessible, and allow the connections to be removed and reconnected without moving a large number of wires.

- a. Conductors to screw type connectors shall be terminated with wire lugs or with approved cable termination connectors compatible with the specific termination.
 - b. A minimum of 6-inch excess length shall be provided for conductors from the bundles to the connectors using a vibration loop as described by NEC 300-14.
 - c. Conductors shall be labeled as specified herein.
3. Cross-connected conductor pairs in junction and device outlet boxes or cabinets will not require bundling and cable straps, ties or lace but shall be neatly installed with a minimum of 6 inches of excess length so conductors can be easily traced between terminals. Label all conductors as specified herein.
 4. Cabinets, junction boxes, outlet boxes, other boxes, shall have sufficient space to accommodate all conductors installed in them without crowding.
 5. Completed work shall be uncrowded and uncluttered and shall allow accessibility without cutting and/or removing of any straps, ties, laces, cables, components, devices, brackets, modules, equipment and like items.
 6. Cables shall be secured to junction boxes or to other system components using cable clamps and wraps. Provide cable support posts as required to facilitate system installation.

F. Cable and Conductor Identification System.

1. Conductor Markers.
 - a. Provide markers at ends of each conductor connected to the control panels.
 - b. Attach markers a minimum of 4 inches from the ends of conductors in a manner that will not permit accidental detachment.
2. Signaling Line Circuits. Signaling line circuits shall be labeled by circuit number as shown on the drawings. Conductors shall be labeled in the fire alarm panel(s), the building's main fire alarm junction box and termination cabinet.

- G. Field Touch-Up Painting. Touch-up painted surfaces and fire alarm system components damaged during installation to match the existing or specified paint and color.
- H. Disconnection and Removal of Existing System.
1. The existing fire alarm system shall remain in operation at all times during the installation and commissioning of system modifications. The Contractor shall take precautions to avoid any accidental activation of the existing fire alarm system. When making modifications to the existing systems, the Contractor shall minimize the time the existing system is out of service. Prior to any impairment of the existing system the Contractor shall notify the Harbors Construction Engineer. The Contractor shall comply with 29 CFR 1910.36 and 29 CFR 1910.37. No impairment shall exceed 4 hours. The Contractor shall establish a fire watch to monitor the impaired area until the entire fire alarm system is returned to full operation. The Contractor shall schedule outages 30 days in advance. Once this new system is on-line and accepted by the Harbors Construction Engineer, remove the old system. As new equipment is installed, label it "NOT IN SERVICE". Upon acceptance, remove labels.
 2. Disconnect and remove the existing fire alarm systems where indicated and elsewhere in the specification. Blank off openings with stainless steel cover plate. Properly salvage any items as directed by the Harbors Construction Engineer.
 3. Properly dispose of non-salvageable fire alarm outlet and junction boxes, wiring, conduit, supports, and other such items.
- I. Connection of New System: The following new system connections shall be made during the last phase of construction, at the beginning of the preliminary tests. New system connections shall include: Connection of system to the new elevator controller.
- J. Firestopping. Provide UL listed firestopping for all holes at conduit penetrations through floor slabs, fire rated walls, corridor walls, and vertical service shafts.

27.14 TESTING

- A. Testing.
1. After completion of the fire alarm system modifications leave the system on for a minimum of 2 consecutive weeks to demonstrate

that contract work operates, meets the requirements of the specifications and does not affect the operation of the entire fire alarm system. The Contractor shall be on 24-hour standby during this 2 week period to respond to trouble or service calls. The Contractor shall provide an emergency contact name and telephone number

2. Upon successful completion of the 2 week operational period, arrange with the Harbors Construction Engineer for a pre-final fire alarm system test and inspection. The test and inspection shall demonstrate that all the Contractor-installed fire alarm system equipment, devices cables and conductors are operating acceptably and have been installed in accordance with this specification.
 - a. Accordingly, the test demonstrates that the system is ready for a final test of the overall fire alarm system.
 - b. Representatives at the pre-final test shall include the Contractor, fire alarm system manufacturer's representative, user, and the Harbors Construction Engineer. Representatives at the Final test shall include all the foregoing representatives.
3. Preliminary Test Results. Include the control panel and initiating and indicating devices, a unique identifier for each new device with an indication of test results, and signature of the factory-trained technician of the control panel manufacturer and equipment installer.
4. Preliminary Testing. Conduct preliminary tests to ensure that all devices and circuits are functioning properly. Tests shall meet the requirements of sub-item entitled "Minimum System Tests" of this section. After preliminary testing is complete, provide a letter certifying that the installation is complete and fully operable to the State a minimum of 7 calendar days before the formal acceptance test date required in the paragraph below. Without the submission of this report, the final acceptance test is automatically canceled.
5. Formal Acceptance Testing. Notify the Harbors Construction Engineer in writing when the system is ready for final acceptance testing. Submit request for test at least 15 calendar days prior to the test date. A final acceptance test will not be scheduled until the O&M Manuals are submitted and the following are provided at the job site:
 - a. Marked-up red line drawings of the system as actually installed.

- b. Complete program printout including all input/output addresses.
 - c. The final tests shall be witnessed by Harbors Construction Engineer. At this time, any and all required tests shall be repeated according to Harbors Construction Engineer. Following acceptance of the system, as-built drawings and Operation and Maintenance (O&M) Manuals shall be submitted for review and acceptance. Permission to begin demolition fire alarm system components will not be permitted until the as-built drawings and O&M Manuals are received.
6. Minimum System Tests. Test the system in accordance with the procedures outlined in NFPA 72, Chapter 7. The required tests are as follows:
- a. Verify the absence of unwanted voltages between circuit conductors and ground. The tests shall be accomplished at the preliminary test with results available at the final system test.
 - b. Verify that the control units are in the normal condition as detailed in the manufacturer's operating and maintenance manual.
 - c. Test each signaling line and indicating device and circuit for proper operation and response at the control units and remote annunciator.
 - d. Test the system for all specified functions in accordance with the contract drawings and specifications and the manufacturer's operating and maintenance manual.
 - e. Determine that the system is operable under trouble conditions as specified.
 - f. Visually inspect all wiring.
 - g. Verify that all software control and data files have been entered or programmed into the FACPs. Hard copy records and 2 identical CD copies of the software and data files shall be provided to the Harbors Construction Engineer.

- h. All new devices shall be tested and a minimum of 10 percent of existing devices must be tested to confirm the existing functions were not altered. If the system executive software was altered, a minimum of 10 percent of all devices including one of each input and output type must be tested.
- 7. If requested by the Harbors Construction Engineer, isolate the contract work from the overall system and demonstrate that the contract work does not affect the operation of the overall fire alarm system and shall repeat tests at no additional cost to the State.
- B. Testing shall ensure proper communication between the existing supervising station monitoring equipment at Aloha Tower and the existing fire alarm control panel.
- C. Concealed Work. Concealed work re-opened and re-closed at random during the formal inspection as requested by the Harbors Construction Engineer shall be done at no additional cost to the State.
- D. Testing Tools and Equipment. The Contractor shall provide the tools and equipment, including handheld radios, etc. necessary to accomplish the testing.

27.15 TRAINING

- A. Conduct sufficient training and instruction for the operating and maintenance staff, as determined/designated by the Harbors Construction Engineer, on the operation of the fire alarm panel and system.
- B. The training session shall be conducted during normal business hours, and shall last as long as necessary to properly instruct the staff, but not less than 4-hours.
- C. Instruction shall include hands-on training in routine operations and queries (reading of normal status and trouble status) of the new devices and connections.

27.16 PAYMENT - Payment for the addressable Fire Alarm System shall be made as described in ARTICLE X of these Specifications.

ARTICLE XXVIII - ELECTRICAL WORK

28.1 GENERAL

- A. Work under this Article consists of the furnishing and installation of electrical work, including but is not necessarily limited to, the following:
 - 1. Secondary electrical system wiring, including overcurrent protection devices, raceways, branch circuiting and junction boxes.
 - 2. Raceways for fire alarm system wiring.
 - 3. Testing.
- B. Special Conditions.
 - 1. Contractor shall arrange for Harbors inspection and acceptance of new work.
 - 2. The entire installation shall be done in strict accordance with local ordinances; National Electrical Code; applicable regulations of the National Board of Fire Underwriters; specifications of ANSI, NEMA, UL, and IPCEA.
 - 3. In the event of conflict between pertinent codes and regulations, and the requirements of the referenced standards, or those indicated in the Specifications and on Drawings, the provisions of the more stringent shall govern.
- C. Coordination.
 - 1. Refer to all project Drawings and to all sections of the project Specifications. Coordinate and fit all work accordingly so that all electrical outlets and equipment will be properly located and readily accessible. The Drawings indicate the relation of wiring and connections and must not be scaled for exact locations. Verify all construction dimensions at the project and make changes necessary to conform to the building as constructed. Work improperly installed due to lack of construction verification shall be corrected at the Contractor's expense.
 - 2. Cut, break, drill and patch as required to install electrical system. Repair any surface damaged or marred by notching, drilling, or any other process necessary for installation of electrical work. Patch any damaged surfaces to match the existing surface.

3. During pricing and construction, Contractor shall coordinate his work with other trades to avoid omissions and overlapping of responsibilities.

28.2 RELATED WORK - ARTICLE XXVII - FIRE ALARM SYSTEM.

28.3 SUBMITTALS

- A. Product Data.
 1. Junction boxes and cabinet with any dimension larger than 6".
 2. Wiring devices.
 3. Circuit breakers.
 4. Wiring devices.
 5. Luminaires and drivers.
- B. Test Results.

28.4 MATERIALS

- A. Materials shall be new and those items listed by the Underwriters' Laboratories shall bear "UL" label of approval.
- B. Electrical equipment shall be supplied through the manufacturer's designated representative by a local distributor.
- C. Proof of compliance shall be furnished when shop drawings are submitted.
- D. Where two or more similar type items are furnished, all shall be of the same manufacture, e.g., safety switches shall be of the same manufacturer unless otherwise noted.
- E. Raceways.
 1. Rigid Steel Conduit. Rigid steel, zinc-coated inside and outside, for use with threaded fittings. ANSI C80.1.
 2. Flexible Metal Conduit. Flexible steel conduit; zinc-coated inside and outside, smooth inside walls, liquid-tight with factory fittings for liquid-tight installation. Provide bushings with bonding

jumper lugs for flexible conduit in excess of six feet in length. UL 360.

F. Boxes and Cabinets.

1. Outlet and Small Junction Boxes (Dimension Less than 6-inches). Small junction boxes shall be die-cast aluminum with threaded hubs. Nominal 4-inches square by 2-inches deep.
2. Boxes Larger than 4 Inches Square. Fabricated from NEC grade steel, zinc-coated for corrosion protection, prime painted and finished to match adjacent architectural elements for interior locations.

G. Wiring Devices:

1. General. Ratings and NEMA arrangement types as indicated. Drawings show minimum application ratings, specification describes nominal ratings.
2. Duplex Receptacles. Duplex, 125V, NEMA 5-20R, ivory body, grounding type, specification grade.
3. Ground Fault Circuit Interrupters. Duplex, 125V, NEMA 5-20R, ivory, unless otherwise indicated, specification grade and UL listed per UL 943 with 6 milliampere ground fault sensing circuit with test and reset buttons.
4. Toggle Switches. 120/277V, 20A, 1 HP, quiet, non-mercury type, ivory body.
5. Device Plates. Cast aluminum with stainless steel screws for surface mounted outlet boxes. Stainless steel Type 302 for flush mounted outlet boxes.

H. Conductors.

1. Solid or stranded copper, sizes according to American Wire Gauge as shown on Drawings and #12 AWG minimum unless otherwise indicated. Stranded conductors only for #8 AWG and larger. All wiring shall be color-coded.
2. Branch Circuits. Type THWN.
3. Conductors Larger Than #8 AWG. Type XHHW.

4. Conductors for Equipment Connection. Stranded flexible type.
5. Fire Alarm System Wiring. As indicated in ARTICLE XXVII - FIRE ALARM SYSTEM.

I. Circuit Breakers.

1. Circuit breakers, unless otherwise shown, shall be molded case, toggle mechanism operated, with no-fuse ambient-compensated thermal- magnetic overload automatic trip units for overcurrent and short-circuit protection, and contacts rated to interrupt short-circuit currents as specified on Drawings. Multi-pole breakers shall have single, common operating handle for all poles. Toggle positions "ON", "OFF" and "TRIPPED" and breaker rating engraved or embossed on body and visible without removing enclosure cover. Provide shunt trip coil where indicated.
2. Circuit breakers installed in existing panelboards shall be of a manufacture compatible with the panelboard.
3. Provide updated, typewritten panelboard directories for all panelboards modified by the Contract.

J. Low Voltage Dry-Type Mini-Power Center.

1. Mini-power center shall include a primary main breaker, an encapsulated dry-type transformer and a loadcenter with secondary main breaker. kVA and voltage ratings shall be as indicated.
2. Unit shall be designed for continuous operation at rated kVA for 24 hours a day, 365 days a year with normal life expectancy per ANSI C57.96.
3. Primary main, secondary main and feeder breakers shall be enclosed with a padlockable hinged door.
4. Mini-power centers shall be suitable for service entrance application and labeled as such.
5. Transformers shall be insulated with a 180 degrees C insulation system and rated at 115 degrees C temperature rise.
 - a. Required performance shall be obtained without exceeding the above-indicated temperature rise in a 40 degrees C

maximum ambient, with a 30 degrees C average over 24 hours.

- b. All insulation materials shall be flame-retardant and shall not support combustion as defined in ASTM Standard Test Method D635
 - c. Transformer core shall be constructed with high-grade, non-aging, silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Maximum magnetic flux densities shall be substantially below the saturation point. The transformer core volume shall allow efficient transformer operation at 10% above the nominal tap voltage. The core laminations shall be tightly clamped and compressed. Coils shall be wound of electrical grade aluminum with continuous wound construction.
 - d. The core and coil assembly shall be completely encapsulated in a proportioned mixture of resin and aggregate to provide a moisture proof, shock-resistant seal. The core and coil encapsulation system shall minimize the sound level.
 - e. The core of the transformer shall be grounded to the enclosure.
 - f. Transformer sound levels shall conform to NEMA ST-20.
- 6. Secondary bus shall be copper.
 - 7. All interconnecting wiring between the primary breaker and transformer, secondary main breaker and transformer and distribution section shall be factory installed.
 - 8. All transformers shall be equipped with a wiring compartment suitable for conduit entry and large enough to allow convenient wiring.
 - 9. Each mini-power center shall include a primary main breaker with an interrupting rating of 14 KAIC at 480 volts; and a secondary main breaker with an interrupting rating of 10 KAIC at 120/240 volts and a loadcenter.
 - 10. The secondary distribution section shall accommodate plug-in breakers with AIC ratings as indicated.

11. The enclosure shall be totally enclosed, non-ventilated, NEMA 3R.

K. Luminaires.

1. Provide luminaires specifically engineered for LED light sources and drivers. Use of linear or screw-base retrofit LED light sources is not acceptable. LED luminaires shall carry a minimum manufacturer's warranty of 5 years. The Surety shall not be held liable beyond two (2) years of the project acceptance date.

2. LED Light Sources.

- a. Correlated Color Temperature (CCT) shall be in accordance with NEMA ANSLG C78.377: Nominal CCT: 4000 degrees K, unless otherwise specified.
- b. Color Rendering Index (CRI) shall be greater than or equal to 80 unless otherwise indicated.
- c. Color Consistency: Manufacturer shall utilize a maximum 4-step MacAdam ellipse binning tolerance for color consistency of LEDs used in luminaires.

3. LED Luminaire Power Supply Units (Drivers). UL 1310. LED Power Supply Units (Drivers) shall meet the following requirements:

- a. Minimum efficiency shall be 85 percent.
- b. Shall be rated to operate between ambient temperatures of minus 22 degrees F and 104 degrees F.
- c. Shall be designed to operate on the voltage system to which they are connected, typically ranging from 120V to 277V nominal.
- d. Operating frequency shall be: 60 Hz.
- e. Power Factor (PF) shall be greater than or equal to 0.90.
- f. Total Harmonic Distortion (THD) current shall be less than or equal to 20 percent.
- g. Shall be mounted integral to luminaire. Remote mounting of power supply is not allowed unless noted.

- h. Power supplies in luminaires shall be UL listed with a sound rating of "A".
 - i. Shall be equipped with over-temperature protection circuit that turns light source off until normal operating temperature is achieved.
 - 4. A warranty must be provided for full replacement of LED luminaires, due to any failure for a period of 5 years. The warranty shall provide for the repair or replacement of the luminaire and LED power components (LED driver, light source thermal control device and surge protector).
- L. Hardware, Supports, Backing, Etc..
 - 1. Provide all hardware, supports, backing and other accessories necessary to install electrical equipment. Wood materials shall be treated against termites, iron or steel materials shall be Type 316 stainless steel, and non-ferrous materials shall be brass or bronze.
 - 2. Bolts, nuts, washers, and screws used for exterior use shall be high quality stainless steel or brass.

28.5 CONSTRUCTION METHODS

- A. Raceways.
 - 1. Use conduits with approved coupling and connectors. All cuts square, using saw. Ream the ends. Bends made with approved tools. Reject flattened or crushed conduit. No running thread. Bushing and two locknuts at connection to boxes and enclosures.
 - 2. All raceways shall be blown and swabbed after installation to remove any water then immediately sealed to prevent water infiltration during construction. Raceways must remain sealed except when pulling conductors. If water is discovered during the warranty period the Contractor shall remove water from raceways and associated boxes at no additional cost to the State.
 - 3. Exposed conduit runs to be parallel and/or perpendicular to architectural and structural elements. Unless otherwise indicated, galvanized rigid steel for all surface mounted conduit. Electrical metallic tubing (EMT) shall not be utilized.
 - 4. Minimum conduit diameter shall be 3/4-inch trade size.

5. Raceway penetrations through walls and raceway terminations shall be watertight and be caulked, sealed and made with materials approved for that purpose.
- B. Boxes.
1. Plumb and securely fasten.
 2. Remove all debris from interior.
- C. Conductors.
1. Lubricants. Non-wax type, chemically neutral to insulation and sheath. Mechanical means for pulling to be torque-limiting type and not be used for #2 AWG and smaller wires.
 2. No-solder pressure connectors or crimp connections for #8 AWG and larger wires. Remove all sharp points that can pierce tape. Reinsulate according to wire manufacturer's directions. Make splices within boxes in accessible locations.
 3. Clean all raceways, boxes, and enclosures before pulling wires and cables. Form neatly in enclosures for minimum of cross-overs.
- D. Miscellaneous Details.
1. Provide necessary foundations, supports, backing, etc., for all raceways and equipment. Attach to wood and steel by screws or bolts. Attach to concrete by expansion anchors. Powder charge driven studs and anchors shall not be used.
 2. Clean all surfaces of enclosures and equipment.
 3. Close all unused knockout holes.
- E. Identification.
1. All enclosed circuit breakers, cabinets, and junction boxes with dimension larger than 6 inches shall be provided with plastic plate identifying itself and its use.
 2. Plastic plate shall be laminated black and white, engraved 1/4 inch high lettering to expose black layer. Plate shall be riveted to cover and located directly below device handle or top side of door.
- F. Grounding.

1. Ground metallic enclosures, raceways and electrical equipment according to requirements of National Electrical Code, Article 250.
2. Ground connections to equipment, raceways, motors, and other metallic parts directly exposed to ungrounded conductors by insulated conductors, No. 12 minimum, AWG copper, NEC Type TW, green insulation. Provide insulated ground wires within raceways. Run equipment ground wires together with circuit conductors.

G. Connections to Equipment Provided by Other Trades.

1. Electrical Contractor shall provide conduit, wiring and all electrical connections from building wiring to equipment, including all switches, motor protection devices, as specified by other trades.
2. Electrical Contractor shall ascertain from other trades furnishing equipment, the exact size and type of all equipment, the exact locations of such equipment and the proper point where electrical connections should be brought through the floors or walls, as the case may be. Locations shown are diagrammatic only; correct locations shall be the full responsibility of the Electrical Contractor.
3. Examine Architectural, Mechanical and other Drawings and Specifications for information concerning equipment and control apparatus and diagrams.
4. Provide and install safety switches as necessary for such equipment.
5. All control devices and control wiring shall be provided as described in the installation manuals of equipment and/or the Drawings and Specifications of other trades and disciplines.

H. Testing.

1. Upon completion of this portion of work, and prior to its acceptance by the State, make all required tests. Any deficiencies found shall be rectified and work affected by such deficiencies shall be completely retested at Contractor's expense. Written notification of all proposed tests shall be provided to the Harbors Construction Engineer a minimum of seven (7) days prior to the date of the test.
2. Demonstrate operation of electrical systems. Provide labor, apparatus, and equipment for systems' demonstrations. The

various tests shall be under the direction of the Harbors Construction Engineer.

3. A visual inspection of all electrical equipment, to check for foreign material, tightness or wiring and connection, proper grounding, etc. shall be made prior to actual testing.
4. Devices Subject to Manual Operation. Each device subject to manual operation shall be operated at least 5 times, demonstrating satisfactory operation each time.
5. 600-Volt Wiring Test. Test wiring rated 600-volt and less to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on wiring No. 6 AWG and larger diameter using instrument which applies voltage of approximately 500 volts to provide direct reading of resistance. Minimum resistance shall be 250,000 ohms. Submit results to the Harbors Construction Engineer.
6. Ground-Fault Receptacle Test. Test ground-fault receptacles with a "load" (such as a plug-in light) to verify that the "line" and "load" leads are not reversed.
7. Operational Testing of Existing Emergency Generator. Coordinate with the Harbors emergency generator maintenance contractor for operational testing of the new elevator and the existing Aloha Tower emergency generator. Tests shall simulate typical operating conditions during a utility power outage, including operation of the existing automatic transfer/bypass-isolation switch. All costs for testing of the existing generator shall be the responsibility of the Contractor. Generator testing shall be conducted in the presence of the Harbors Construction Engineer.

28.1 PAYMENT - Payment for Electrical Work shall be made as described in Article X of these Specifications.

ARTICLE XXIX - MODERNIZE ELECTRIC TRACTION ELEVATORS

29.1 GENERAL - This Section specifies:

- A. This Section includes alterations to the existing electric traction passenger elevator fixtures, car finished flooring, hoistway equipment, and machine room equipment.
- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XXIII - RESILIENT FLOORING
 - 2. ARTICLE XXIV - PAINTING
 - 3. ARTICLE XXV - MECHANICAL WORK
 - 4. ARTICLE XXVII - FIRE ALARM SYSTEM
 - 5. ARTICLE XXVIII - ELECTRICAL WORK

29.2 DESCRIPTION

- A. Provide all engineering, labor, material, equipment, tools, permits, mobilization and resources necessary to safely and diligently modernize the elevator as specified herein. The project is intended to provide Harbors with reliable operation, minimal interruptions to Harbors and tenants, and present a professional completed elevator.
- B. Modify all equipment as necessary to accommodate the installation of the new elevator equipment, machine(s)/motor(s), door operator(s) and related hardware, cab aesthetics and ADA compliant signal fixtures.
- C. Harbors will not be responsible for changes/modifications for structural, mechanical, electrical or other building systems required to accommodate Contractor's equipment. Any changes/modifications will be the Contractor's responsibility.
- D. Contractor will provide protective guarding and barricading to protect the public from jobsite hazards. This includes open hoistways, machine rooms, material and tools.
- E. Contractor will take all precautions necessary to protect building premises from damage for the duration of the project. Contractor will be responsible to repair or replace items damaged or altered from original conditions due to its own construction activity.

- F. Contractor will make all necessary provisions for new components.
- G. Contractor will properly remove and dispose all elevator equipment and material removed in the process of the modernization. Disposal and removal will be completed diligently, and items will not be stored or staged in public areas. This includes all oil/debris removed and/or replaced with this project.
- H. Contractor will include all provisions per the Authority Having Jurisdiction (AHJ), permits, testing and inspection costs.

29.3 DEFINITIONS

- A. Defective Elevator Work: Operation or control system failures; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; the need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.
- B. Refurbish: The term "refurbish" shall be defined as the complete disassembly of a part or system. All parts shall be inspected for wear, corrosion, and/or damage. All parts and systems shall be repaired and rebuilt to a new condition with OEM parts. All rust and corrosion shall be removed and all exposed metals finished with two coats of rust-inhibiting machine enamel. All refurbished parts shall be deemed to be in an "As-New" condition, per OEM standards and covered in the new equipment Warranty.
- C. Items listed in the singular are to be interpreted as being as many of each listed items as necessary to provide a complete work scope for all elevators, landings, door openings, etc.
- D. Authority Having Jurisdiction (AHJ): For the purposes of this Article, shall mean the State of Hawaii Occupational Safety and Health (HIOSH).

29.4 SUBMITTALS

- A. Submit in accordance with these Specifications.
- B. Product Data: Include detailed information about the equipment, capacities, sizes, performances, operations, safety features, finishes, and any other relevant information regarding the proposed products.
- C. Product Samples: Provide samples of all the finishes and products intended for car interiors and fixtures. These samples will be reviewed and approved by the Harbors and Contracting Officer before proceeding further.

- D. **Shop Drawings:** The shop drawings should clearly depict plans, elevations, sections, and details indicating service at each landing, machine room layout, coordination with the building structure, relationship with other construction elements, and equipment and signal locations. Highlight any variations from the specified requirements, maximum dynamic and static loads imposed on the building structure at support points, and the maximum and average electrical power demands. Additionally, provide data on power confirmation, manufacturer power tolerance requirements, equipment maximum heat release, and manufacturer heat and humidity tolerance requirements, along with elevator interior finish and fixture shop drawings. The modernized elevator shall remain within the existing structural reactions/loading, electrical loading, and mechanical loading of the current elevator system.
- E. Pre-modernization decibel levels in the elevator cab and machine room when running at contract speed without the exhaust fan running.
- F. Product brochures, samples, catalogs, cut sheets, photos, color charts or other pertinent material required for submission shall be submitted with the Shop Drawings. Contractor shall be responsible for all submittals requested by Contracting Officer within the specifications and contract documents.
- G. Approval of the submittals shall be for general review purposes only. Final responsibility for measurements, Code compliance, and specification adherence lies with the Contractor. Field verification of all dimensions is required by the Contractor.
- H. Provide State of Hawaii licenses for the installation Mechanic(s) that will be performing on-site work.
- I. **Maintenance Manuals:** Include operation and maintenance instructions, parts listing with sources indicated, recommended parts inventory listing, emergency instructions, and similar information. Include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel. Provide detailed instructions detailing the means to test the new elevator for compliance with ASME A17.1 and ASME A17.2. New Acceptance and Five Year test requirements. Submit for State's information at Project closeout as specified in Division 1. Provide "On-Board", site-specific interface tools to perform diagnostic, minor programming, and test functions. Provide maintenance control program.
- J. **Inspection and Acceptance Certificates and Operating Permits:** As required by authorities having jurisdiction for normal and unrestricted elevator use.

29.5 REFERENCES

- A. All work shall be completed in accordance with national, state, and local codes in effect at the time the work is performed. All requirements of local building department and fire jurisdictions will be met by the Contractor.
- B. State of Hawaii, Local Fire, Elevator and Accessibility Codes.
- C. The American Society of Mechanical Engineers, Safety Code for Elevators and Escalators (ASME A17.1 – 2010 or latest edition).
- D. The American Society of Mechanical Engineers, Safety Code for Existing Elevators and Escalators (ASME A17.3 – 2011 or latest edition).
- E. Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Fair Housing Act Design Manual.
- F. National Fire Protection Association (NFPA 13)
- G. National Electrical Code (NEC), NFPA / ANSI 70 (latest edition)
- H. International Building Code (IBC) 2018, ICC A117.1-2009
- I. HAR Title 12, Subtitle 8, Part 11, Chapter 229 and 230.1

29.6 ACCESSIBILITY REQUIREMENTS

In addition to local governing regulations, comply with “Americans with Disabilities Act” (ADA), 2010 ADA Standards, including 2010 Standards for Titles II and II Facilities: 2004 ADAAG, Section 407.

29.7 APPROVED ELEVATOR SYSTEM MANUFACTURERS

KONE, Mitsubishi, Otis, Schindler, TK Elevator, Vantage, or approved equal.

29.8 NON-PROPRIETARY

The elevator control and drive systems that are approved must be universally maintainable, with built-in on-board diagnostics, fault logging, and testing per ASME A17.1. They should also have minor programming capability without the need for external electronic tools, hand-helds, or computers. If any systems require these external devices, they should be included in the Close-Out Submittal package, along with detailed operating instructions. Additionally, all parts for the entire elevator system should be easily accessible for purchase and inventory.

29.9 QUALITY ASSURANCE

- A. Installation Qualifications: From the date of bid submittal, the elevator contractor shall have a minimum of five (5) years of continuous licensed operation in the State of Hawaii, along with a minimum of fifty (50) elevator modernizations completed in the State of Hawaii, similar in material, design, and a record of successful in-service performance.

The Contractor must provide documentation to confirm their compliance. This includes submitting the Installation Qualification and experience documentation, along with references and a list of installations, within five (5) consecutive calendar days from the date of the request by the State of Hawaii Harbors. Failure to provide the necessary documentation to validate compliance with the qualification requirements specified herein may result in the rejection of the submittal. If the Contractor does not meet the required Installation Qualifications, their bid may be rejected.

29.10 PRODUCT DELIVERY, STORAGE & HANDLING

- A. All material shall be shipped in factory crates in applicable sizes to permit mobilization through available spaces. Contractor shall deliver the material in the manufacturer's original, unopened crating and packaging. Material shall be protected from any damage during transport, storage and the duration of the project.
- B. Delivery scheduling of material to building premises shall be pre-arranged and approved by Harbors.
- C. Storage of the material shall be coordinated by Harbors. Securing the material in the designated storage area(s) will be the responsibility of the Contractor.
- D. Hoisting of equipment and material shall be coordinated and approved in advance. Contractor shall provide a plan detailing planned methods of hoisting, including roof preparation, hoisting load certifications, and any special requirements which may affect building structure.

29.11 SITE EXAMINATION

- A. Contractor has carefully examined all existing site conditions, including all areas of where scope provided herein shall take place, which may affect the quality and intent of the scope specified within the contract.
- B. Contractor finds that there are no irregularities or Code provisions which may impact the scope specified, including but not limited to, machine

room size and clearances, hoistway dimensions or plumbness, any beam supports either currently existing or newly installed for the contractor's equipment.

- C. Harbors will not accept responsibility nor offer consideration for the Contractor's failure to visit site or a misunderstanding of materials to be furnished. In the absence of any such qualification, Contractor shall be responsible for providing all material and labor necessary to provide a complete, Code compliant installation.

29.12 FIELD INSTALLATION QUALITY CONTROL

- A. Tests
 - 1. Perform tests as required by Code and AHJ. Contractor shall demonstrate to AHJ that all elevators comply with all requirements set forth by ASME A17.1 and ASME A17.2 and related codes.
 - 2. After completion of any required tests which results in damaged components, Contractor shall restore or replace damaged components and absorb all material and labor costs for these components.
 - 3. Perform system tests for all Fire/Life Safety related items which interface with the elevator system.
 - 4. Prior to turnover, Contractor shall perform a Continuous Run test. This test will consist of running the elevator with full rated capacity for a 1-hour period. During the test, the elevator shall make continuous random floor runs in both directions of travel. If any faults or irregularity in operation occurs, Contractor shall all necessary adjustments and re-test.
 - 5. Perform full contract and no-load speed tests in both directions. Measurements shall be taken with a tachometer and be within 3% of rated speed.
 - 6. Verify all performance times for floor to floor, door operation and leveling are all within acceptable levels provided herein.

29.13 CLEANING, ADJUSTING AND PAINTING

- A. Contractor is expected to thoroughly clean all machinery spaces, hoistways, car tops, pits and landing sill. These areas shall be kept free of oil, grease, dirt and debris.

- B. Adjust all equipment for optimal performance. This includes controllers, motors, drives, landing systems, door operating equipment, hoistway equipment, ride quality equipment, and safety equipment. The successful completion of these adjustments shall result in a high-quality project, providing smooth, quiet, safe and reliable operating elevator.
- C. Prior to final turnover, Contractor shall clean and paint the machine room floor, car top, pit equipment and pit floor.

29.14 HARBORS'S DOCUMENTS & INSTRUCTIONAL TRAINING

- A. Contractor shall submit to Harbors, two (2) complete sets of the following items. Documents shall be neatly organized, properly bound and labeled. In addition to hard copies, Contractor shall submit these documents on a removable storage device (thumb drive).
 - 1. Straight-line wiring diagrams of the newly installed equipment, including indices of individual components and related function for each elevator.
 - 2. Parts catalogs, ordering sheets and instructions for all replacement parts included in this specification.
 - 3. Provide four (4) sets of keys required for all operation and opening of all features and systems of the newly installed elevators.
 - 4. Provide any special lubrication requirements and/or lubricants to be used. This includes any cleaning products or methods to clean/maintain new components.
 - 5. Post-modernization decibel levels in the elevator cab and machine room when running at contract speed.
 - 6. Provide operating instructions for the elevators under emergency conditions, including maintenance and testing of Fire/Life Safety, Firefighter's Service and Recall operation.
 - 7. Provide further operating instructions on maintenance, adjusting, troubleshooting and diagnostic procedures. Provide any required external diagnostic or programming tool if the new control system does not have a built-in terminal. The tool or laptop shall contain all required software, passwords, codes or related access requirements. This shall allow any licensed Contractor to perform diagnostic and testing of the elevator, including 5-year full load testing, to OEM standards.

29.15 MATERIAL

- A. Stainless Steel Type 316 with standard tempers and hardness required for fabrication, strength and durability.
- B. Exposed metal in hoistways and car tops shall have all rust removed. Components shall be wire brushed, cleaned and applied with rust inhibitor, then painted with coat of industrial enamel paint.
- C. Other exposed metal components and assemblies of oil, grease, scale and other debris shall be cleaned and painted with one coat of industrial enamel paint.
- D. Machine room and pit floors shall be painted.

29.16 WARRANTY

- A. Manufacturer's Warranty: Written warranty, signed by manufacturer agreeing to repair, restore, or replace defective elevator work within specified warranty period.
 - 1. Warranty Period: Warranty Period shall be one (1) year starting from date of Project Acceptance. Project Acceptance is the State of Hawaii's and Harbors' acceptance of the entire project from the contractor after the work is completed, tested, and inspected in accordance with contract requirements.

29.17 ELEVATOR EQUIPMENT DESCRIPTION

- A. Type: Passenger
- B. Capacity: 1,200 lbs.
- C. Speed: 300 feet per minute (Code Data Plate).
Verify to match existing.
- D. Number of Landings: Ten (10) stops. Per Contract Drawings.
- E. Number of Openings: Ten (10) openings. Per Contract Drawings.
- F. Control: Simplex collective operation.
- G. Machine: Overhead geared traction utilizing existing machine beams.
- H. Roping: 1:1 Roping. Utilize existing machine structural support system.

- I. Power Supply: Per Contract Electrical Drawings. Conform to the requirements of the existing electrical system and electrical design requirements.

29.18 OPERATIONAL REQUIREMENTS

- A. All elevator systems shall be able to safely lower, stop within ¼-inch of each floor and hold up to a maximum of 125% of the rated capacity of the elevator.
- B. All elevators speed shall be maintained within (+/-) 3% of the contract speed at all times, under any load condition, measured in both directions of travel.
- C. All traction elevator systems shall provide smooth acceleration and deceleration with a 1/4-inch leveling accuracy at landings, under all load condition.
- D. Elevators are required to travel between two consecutive floors in 11.0 seconds, in both directions of travel. This is measured from the start of the door close at one floor to ¾ open at the next floor.
- E. New door operating systems shall open the elevator doors in 2.0 seconds. This is measured from the start of opening to fully open.
- F. New door operating systems shall close the elevator doors in 2.4 seconds. This is measured from the start of door close to fully closed.
- G. Door hold (dwell) times shall be held in the open position between 3.0 – 5.0 seconds in response to a car call registration, and between 4.0 – 7.0 seconds in response to a hall call registration.
- H. When a door detector (sensor) is interrupted/obstructed in the open position for a period longer than 20 seconds, a buzzer shall sound and the doors will close at slow speed to “nudge” the interruption/obstruction from the doorway and allow the elevator to be placed back into service.

29.19 NOISE & VIBRATION

- A. All elevator equipment, including supports and fastenings shall be mechanically and electrically isolated from the building structure and mainline power feeders to minimize noise and vibration transmitted to the elevator and occupied areas of the building.

- B. For all machine room equipment, provide sound isolation to eliminate vibration and structure-borne sound transmitted to the building. Provide isolation grommets and washers at hold-down bolts between any equipment and the building structure.
- C. Noise levels in running elevators shall not exceed 55 dBa and no more than 60 dBa in occupied building areas, including door operation and fan. Contractor shall provide the labor and material to eliminate machine room or hoistway noise from penetrating building occupied areas should noise levels exceed above requirements.

29.20 MACHINE ROOM EQUIPMENT

- A. All equipment shall be designed, engineered and installed in complete compliance with all local codes within existing machine room space. Contractor shall be responsible for all existing building conditions and will design the new modernized systems to operate within the existing building dimensions, structural supports and electrical systems. Any and all costs for redesign of, revisions to, building spaces and/or structure to accommodate Contractor's equipment will be the responsibility of the Contractor.
- B. Provide a new Permanent Magnet AC Gearless machine with overhead configuration. Provide support beams, blocking beams and supports as required. All related deflector sheaves and supporting structures shall also be included. Contractor shall also have a licensed, structural engineer verify all load factors, structural supports and machine beams relative to weight increases and load distribution.
- C. Emergency Brake
 - 1. Provide means to prevent ascending car over-speed and unintended car movement per Code.
 - 2. Mount emergency brake on suitable structural steel supports. Provide stamped approval by Professional Engineer verifying supports provided are adequate.
- D. Motor Drive Unit VVVF
 - 1. Provide a solid-state VVVF direct drive unit capable of varying torque on the motor during acceleration and deceleration.
 - 2. Drive shall be designed to limit current in-rush, prevent voltage feedback into building power network, and eliminate electrically generated noise and vibration.

3. Provide means to absorb regenerative power from overhauling braking condition and internal means to control and drive systems.
 4. Drive unit shall be engineered with adequate filtering to ensure harmonic noise and distortion is eliminated. Contractor shall be responsible to correct any problems caused by feedback or drive generated electrical interference into building's electrical system.
- E. Controller - Provide new microprocessor control system.
1. Provide a new cabinet type enclosure with ventilation, with hinged, removable doors.
 2. Mount all controller components to allow access from the front of the cabinet, and rear access is not required.
 3. Dispatching system shall be microprocessor based and have on-board diagnostic capability without the use of an external tool or device. If such a tool or device is required, Contractor will be required to provide this to the Harbors upon final acceptance of the project. In addition, if any passwords or codes are required to gain access into on-board system, Contractor shall provide those to the Harbors. A list of terms, settings, or parameters will be required in project closeout documentation.
 4. For continuing maintenance of the system, the system shall be able to deliver diagnostic and minor programming capability for maintenance, adjustment and trouble-shooting. The system must also include remote monitoring of the elevator systems. If there is a cost for monitoring, it shall be included in the Base Bid Modernization price or monthly Preventive Maintenance Monthly price.
 5. All printed copper circuitry or boards shall be coated with a tin lead compound. Include noise suppression devices and filters to provide protection on boards, power supplies and related hardware devices.
 6. Provide built-in line conditioners to allow for continued operation in the event of minor power glitches. In the event of a power failure or interruption, the system shall have the ability to restart properly when power is restored.
 7. Controller shall have built-in memory back-up in the event of a power loss.

8. Provide a test switch in the controller to allow independent operation without door functions for the purpose of testing or adjusting the elevator. During this operation, the elevator shall not respond to car or hall calls, and shall not affect group operation of the remaining elevators.
9. Ventilation must aid heat dissipation. If additional cooling or heat dissipation is required, Contractor shall provide those means to the controller.
10. Controller shall be permanently marked with Elevator number or symbol and have current, matching wiring diagrams for reference and trouble-shooting.
11. If the equipment is not in line of sight from the mainline disconnects, Contractor shall provide auxiliary disconnecting means.
12. Elevator speed, acceleration and deceleration shall be computer controlled.
13. Power supplies shall be UL rated and have short-circuit protection.
14. Controls shall be factory wired and shall be UL labeled copper wires and shall be neatly routed in bundles. Utilize proper terminal links and connections.
15. Any inputs or outputs from external devices shall be isolated.

F. Microprocessor Control Operation

1. Elevator(s) shall operate from two-button system within the elevator cab and each elevator lobby.
2. Upon registered demand, the direction of travel shall not be reversed until all car call registrations have been dispatched and hall calls ahead of the car in the same direction has been responded and answered.
3. Illumination of call buttons shall occur when a call has been registered and extinguish once the call is answered.
4. Provide fuzzy logic and intelligence to allow real-time dispatching of elevators to learn and adjust to current building traffic patterns. The elevator system shall adjust dispatching to provide balanced, efficient service to all landings in the building.

5. Provide load-weighing and feedback to dispatcher in advance, which will allow for proper call dispatching adjustments. An anti-nuisance feature shall be provided to cancel car calls when loading is not proportionate to call demand.
 6. Car stopping at each landing, regardless of load and direction of travel, shall stop the elevator within ¼-inch above or below the landing sill.
 7. Provide elevator system with Firefighter's control under Phase I and Phase II operation per Code. All provisions including fixtures, signage and features shall meet requirements set forth by the State of Hawaii and ASME A17.1. System shall recall the elevator to the designated or alternate landing in the event of a fire or emergency situation. Recall will be initiated by the Fire/Life Safety system as noted in the Related Work Section. Include all wiring, conduit and electrical hardware as required for complete installation and interface from hoistway or machine room connection points to each controller as required.
 8. Provide Independent and Inspection Service operation per Code.
 9. Provide means to interface building emergency stand-by power for sequential lowering. Coordinate all interface requirements with Harbors or Harbors's Contractor.
- G. Encoder: Provide a solid-state, optical, digital count mode encoder, which is mechanically coupled to the machine or governor.
- H. Emergency Power: Provide emergency power provisions in the control system. Coordinate automatic transfer signal (ATS) requirements for the new control system during shop drawing phase and show all power confirmation data, including but not limited to: horse power, mainline voltage, full load running current, full load accelerating current, regenerative power data, and manufacturer power tolerance requirements. During shop drawing submittal phase, Elevator Manufacturer shall work with Electrical Engineer to ensure the new elevator system does not exceed the limitations of the existing electrical system and emergency generator system.
- I. Governor: Provide new governor.

29.21 HOISTWAY EQUIPMENT

- A. Guide Rails: Reuse existing guide rails for both car and counterweight. Perform adjustments as necessary to achieve a plumb and rigid guideway. Guides rails shall safely support all forces exerted by the elevator system during normal and test operations. Clean and remove any debris from all rails, brackets, clips, flanges and fishplates of rust and paint with black rust inhibiting enamel.
- B. Buffers: Retain and refurbish existing oil buffers. Flush-out existing oil and replace with new oil. Completely clean and remove any/all rust to each buffer, including buffer stands and pit channels. Paint components with rust inhibiting enamel. Provide compression switches to prevent full-speed operation if buffers are not fully extended. Complete load testing and retag after modifications.
- C. Pit Ladder: Provide new ladder to meet current Code requirements for pit access. This may include a new retractable ladder or modifications for extension grips. Contractor shall comply with requirements ASME A17.1-2010 and of the Authority Having Jurisdiction (AHJ).
- D. Pit Stop Switch: Provide new pit stop switch and install per Code.
- E. Normal & Final Terminal Stopping Switches: Provide new per Code.
- F. Overhead Sheaves: Provide new overhead sheaves to accommodate the new machine. Paint with black machine enamel.
- G. Pit Mounted Sheaves/Guides: Provide new. Assemblies shall use rigid guides and/or pivots to keep sheave in proper vertical alignment with proper tension. Paint with machine enamel.
- H. Hoistway Wiring: Provide new hoistway wiring. Wiring shall be constructed of copper throughout. Wiring shall not be spliced, except at junction boxes or intermediate terminal blocks, control cabinets in the machine room, and at connection blocks within the elevator cab for fixtures, interlocks and other hardware. Provide 10% spare conductors with terminated at ends at car or hoistway connection points and the machine room. Include four (4) pairs of shielded communication wires between the cab and machine, and any additional wiring specified for CCTV or Security Access controls.
- I. Traveling Cable: Provide moisture-resistant, flame-retardant traveling cable with a minimum of 10% spares. Installation shall avoid any rubbing or chaffing of the cable against the car or hoistway components. Properly secure termination with cable support grips at cable ends to prevent pressure or movement of the cable which may affect terminal connections.

- J. Secondary Traveling Cable: Provide a separate traveling cable for the dedicated use of security camera and access control systems. Cable shall include coaxial cable and common spares other peripheral items. Installation shall avoid any rubbing or chaffing of the cable against the car or hoistway components. Properly secure termination with cable support grips at cable ends to prevent pressure or movement of the cable which may affect terminal connections.
- K. Conduit / Raceway: Provide new hoistway conduit and electrical ductwork to comply with NEC guidelines as required. Flexible conduit may be utilized as applicable, but shall not exceed 36" in length.
- L. Hoist & Governor Cables: Provide and install new traction steel cables with a minimum diameter of ½" per cable.
- M. Compensation: Provide new compensation with new guides, if required.
- N. Roller Guides: Provide new car and counterweight spring loaded roller guide assemblies.

29.22 HOISTWAY ENTRANCE & DOOR EQUIPMENT

- A. Entrance Frames: Retain existing entrance frames on all floors.
- B. Hoistway Door Panels: Provide new primed door panels constructed with internal ribs for all floors. Provide new gibs and galvanized steel mounting brackets and locate within sill groove during complete travel. Black enamel paint backside of door panels and stencil paint applicable floor number on each door.
- C. Sight Guards: Provide new sightguards painted to match the hoistway door panels.
- D. Painting of Entrance Frames, Hoistway Door Panels & Sightguards:
 - 1. Clean surface with solvent to The Society of Protective Coating Surface Preparation Standard SSPC – SP1.
 - 2. Prep corroded areas to SSPC – SP1 standard which is power tool cleaning to bare metal.
 - 3. Prep existing coating and substrate without corrosion to SSPC – SP 3 standard – power tool cleaning. Mechanically abrade surface to a 400 grit finish.
 - 4. Clean surface to SSPC – SP 1 standard again.

5. Mask off and protect surrounding area adjacent to elevator opening being painted.
 6. Prime bare metal with two-part self-etching primer. Primer to be applied to manufacturer's specification.
 7. Prime entire surface with a 4 to 1 two-part Epoxy primer. Primer will be applied to manufacturer's specification.
 8. Paint entire surface with a two-part Industrial Urethane top-coat. Coating will be applied electrostatically to manufacturer's specification.
- E. Astragals/Door Bumpers: Provide new at all landings.
 - F. Headers & Struts: Provide new galvanized header with minimum 3/16" gauge and new door bumpers to prevent door assembly from hitting struts on all floors. Protect with rust inhibiting black enamel paint.
 - G. Door Tracks: Provide new bar tracks on all landings.
 - H. Interlocks: Provide new interlocks on all landings.
 - I. Door Hangers: Provide new applied door hangers to integrate with the door panels.
 - J. Door Closers: Provide new Smart Torq spirator closing devices on all landings.
 - K. Dust Covers: Provide new galvanized covers to protect door hardware, tracks and interlocks.
 - L. Hoistway Unlocking Devices: Provide unlocking devices with escutcheon collars in door panels on all floors.
 - M. Sills & Sill Supports: Retain existing sills and sill supports.
 - N. Fascia: Provide new galvanized fascia where required by Code.

29.23 CAR & DOOR EQUIPMENT

- A. Frame: Retain and reuse existing, including safety plank, cross-head and uprights. Completely remove all rust, dirt and oil from components and repaint with rust inhibiting primer with enamel finish.
- B. Safeties: Retain and refurbish existing. Replace any worn parts with new and perform required tests per Code.

- C. Car Top Safety Railing: Provide new 42” high railing on the car top with intermediate rail, toe board and stationary posts as required by Code.
- D. Car Top Operation Station: Provide new car top operating station per Code.
- E. Platform: Refurbish existing. Completely remove all rust, dirt and oil from components and repaint underside with rust inhibiting primer with black enamel finish.
- F. Load Weighing: Provide new adjustable load weighing system designed to determine when full capacity is reached and it shall bypass hall calls when loaded to full capacity.
- G. Sills: Provide new aluminum sill.
- H. Toe Guard: Provide new toe guard per Code requirements.
- I. Header: Provide new galvanized car door header and protect with black enamel paint.
- J. Door Panels: Provide new satin stainless steel car door panel(s). Provide new gibs and galvanized steel mounting brackets and locate within sill groove for complete travel.
- K. Door Track: Provide new bar car door track.
- L. Door Hangers: Provide new door hangers, upthrusts/eccentrics and rollers to interface with track.
- M. Gate Switch: Provide new gate switch.
- N. Restrictors: Provide new restrictors per Code.

29.24 DOOR OPERATOR & RELATED DEVICES

- A. Operator: Provide new closed-loop, high-speed, heavy-duty door operator with a minimum opening speed of 2.5 feet per second. Door control shall be solid-state with fully adjustable door speed, force/torque and dwell times. Operation shall include closed-loop feedback which allows for door torque adjustments in varying wind conditions, while remaining in Code tolerances. Doors shall close smoothly and quietly under all conditions.
- B. Protection Device: Provide new Janus Panachrome+ infrared door protection device and meet all Code requirements.

- C. Nudging Operation: Provide feature in the event the door is obstructed in excess of preset 20 second time interval, a buzzer will sound, and the door will close at 50% normal speed with a maximum of 2.5 ft-lbf. Feature must comply with Code requirements for Firefighter's Operation.
- D. Differential Door Dwell Timers: Provide two adjustable profiles/timers to vary the time doors remain open in response to a car or hall call. Doors shall remain open for three to five (3.0-5.0) seconds in response to a car call and four to seven (4.0-7.0) seconds for a hall call.

29.25 CAR ENCLOSURE

- A. Shell: Provide new steel cab shell with extended walls to increase the overall cab height under the crosshead and maintain proper clearances for future equipment servicing.
- B. Canopy: Provide new canopy and include code required modifications for escape hatch. Paint with gray machine enamel.
- C. Exhaust Fan: Provide new, 2-speed high-capacity exhaust fan. Isolate from canopy with rubber pads for quiet operation.
- D. Fronts & Transom: Provide new cab fronts and transoms finished with satin stainless steel. Modify as necessary to allow for installation of new Car Operating Panel.
- E. Finishes: Include an allowance of \$30,000 for new finishes. Labor to install finishes shall be included in the Base Bid price for a standard product from the vendors listed below.
- F. Harbors shall have the right to verify and approve material cost via the Contractor's invoices from each supplier prior to approving payment.
 - 1. Interior Wall Panels: Provide new wall panels per Harbors' selection. Interiors manufactured by SnapCab, Forms+Surfaces, Travertine or approved equal will be accepted.
 - 2. Handrail: Provide new handrails per Harbors' selection.
 - 3. Cab Lighting: Provide new ceiling lighting per Harbors' selection. Emergency lighting transformer and fixture to be integral with normal lighting.
 - 4. Flooring: Provide new flooring. Refer to ARTICLE XXIII - RESILIENT FLOORING.

5. Base: Provide integrated base with Code compliant ventilation.
6. Protective Cab Pads: Provide ONE (1) set of canvas cab pads. Pads shall be provided for side and rear walls and front return(s) with Car Operating Panel cutout.
7. NOTE: Car Balancing: The elevator car weight shall not exceed an increase of more than 5% above the total weight of the existing car. Contractor will be required to carefully weigh all removed material and compare those to the weights of the new equipment to be added. Provide written confirmation and pictures of measuring tool with weights, showing evidence the new car weights meets this Code requirement. If the original car weight exceeds 5%, Contractor will be responsible for all ASME A17.1 code requirements, including all costs associated with structural calculations, modifications and confirmation with the AHJ.

29.26 SIGNAL FIXTURES

A. Car Operating Panel

1. Provide One (1) Main car operating panel, integrated into existing location. Secure panel with a minimum of three (3) hidden hinges and allows the entire panel length to swing open. Panel finish shall be satin stainless steel. Installation shall meet all applicable ADAAG requirements.
2. Illuminating, vandal-resistant, satin stainless steel pushbuttons shall be installed. Buttons shall be minimum 1-inch in diameter and raised a minimum of 1/8-inch.
3. Buttons and related signals shall be properly identified by Braille and Arabic designations, with a minimum of 5/8-inch numerals, standard alphabet character or standard symbol. Braille and Arabic items shall meet all applicable ADA requirements for size, location and installation.
4. Operating controls of the panel shall be mounted no higher than 48-inches above the car finished floor. Keyed emergency stop switch and alarm bell shall be located no lower than 35-inches above the car finished floor.
5. Provide a keyed stop switch with proper labeling of “RUN” and “STOP” with a red collar.
6. Provide a “CALL CANCEL” button per Code.

7. Provide an alarm button per Code in the event of an emergency condition.
8. Provide a lockable Firefighter's Service Cabinet with Fire Service Instructions engraved in the panel. The cabinet shall include all Code required key switches, call buttons, jewels and annunciators.
9. Provide a lockable Service Cabinet with concealed hinges, flush to the operating panel. Include the following operational items:
 - a. Light toggle switch
 - b. 2-Speed Fan toggle switch
 - c. Inspection toggle switch
 - d. Independent Service toggle switch.
 - e. Emergency Test Light button.
 - f. Duplex, 120-volt, GFCI convenience outlet
 - g. Security Override/Disable switch
10. Provide all required Code signage permanently engraved in operating panel. At a minimum, include Building Name, Elevator Number, Elevator Capacity, No Smoking and Permit location.
11. Provide a hands-free, integrated Emergency Communication, using push to talk ADAAG Code compliant device built into operating panel. Device shall include all audible and visual indicators and meet applicable ASME A17.1 requirements.
12. Provide floor lockout switches.
13. Car Position Indicator: Provide a new car position indicator with a minimum 2" character display.
14. Provide a Floor Annunciator with floor passing chimes/tones with a minimum 20 dBA. Provide Voice Annunciator including the following announcements:
 - a. Floor number and direction of travel.
 - b. Notice of doors closing during nudging operation.
 - c. Notice of car on independent service.

d. Notice of Firefighter's Service.

- B. Hall Pushbutton Stations: Provide flush mount hall pushbuttons where existing and provide all necessary coring. Faceplates shall be satin stainless steel for all landings. Faceplates shall be designed with sufficient length to cover existing wall cutouts, while meeting required button height of 42-inches above the finished floor. Buttons shall be vandal-resistant, match the finish of the faceplate, minimum of 1-inch diameter and raised a minimum of 1/8-inch.

Faceplates shall include "In Case of Fire" signage engraved in the upper section. Contractor shall design station to minimize any cutting and patching of the wall(s). If cutting and patching is required, Contractor shall coordinate this with Harbors.

Include Security Override/Disable switch in hall pushbutton faceplate at 1st landing.

- C. Firefighter's Service (Recall) Switch: Provide new Firefighter's Service Recall Phase I switch and faceplate, adjacent to elevator at the main egress landing. Faceplate shall include illumination indicators. Key box shall have Code required operating instructions and key sets.
- D. In-Car Lanterns: Provide dual in-car lantern for each elevator installed on the jamb furthest from the hall station. Faceplate shall be satin stainless steel with vandal-resistant lantern indicators. Visual signals shall be digital arrows signifying location of travel with a minimum of 2-inches by 2-inches. Include audible chimes/tones consisting of single and double tones for the up and down direction of travel respectively.
- E. Lobby Position Indicators: Provide new dial electronics which include but not limited to the electric motor retrofitted to operate the existing dial indicators on each floor from CJ Anderson & Company. Refurbish faceplate and remount floor markings so they are evenly spaced and clear coated via CJ Anderson & Company.
- F. Fire Alarm Speaker: Mount fire alarm speaker on the car top or within operating panel if space will allow. Install wiring from car top or operating panel to Life Safety Panel. Speakers will be provided by Fire Life Safety Contractor.
- G. Emergency Communication: Provide emergency communication failure indicator, audible alert and signage indicating a failure of the car emergency communication device. System shall provide communication for Lobby and Machine Room to elevator cab as required by ASME A17.1.

- H. Access: Provide new keyed-access switches at terminal landings. Include wall penetration and coring as necessary to installation. Any faceplates shall be finished with satin stainless steel.

29.27 SEISMIC DEVICES

- A. Provide design, devices and operation per governing Code.

29.28 PAYMENT - Payment for Modernize Electric Traction Elevators shall be made as described in Article X of these Specifications.

ARTICLE XXX - ONE YEAR MAINTENANCE SERVICE CONTRACT

30.1 CONTRACT TERM

The term of this Agreement shall be for one (1) year plus the period from the signing of this Agreement through the last day of the Interim Period Maintenance.

A. One (1) Year Warranty Maintenance:

Provide full maintenance services per this Agreement. This period will commence upon the completion of the Elevator Modernization and commences on the acceptance date as stated on the Final Acceptance and continue for one (1) year. Price escalations will be per contract specifications.

B. In the performance of services during the contract term, should the Contractor violate any of the provisions in this Agreement, the Harbors shall notify the Contractor of the deficiency or violation. Subject to paragraph 30.14, the Contractor shall be given thirty (30) days to correct the deficiencies or violations to the Harbors' satisfaction, and in the event the deficiencies or violations are not corrected within the thirty (30) day period, the Harbors has the right to terminate this Agreement pursuant to paragraph 30.14.

C. This Agreement shall NOT automatically renew upon the expiration of the contract term noted above. Upon expiration of the Contract Term, this Agreement shall continue a month-to-month basis and may be cancelled by either party upon thirty (30) days' written notice. Notice shall be sent by certified mail, return receipt requested to the address set forth in this Agreement or the address designated by written notice to the other party.

D. This Agreement shall not be transferred or assigned by either the Harbors or Contractor without prior written consent from the other. Any subcontractor work required by the Contractor shall receive prior written approval by the Harbors before work is initiated.

30.2 AGREEMENT PURPOSE AND INTENT

A. Contractor shall provide properly trained Elevator Technicians to perform pro-active preventive maintenance and repair for the equipment provided herein. This preventive maintenance program as required by the Original Equipment Manufacturer (OEM) shall be followed to facilitate the following:

1. Consistent, safe operation of the equipment.

2. Maximum reliable operational performance of the equipment.
3. Maximum beneficial usage of the equipment.
4. Maximum life cycle of the equipment.

In addition, all examinations, tests, cleaning, lubrication, adjustments, repairs and replacements performed by the Contractor under this Agreement, shall be performed in compliance with ASME A17.1 Elevator Safety Code, latest edition, adopted by the State of Hawaii, Authority Having Jurisdiction (AHJ), in effect at the time of Agreement Commencement date.

30.3 CONTRACTOR DUTIES AND SERVICES

- A. Contractor shall furnish all labor, supervisions, materials, tools, parts, equipment, lubricants, and cleaning supplies necessary to fulfill its duties and responsibilities described herein, referred to as "Services".
- B. Contractor shall use trained and qualified Elevator Mechanics who possess State of Hawaii Specialty Contractor's "C-16" license, and under their direct employment and supervision, to perform all Services herein. Contractor will ensure all apprentices are directly always supervised by a licensed Elevator Journeyman as required by the AHJ.
- C. Contractor shall maintain the Harbors' complete set of as-built, straight-line wiring diagrams with any modifications. The machine room set shall be laminated and hung on a wall mounted frame to provide ease of access during troubleshooting and maintenance procedures. If any changes or modifications are made by the Contractor, they shall be made in a detailed, neat and orderly manner. Copies of the Harbors' complete set and the changes shall be made and delivered to the Harbors for filing.
- D. Contractor shall provide and engage a written Maintenance Control Program, referred to as "MCP", to maintain the equipment described within compliance of all Code requirements. Contractor's MCP shall specify examinations, test, cleaning, lubrication and adjustments to components at regularly set intervals, as well as documented records of these items.
- E. The MCP specifically created or performed at the Building shall be the property of the Harbors and shall be always accessible and viewable on-site by the Harbors. Upon Harbors' request, Contractor shall provide a written report of scheduled maintenance tasks and historical reports of

completed tasks for each unit.

- F. Contractor shall abide by and comply with all applicable Federal, State and City and County of Honolulu laws, statutes, codes, ordinances, rules and regulations in the performance of the work.
- G. Contractor shall abide by Harbors' instructions, rules, policies, regulations and requirements for work at the premises and shall conduct its work to minimize any annoyance, interference, or disruptions to occupants.
- H. Contractor's service technician shall be required to check in and check out at each service visit. This process will ensure proper communication between Harbors and Contractor. This will also be the means to monitor and track mandatory service hours are being adhered to.
- I. Protection of Property and Persons
 - 1. Contractor shall be responsible for maintaining and supervising all safety precautions in connection with the work. Contractor shall take precautions and provide reasonable protection to prevent injury, damage or loss to:
 - a. Contractor's employees and sub-contractors.
 - b. Equipment and material in storage, on or off the site, under the care, custody or control of the Contractor or their sub-contractors.
 - c. The property, including but not limited to roofing, walls, ceilings, flooring, furnishings, and stairwells.
 - 2. Contractor shall be repair and/or replace all damaged items caused by Contractor's actions.
 - 3. Contractor shall advise all employees working on-site, including sub-contractors, that smoking is NOT allowed on-site. Smoking on the roof will void Harbors' roofing warranty and Contractor will be responsible for all costs associated with the violation of this requirement.
 - 4. In the event of an accident of any kind, Contractor shall provide Harbors with copies of all/any accident reports. Reports shall be provided immediately and at the same time they are forwarded or submitted to any other party.
 - 5. A responsible member of the Contractor shall be designated to

ensure all work is being performed safely and in strict accordance with all governing regulations.

30.4 CONTRACTOR’S WORK HOURS

- A. All preventive maintenance service provided under this Agreement shall be performed during regular working days and hours as set by the IUEC local. Contractor shall provide 24-hour, 7-day a week, unlimited emergency callback service.
- B. Contractor shall furnish a mechanic for a minimum of ***based on the table below***. The hours are based on a monthly four-week average. This time shall be expended entirely dedicated to performing preventive maintenance work, adjustments and housekeeping per the Contractor MCP. These hours are independent of time spent for callbacks, repairs or other billable work not covered in this Agreement.

ELEVATOR(S)	MINIMUM HOUR(S) PER MONTH
Elevator #1	1.0

30.5 CALLBACK SERVICE

A callback is defined as a request for service initiated by the Harbors when a unit becomes unavailable for beneficial use due to an equipment failure or malfunction. Callbacks are further defined as a minor adjustment to the equipment requiring no more than two (2) hours to complete, excluding travel time.

- A. Contractor shall provide unlimited emergency callback service during regular working days and hours as set forth by the IUEC local.
- B. Contractor shall provide emergency minor-adjustment callback service during overtime hours at no additional cost to Harbors for the following:
 - 1. Entrapments - this shall be given top priority in all cases.
 - 2. Safety or potential safety hazard(s) of the elevator system.
 - 3. Malfunctioning dispatch system or hall buttons not in service
- C. Response Time for Callbacks: All elevator callbacks shall be responded to as follows:
 - 1. Passenger Entrapments: no longer than thirty (30) minutes during regular time hours and sixty (60) minutes during overtime hours.

2. Non-emergency callbacks: no longer than sixty (60) minutes during regular time hours and ninety (90) minutes during overtime hours.
 3. Time shall be measured from the time the call is registered with the Contractor and shall terminate when the mechanic arrives on premises.
- D. After four (4) incidences over a 6-month period where the Contractor does not meet these response times, Harbors may reduce the monthly Agreement amount by 50% for the subsequent six (6) month billing period. Harbors shall have the right to terminate this Agreement if Contractor fails to meet the response time requirements more than six (6) times within any 6-month period.

30.6 PREVENTIVE MAINTENANCE

- A. Contractor shall comply with service intervals, routine inspections and preventive maintenance guidelines per their submitted MCP. At minimum, the Contractor's MCP shall meet following guidelines. Contractor shall regularly and systematically examine, maintain, clean, lubricate and adjust the equipment described herein, and when conditions warrant, unless specifically excluded from coverage, repair or replace the following:

Traction Elevators:

1. Machines, bearings, drive sheave, drive sheave shaft bearings, brake arms, brake coils, contacts, linings, motor commutators, field coils, brushes, brush holders, riggings and bearings.
2. Controller components, relays, contacts, solid-state components, transformers, timing devices and other microprocessor monitoring equipment used in the system.
3. Governor components, governor sheaves and shaft assemblies, tension sheaves, bearings, contacts, tripping devices, setting devices, secondary or tail sheaves.
4. Door operators, door motors, operating arms, linkages, door protection devices.
5. Hoistway door components, including but not limited to interlocks, hangers, tracks, door gibs, door closures, door rollers, upthrusts.
6. Hoistway limit, slow-down and leveling switches.

7. Roller guide or slide guide components.
8. Pit and buffer equipment.
9. Safety mechanisms and load-weighing switches.
10. Hoist cables, traction belts, and governor cables.
11. Traveling cables, compensation cables, hoistway wiring and control wiring.
12. Signal fixture components and related lighting/lamp/indicator devices.
13. Other components not expressly excluded from coverage.

30.7 PARTS AVAILABILITY & REPLACEMENT

- A. Contractor shall maintain a local supply of commonly required replacement parts for the aforementioned equipment.
- B. If the elevator is out of service due to equipment related issue(s) and Contractor needs to procure part(s) from an off-island source, Contractor will be responsible to cover all expedited shipping costs to minimize out of service time.
- C. Contractor shall provide and use only direct replacement parts as installed by the Original Equipment Manufacturer (OEM) for replacement or repair, or parts of equal or superior quality, rating and function.
- D. Repaired parts shall be restored to “as new” condition.
- E. Contractor shall be responsible to remove and dispose of all replaced components and related equipment from the project site, in compliance with all environmental requirements.

30.8 MAINTENANCE & REPAIR RECORDS

- A. Contractor shall provide Harbors with on-line access to building specific records of maintenance procedures completed, callback history and data, and customer useful data to ensure contract terms are being adhered to.
- B. Maintenance service records shall be specific to days and time of service, maintenance procedures completed and future planned maintenance procedures.

- C. Callback records shall be specific by unit, including dates, initial time call was placed, mechanic's arrival on property, summary of resolution, and time elevator was placed back into service.
- D. In addition, the Contractor's on-line record system shall provide automatic updates and notifications to Harbors or Harbors' designated representative, for each instance of maintenance service or callback.

30.9 TESTING

- A. Contractor shall perform monthly testing of the Firefighter's Service operation in compliance with applicable Code.
- B. Contractor shall perform periodic testing of the equipment to comply with applicable Code.
- C. Contractor shall perform annual testing of the emergency stand-by power operation for the equipment if applicable.
- D. All testing as required by the local AHJ for continued safe operation of the equipment will be performed under this Agreement at no additional cost to Harbors. Contractor will be responsible for scheduling the required tests with the local AHJ. Harbors will be given written notice by Contractor no less than five (5) business days prior to the test date.
- E. Contractor's failure to submit requests for tests required by the local AHJ and applicable Code within thirty (30) calendar days of required time constraint shall subject Contractor to a \$500 per calendar day penalty on each unit, for each infraction, beginning on the 30th day subsequent to the required date. Penalty shall continue until Harbors receives written notification from the Contractor of completion of the required test. Should a delay exceed ninety (90) days, Harbors shall have the right to terminate this Agreement.

30.10 REPAIRS AND REPLACEMENTS

- A. Contractor shall coordinate and obtain prior approval from Harbors before removing a unit from service to perform repairs or replacements. Any equipment shutdown exceeding forty-eight (48) hours shall have the maintenance billing suspended until the equipment is returned to normal operating service. The Contractor shall credit the Harbors' monthly billing for the affected month in an amount equal to the dollar value lost by the shutdown.
- B. Subject to paragraph 1.10, B, overtime repairs and replacements are not

covered under this Agreement, and therefore shall be pre-approved by Harbors in writing before work commences. The billing rate for this work shall be the difference between the Contractor's regular time and overtime billing rates.

30.11 OBSOLESCENCE

Obsolescence is defined as a replacement part not being available for purchase by the Contractor. NO obsolescence shall be claimed on any part of the elevator system in the first Fifteen (15) years of this Agreement. After the Fifteen (15) year period has ended, should a part be deemed obsolete, the Contractor shall provide written documentation that the part is not available and that all sources have been exhausted to locate the part. If the replacement part is not available, the Harbors shall pay the cost for the replacement part. This replacement part shall not be proprietary, and the part must be an available type and model for future replacement. Contractor shall provide labor it would have taken to replace the obsolete component if it were available at no additional cost. If any adjustments or engineering is required to make a new component work with the system, a proposal for additional labor shall be provided to the Harbors for approval. The replacement part, now installed as part of the repaired system, shall be included in the Agreement at no extra cost to the Harbors.

30.12 PERFORMANCE REQUIREMENTS

The elevator covered by this Agreement shall operate within the minimum performance requirements as set forth below:

Floor to Floor Time	Stopping Accuracy	Door Open
8.0 seconds	+/- 1/4"	3.0 seconds

- A. Door closing time shall comply with the minimum time allowed by Code.
- B. Floor to floor time begins when the door starts to close on a floor and ends when the door is 3/4 of the way open at the next successive landing in either direction.
- C. Door opening time begins with the doors start to open and stops when the doors are 1-inch from fully open position.
- D. Door closing force shall comply with Code.
- E. Contract speed shall not vary more than three percent (3%) under any load condition.

30.13 EXCLUSIONS:

Contractor shall not be responsible for the following:

- A. Repairs or replacements resulting from “Acts of God”, or any other cause beyond the Contractor’s control except ordinary wear.
- B. Repairs and/or replacements due to negligence and/or misuse of the equipment by anyone other than Contractor, its employees, affiliates, subcontractors, agents, or anyone authorized by Contractor to act on their behalf.
- C. Repairs or replacements to the following items: hoistway walls, machine room floors and walls, pit floor, car enclosures, car floor coverings, hoistway entrance frames, hoistway door panels, hoistway sills, cover plates for signal fixtures and operating stations, lamps for car and machine room illumination, electrical feeders and fuses to control panels, main and auxiliary disconnects or fuses, all smoke and heat detectors, and cleaning of car interior and exposed areas of the car and hoistway sills.
- D. Installation of new attachments or perform tests as may be recommended or directed by insurance companies, federal, state or municipal governmental authorities subsequent to the Commencement Date of this Agreement, unless compensated for such test, installation or services.
- E. Damage to building structure as a result of the performance of safety tests, provided that damage is not due to Contractor’s negligence.

30.14 HARBORS’ RIGHTS AND RESPONSIBILITIES

- A. Harbors shall allow the Contractor adequate shutdown time to perform preventive maintenance work and service, including scheduled repairs and replacements to the unit.
- B. Harbors agrees to provide ready and safe access to any area of the building where equipment is located, and shall keep machine rooms, hoistways, and pit areas free from water-intrusion and stored materials.
- C. Harbors may, at any given time, inspect the Contractor’s work to evaluate whether the work included herein is being performed in accordance with this Agreement. Any deficiencies discovered by the Harbors shall be brought to the Contractor’s attention, and the Contractor shall be given thirty (30) days to correct the deficiencies. If the Contractor fails to correct the required work efficiently and diligently within the terms of this Agreement, the Harbors may, with thirty (30) days’ written notice to the Contractor, terminate this Agreement. In the event of a conflict in

discrepancies, the Harbors may retain a qualified Elevator Consultant to mediate any dispute.

- D. Should Harbors decide to modernize the equipment at any time during the term of this Agreement, Contractor agrees to allow Harbors to terminate this Agreement with thirty (30) days written notice to Contractor. For the purpose of this Agreement, modernization shall be defined as a complete replacement of the equipment's control system.
- E. Harbors shall be responsible for all State and municipal elevator inspection fees.
- F. Pictorial evidence shall be provided to demonstrate why any of the above-mentioned items are excluded from this Agreement. Without the proper pictorial evidence, Harbors shall have the right to dispute the invoice and have it credited.

30.15 PAYMENT - Payment for One Year Maintenance Service Contract shall be made as described in Article X of these Specifications.

ARTICLE XXXI - MATERIAL SUBMITTALS AND SHOP DRAWINGS

31.1 GENERAL - This Article consists of a list of materials and shop drawings required for this project. As soon as possible after award of the contract, the Contractor shall submit for approval, the required material submittals and shop drawings to the Construction Engineer at 79 S. Nimitz Highway, Honolulu, Hawaii 96813. The Material Submittals and Shop Drawings submitted by the Contractor shall include all items listed below. Material Submittals and Shop Drawings not submitted as a complete package will not be reviewed by the Harbors and will be sent back as a non-submittal. The Contractor shall promptly order its materials after approval of its submittals.

31.2 MATERIAL SUBMITTALS - The Contractor shall submit for review and approval digital copies of manufacturer's specifications for the following items and items identified in the individual Articles:

- A. Proof of valid TWIC and MARSEC (if required) credential cards for all Contractor and Sub- Contractor workers.
- B. Lead Paint Control Measures:
 - 1. Work Plan
 - 2. Final Clearance Report
- C. Joint Sealants:
 - 1. Product Data
 - 2. Shop Drawings
 - 3. Guaranty
- D. Blanket Insulation:
 - 1. Product Data
- E. Steel Doors and Frames:
 - 1. Product Data
 - 2. Shop Drawings
 - 3. Door Schedule

- F. Door Hardware:
 - 1. Product Data
 - 2. Schedule
 - 3. Keying Schedule
 - 4. Warranty

- G. Louvers:
 - 1. Product Data
 - 2. Shop Drawings
 - 3. Samples

- H. Gypsum Board:
 - 1. Product Data

- I. Resilient Flooring:
 - 1. Product Data
 - 2. Shop Drawings
 - 3. Samples
 - 4. Product Schedule
 - 5. Maintenance Data
 - 6. Certificate
 - 7. Warranty

- J. Painting:
 - 1. Schedule of Finishes
 - 2. Color Samples
 - 3. Schedule of Operations

4. Certifications
5. Manufacturer's Product Data Sheets
6. Manufacturer's Material Safety Data Sheets
7. Receipt of Delivery
8. Warrantee

K. Mechanical Work:

1. Manufacturer's Published Data
2. Shop Drawings
3. Design Data
4. Guaranty and Certificate
5. Maintenance Service Contract
6. Operations and Maintenance Manual
7. As-Built Drawings
8. Fire Alarm System Documentation

L. Fire Sprinkler System Work:

1. Shop Drawings.
2. Record Drawings.

M. Fire Alarm System:

1. Manufacturer's Catalog Data.
2. Shop Drawings.
3. Design Data.
4. Qualifications of fire alarm system installer and technician.

5. Guaranty.
 6. Certificate.
 7. Written notification of all test and test results.
 8. Operations and Maintenance Manual.
 9. As-Built Drawings.
- N. Electrical Work:
1. Product Data.
- O. Modernize Electric Traction Elevators Work:
1. Product Data.
 2. Shop Drawings.
 3. Pre-modernization decibel levels in the elevator cab and machine room when running at contract speed without the exhaust fan running.
 4. Product brochures, samples, catalogs, cut sheets, photos, color charts or other pertinent material.
 5. State of Hawaii licenses for the installation Mechanic(s) that will be performing on-site work.
 6. Maintenance Manuals.
 7. Inspection and Acceptance Certificates and Operating Permits

31.3 PAYMENT - Payment for Material Submittals and Shop Drawings shall not be made separately but shall be considered incidental to the items described in Article X of these Specifications.

ARTICLE XXXII - PROJECT PHOTOGRAPHS



Photo 1: Top of existing elevator cab.

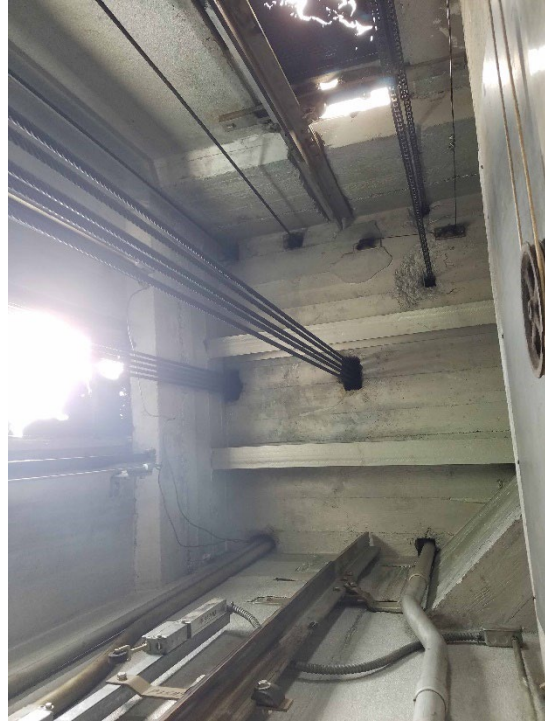


Photo 2: Top of existing hoistway.



Photo 3: Existing elevator rail.

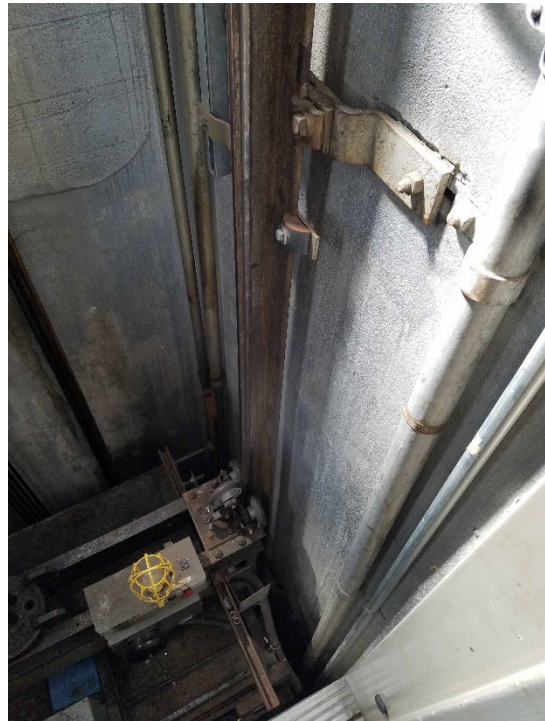


Photo 4: Existing elevator rail.



Photo 5: Existing elevator rail.



Photo 6: Existing hoistway.

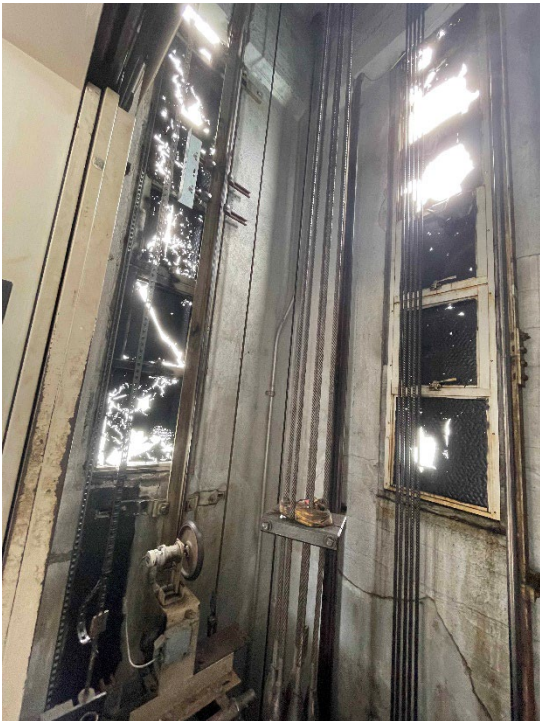


Photo 7: Existing hoistway.



Photo 8: Existing hoistway.

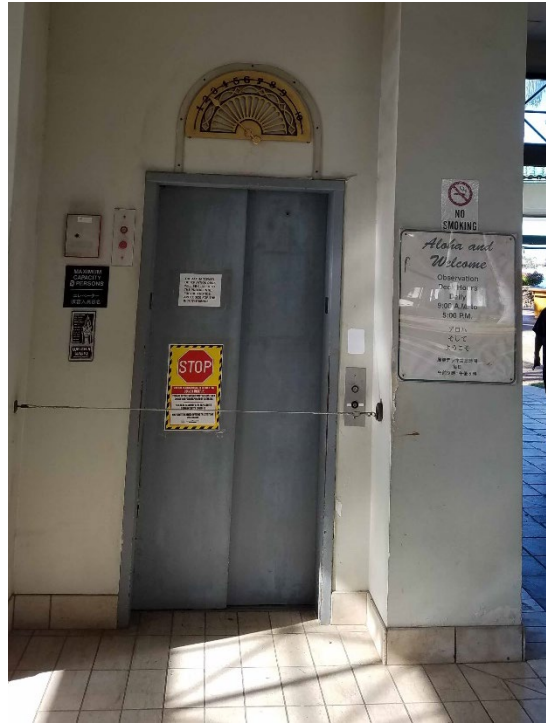


Photo 9: Existing ground floor call station. Photo 10: Existing ground floor doors.



Photo 11: Interior of existing cab.

Photo 12: Interior of existing cab.



Photo 13: Existing cab jamb.



Photo 14: Existing panel in cab.



Photo 15: Ladder to elevator equipment room.

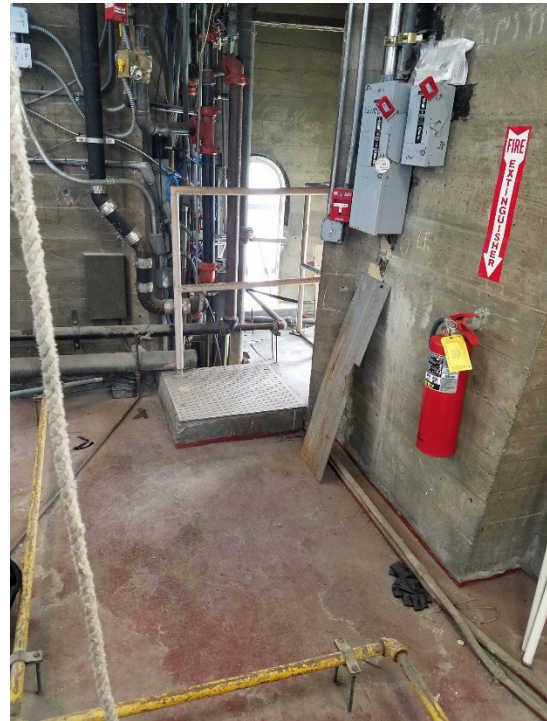


Photo 16: Landing at top ladder in elevator equipment room.

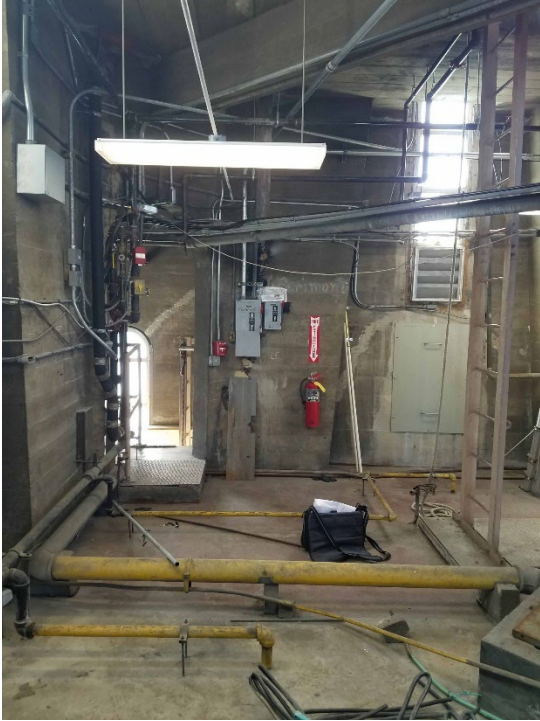


Photo 17: Existing elevator equipment room.



Photo 18: Existing elevator equipment room.



Photo 19: Existing elevator equipment room.



Photo 20: Existing elevator equipment room.

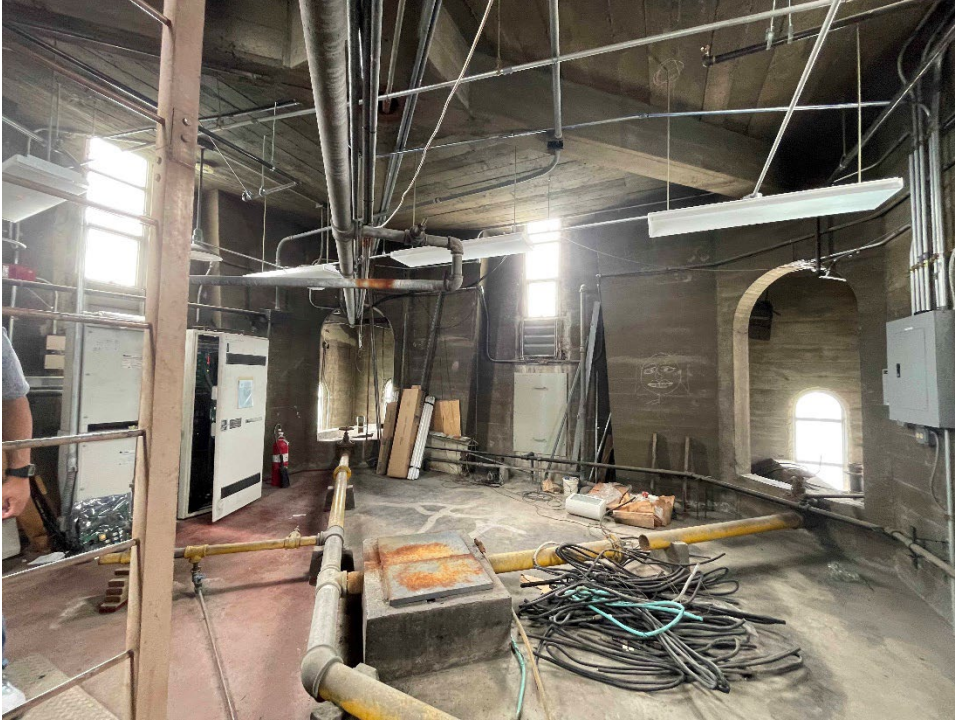


Photo 20: Existing elevator equipment room.



Photo 21: Existing elevator equipment room.



Photo 22: Existing elevator equipment room.



Photo 23: Diamond plate cover over access hole to floor below.



Photo 24: Existing diamond plate cover.

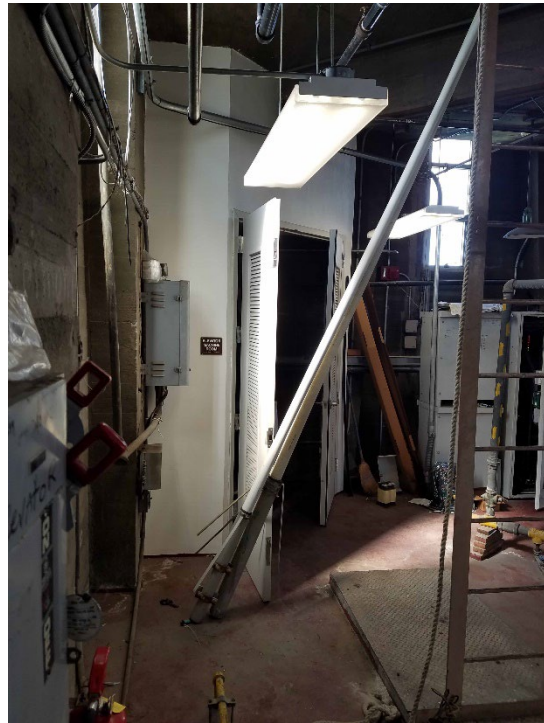


Photo 25: Existing elevator equipment closet.



Photo 26: Existing motor above hoistway.



Photo 27: Existing motor above hoistway.



Photo 28: Existing motor above hoistway.



Photo 29: Existing motor above hoistway.



Photo 30: Existing motor above hoistway.



Photo 31: Existing elevator controller.

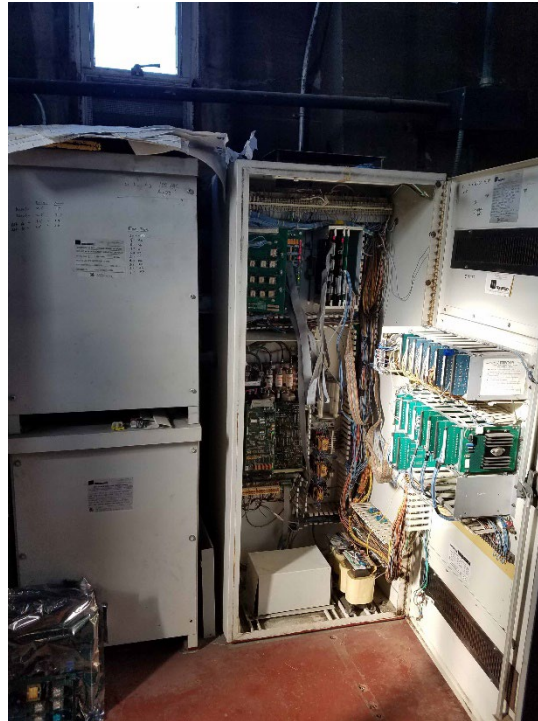


Photo 32: Existing elevator controller.

Requirements of Chapter 104, HRS Wages and Hours of Employees on Public Works Law

Chapter 104, HRS, applies to every public works construction project over \$2,000, regardless of the method of procurement or financing (purchase order, voucher, bid, contract, lease arrangement, warranty, SPRB).

Rate of Wages for Laborers and Mechanics

- Minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules, shall be paid to the various classes of laborers and mechanics working on the job site. [§104-2(a), (b), Hawaii Revised Statutes (HRS)]
- If the Director of Labor determines that prevailing wages have increased during the performance of a public works contract, the rate of pay of laborers and mechanics shall be raised accordingly. [§104-2(a) and (b), HRS; §12-22-3(d) Hawaii Administrative Rules (HAR)]

Overtime

- Laborers and mechanics working on a Saturday, Sunday, or a legal holiday of the State or more than eight hours a day on any other day shall be paid overtime compensation at not less than one and one-half times the basic hourly rate plus the cost of fringe benefits for all hours worked. If the Director of Labor determines that a prevailing wage is defined by a collective bargaining agreement, the overtime compensation shall be at the rates set by the applicable collective bargaining agreement [§§104-1, 104-2(c), HRS; §12-22-4.1, HAR]

Weekly Pay

- Laborers and mechanics employed on the job site shall be paid their full wages at least once a week, without deduction or rebate, except for legal deductions, within five working days after the cutoff date. [§104-2(d), HRS]

Posting of Wage Rate Schedules

- Wage rate schedules with the notes for prevailing wages and special overtime rates, shall be posted by the contractor in a prominent and easily accessible place at the job site. A copy of the entire wage rate schedule shall be given to each laborer and mechanic employed under the contract, except when the employee is covered by a collective bargaining agreement. [§104-2(d), HRS]

Withholding of Accrued Payments

- If necessary, the contracting agency may withhold accrued payments to the contractor to pay to laborers and mechanics employed by the contractor or subcontractor on the job site any difference between the wages required by the public works contract or specifications and the wages received. [§104-2(e), HRS]

Certified Weekly Payrolls and Payroll Records

- A certified copy of all payrolls shall be submitted weekly to the contracting agency. [§104-3(a), HRS; §12-22-10, HAR]
- The contractor is responsible for the submission of certified copies of the payrolls of all subcontractors. The certification shall affirm that the payrolls are correct and complete, that the wage rates listed are not less than the applicable rates contained in the applicable wage rate schedule, and that the classifications for each laborer or mechanic conform with the work the laborer or mechanic performed. [§104-3(a), HRS; §12-22-10, HAR]
- Payroll records shall be maintained by the contractor and subcontractors for three years after completion of construction. The records shall contain: [§104-3(b), HRS; §12-22-10, HAR]
 - the name and home address of each employee
 - the last four digits of social security number
 - a copy of the apprentice's registration with DLIR
 - the employee's correct classification
 - rate of pay (basic hourly rate + fringe benefits)
 - itemized list of fringe benefits paid
 - daily and weekly hours worked
 - weekly straight time and overtime earnings
 - amount and type of deductions
 - total net wages paid
 - date of payment
- Records shall be made available for examination by the contracting agency, the Department of Labor and Industrial Relations (DLIR), or any of its authorized representatives, who may also interview employees during working hours on the job. [§§104-3(c), 104-22(a), HRS; §12-22-10, HAR]

Termination of Work on Failure to Pay Wages

- If the contracting agency finds that any laborer or mechanic employed on the job site by the contractor or any subcontractor has not been paid prevailing wages or overtime, the contracting agency may, by written notice to the contractor, terminate the contractor's or subcontractor's right to proceed with the work or with the part of the work in which the required wages or overtime compensation have not been paid. The contracting agency may complete this work by contract or otherwise, and the contractor or contractor's sureties shall be liable to the contracting agency for any excess costs incurred. [§104-4, HRS]

Apprentices

- Apprentice wage rates apply to contractors who are a party to a bona fide apprenticeship program which has been registered with the DLIR. In order to be paid apprentice rates, apprentices must be parties to an agreement either registered with or recognized as a USDOL nationally approved apprenticeship program by the DLIR, Workforce Development Division, (808) 586-8877, and the apprentice must be individually registered by name with the DLIR. [§12-22-6(1) and (2), HAR]
- The number of apprentices on any public work in relation to the number of journeyworkers in the same craft classification as the apprentices employed by the same employer on the same public work may not exceed the ratio allowed under the apprenticeship standards registered with or recognized by the DLIR. A registered or recognized apprentice receiving the journeyworker rate will not be considered a journeyworker for the purpose of meeting the ratio requirement. [§12-22-6(3), HAR]

Enforcement

- To ensure compliance with the law, DLIR and the contracting agency will conduct investigations of contractors and subcontractors. If a contractor or subcontractor violates the law, the penalties are: [§104-24, HRS]
 - First Violation Equal to 25% of back wages found due or \$250 per offense up to \$2,500, whichever is greater.
 - Second Violation Equal to amount of back wages found due or \$500 for each offense up to \$5,000, whichever is greater.
 - Third Violation Equal to two times the amount of back wages found due or \$1,000 for each offense up to \$10,000, whichever is greater; and
Suspension from doing any new work on any public work of a governmental contracting agency for three years.
- A violation would be deemed a second violation if it occurs within two years of the **first notification of violation**, and a third violation if it occurs within three years of **the second notification of violation**. [§104-24, HRS; §12-22-25(b), HAR]
- **Suspension:** For a first or second violation, the department shall immediately suspend a contractor who fails to pay wages or penalties until all wages and penalties are paid in full. For a third violation, the department shall penalize and suspend the contractor as described above, **except that if the contractor continues to violate the law, then the department shall immediately suspend the contractor for a mandatory three years. The contractor shall remain suspended until all wages and penalties are paid in full.** [§§104-24, 104-25, HRS]
- **Suspension:** Any contractor who fails to make payroll records accessible or provide requested information within 10 days, or fails to keep or falsifies any required record, shall be assessed a penalty including suspension as provided in Section 104-22(b) and 104-25(a)(3), HRS. [§104-3(c), HRS; §12-22-26, HAR]
- If any contractor interferes with or delays any investigation, the contracting agency shall withhold further payments until the delay has ceased. Interference or delay includes failure to provide requested records or information within ten days, failure to allow employees to be interviewed during working hours on the job, and falsification of payroll records. The department shall assess a penalty of \$10,000 per project, and \$1,000 per day thereafter, for interference or delay. [§104-22(b), HRS; §12-22-26, HAR]
- Failure by the contracting agency to include in the provisions of the contract or specifications the requirements of Chapter 104, HRS, relating to coverage and the payment of prevailing wages and overtime, is not a defense of the contractor or subcontractor for noncompliance with the requirements of this chapter. [§104-2(f), HRS]

For additional information, visit the department's website at <http://labor.hawaii.gov/wsd> or contact any of the following DLIR offices:



Oahu (Wage Standards Division) (808) 586-8777
Hawaii Island (808) 974-6464
Maui and Kauai (808) 243-5322

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HONOLULU HARBOR,

PROPOSAL

PROPOSAL TO THE STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS

PROJECT: REPAIR ELEVATOR AT ALOHA TOWER
HONOLULU HARBOR,
OAHU, HAWAII

PROJECT NO: S10842R

COMPLETION TIME: All work shall be completed within FOUR
HUNDRED (400) CALENDAR DAYS from
the date indicated in the Notice to Proceed from
the Department.

LIQUIDATED DAMAGES: TWO HUNDRED TWENTY-FIVE DOLLARS
(\$225.00) for each and every calendar day
which the Contractor has delayed the
completion of this project.

DESIGN PROJECT MANAGER: MR. BRANDEN SUMIDA
DEPARTMENT OF TRANSPORTATION
HARBORS
HALE AWA MOKU
79 S. NIMITZ HIGHWAY
HONOLULU, HAWAII 96813
PHONE: (808) 587-1873
FAX: (808) 587-1864
EMAIL: branden.sumida@hawaii.gov

ELECTRONIC SUBMITTAL: **Bidders shall submit and upload the
complete proposal to HiePRO prior to the
bid opening date and time. Any additional
support documents explicitly designated as
confidential and/or proprietary shall be
uploaded as a separate file to HiePRO.
Bidders shall refer to SPECIAL
PROVISIONS 2.8 PREPARATION AND
DELIVERY OF BID for complete details.
FAILURE TO UPLOAD THE COMPLETE
PROPOSAL TO HiePRO SHALL BE
GROUNDS FOR REJECTION OF THE
BID.**

Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Sir:

The undersigned Bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e. an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.

The undersigned Bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 103D-323, Hawaii Revised Statutes.
2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.
3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.

4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.
5. Agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.
6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The Bidder acknowledges receipt of and certifies that it has completely examined the following listed items: the Hawaii Department of Transportation, Air and Water Transportation Facilities Division General Provisions for Construction Projects dated 2016, the Notice to Bidders, the Special Provisions, if any, the Technical Provisions, the Proposal, the Contract and Bond Forms, and the Project Plans.

In accordance with Section 103D-323, Hawaii Revised Statutes, this proposal is accompanied with a bid security in the amount of 5% of the total amount bid, in the form checked below. (Check applicable bid security submitted with bid.)

Surety Bid Bond (Use standard form),

Cash,

Cashier's Check,

Certified Check, or

(Fill in other acceptable security.)

The undersigned Bidder acknowledges receipt of any addendum issued by the Department by recording in the space below the date of receipt.

Addendum No. 1 _____

Addendum No. 3 _____

Addendum No. 2 _____

Addendum No. 4 _____

In accordance with Section 103D-302, Hawaii Revised Statutes, the undersigned as Bidder, has listed the name of each person or firm, who will be engaged by the Bidder on the project as a Subcontractor or Joint Contractor and the nature of work to be done by each. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Subcontractor or Joint Contractor. For each listed firm, the Bidder declares the respective firm is a Subcontractor or Joint Contractor and is subject to evaluation as a Subcontractor or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

<u>Name of Subcontractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

<u>Name of Joint Contractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____

("None" or if left blank indicates no Subcontractor or Joint Contractor; if more space is needed, attach additional sheets.)

The undersigned hereby certifies that the bid prices contained in the attached proposal schedule have been carefully checked and are submitted as correct and final.

This declaration is made with the understanding that the undersigned is subject to the penalty of perjury under the laws of the United States and is in violation of the Hawaii Penal Code, Section 710-1063, unsworn falsification to authorities, of the Hawaii Revised Statutes, for knowingly rendering a false declaration.

Bidder (Company Name)

By _____
Authorized Signature

Print Name and Title

Business Address

Business Telephone

Date

Contact Person (If different from above)

Phone: _____ Email: _____

NOTE:

If Bidder is a CORPORATION, the legal name of the corporation shall be set forth above, the corporate seal affixed, together with the signature(s) of the officer(s) authorized to sign contracts for the corporation. Please attach to this page current (not more than six months old) evidence of the authority of the officer(s) to sign for the corporation.

If Bidder is a PARTNERSHIP, the true name of the partnership shall be set forth above, with the signature(s) of the general partner(s). Please attach to this page current (not more than six months old) evidence of the authority of the partner authorized to sign for the partnership.

If Bidder is an INDIVIDUAL, the bidder's signature shall be placed above.

If signature is by an agent, other than an officer of a corporation or a partner of a partnership, a POWER OF ATTORNEY must be on file with the Department before opening bids or submitted with the bid. Otherwise, the Department may reject the bid as irregular and unauthorized.

PREFERENCES

Bidders agree that preferences shall be taken into consideration to determine the low bidder in accordance with said Sections and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive of any preferences.

A. HAWAII PRODUCTS PREFERENCE

In accordance with ACT 174, SLH 2022, effective June 27, 2022, Hawaii Products Preference shall not apply to solicitations for public works construction. Therefore, the Hawaii Products Preference shall not apply to this project.

B. APPRENTICESHIP PROGRAMS PREFERENCE

In accordance with ACT 17, SLH 2009 – Apprenticeship Program, a 5% bid adjustment for bidders that are parties to apprenticeship agreements pursuant to Hawaii Revised Statutes (HRS) Section 103-55.6 may be applied to the bidder's price for evaluation purposes.

Any bidder seeking this preference must be a party to an apprenticeship agreement registered with the Department of Labor and Industrial Relations at the time the offer is made for each apprenticeable trade the bidder will employ to construct the public works projects for which the offer is being made.

The bidder is responsible for complying with all submission requirements for registration of its apprenticeship program before requesting the preference.

() Yes, I wish to be considered for the Apprenticeship Programs Preference. I have included Certification Form(s) 1 with my bid.

C. RECYCLED PRODUCT PREFERENCE

Recycled product preference shall not apply to this proposal.

REPAIR ELEVATOR AT ALOHA TOWER

HONOLULU HARBOR, OAHU, HAWAII

JOB S10842R

PROPOSAL SCHEDULE

Item No.	Item Description	Quantity (a)	Unit	Unit Price (b)	Amount Bid (a x b)
1	Mobilization (Not to exceed 6% sum of all Items, excluding this Item)	L.S.	L.S.	L.S.	\$ _____
2	Lead Paint Control Measures	L.S.	L.S.	L.S.	\$ _____
3	Selective Demolition	L.S.	L.S.	L.S.	\$ _____
4	Mechanical Work	L.S.	L.S.	L.S.	\$ _____
5	Fire Sprinkler System Work	L.S.	L.S.	L.S.	\$ _____
6	Fire Alarm System Work	L.S.	L.S.	L.S.	\$ _____
7	Electrical Work	L.S.	L.S.	L.S.	\$ _____
8	Modernize Electric Traction Elevator	L.S.	L.S.	L.S.	\$ _____
9	One Year Maintenance Service Contract	L.S.	L.S.	L.S.	\$ _____
		TOTAL AMOUNT FOR COMPARISON OF BIDS \$ _____			

NOTES:

1. Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Do not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO.

FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE

GROUND FOR REJECTION OF THE BID.

If there is a conflict between the specification document and the HIePRO solicitation, the specifications shall govern and control, unless otherwise specified.

2. Bid shall include all Federal, State, County and other applicable taxes and fees.
3. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.
4. Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.
5. If a discrepancy occurs between unit bid price and the bid price, the unit bid price shall govern.
6. If the lowest TOTAL AMOUNT FOR COMPARISON OF BIDS exceeds the funds available for this project, the State reserves the right to negotiate with the lowest responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes, as amended, to reduce the scope of work and award a contract.
7. Submission of Proposal is a warranty that the bidder has made an examination of the project site and is fully aware of all conditions to be encountered in performing the work and the requirements of the plans and specifications.
8. No additional compensation will be paid by the State for losses, including overhead and profit, resulting from reduced scope of work.
9. Contract time shall remain the same whether or not the overall scope of work is decreased.

SURETY BID BOND

Bond No. _____

KNOW TO ALL BY THESE PRESENTS:

That we, _____
(full name or legal title of offerer)

as Offeror, hereinafter called the Principal, and

(name of bonding company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety in the State of Hawaii, are held and firmly bound unto

(State/county entity)

as Owner, hereinafter called Owner, in the penal sum of

(required amount of bid security)

Dollars(\$ _____), lawful money of the United States of America, for the payment of which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS:

The Principal has submitted an offer for

(project by number and brief description)

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the alternate, accept the offer of the Principal and the Principal shall enter into a contract with the Owner in accordance with the terms of such offer, and give such bond or bonds as may be specified in the solicitation or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof as specified in the solicitation then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed this _____ day of _____

Name of Principal (Offeror) (Seal)

Signature

Title

Name of Surety (Seal)

Signature

Title

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HONOLULU, HAWAII

SAMPLE FORMS

Contents:

Sample Contract
Performance Bond (Surety)
Performance Bond
Labor and Material Payment Bond (Surety)
Labor and Material Payment Bond
Chapter 104, HRS Compliance Certificate
Certification of Compliance for Employment of State Residents, Act 192, SLH 2011

CONTRACT

THIS AGREEMENT, made this day of _____, by and between the STATE OF HAWAII, by its Director of Transportation, hereinafter referred to as "STATE", and «CONTRACTOR», «STATE_OF_INCORPORATION», whose business/post office address is «ADDRESS», hereinafter referred to as CONTRACTOR";

WITNESSETH: That for and in consideration of the payments hereinafter mentioned, the CONTRACTOR hereby covenants and agrees with the STATE to complete in place, furnish and pay for all labor and materials necessary for "«PROJECT_NAME_AND_NO»", or such a part thereof as shall be required by the STATE, the total amount of which labor, material and construction shall be computed at the unit and/or lump sum prices set forth in the attached proposal schedule and shall be the sum of «BASIC»----DOLLARS (\$«BASIC_NUMERIC») as follows:

TOTAL AMOUNT FOR COMPARISON OF BIDS.....\$«BASIC_NUMERIC»

which sum shall be provided from State funds, all in accordance with the specifications, the special provisions, if any, the notice to bidders, the instructions to bidders, the proposal and plans for «PROJECT_NO_ONLY», and any supplements thereto, on file in the office of the Director of Transportation. These documents, together with all alterations, amendments, and additions thereto and deductions therefrom, are attached hereto or incorporated herein by reference and made a part of this contract.

The CONTRACTOR hereby covenants and agrees to complete such construction within «WORKING_DAYS» from the date indicated in the Notice to Proceed from the State subject, however, to such extensions as may be provided for in writing under the specifications.

For and in consideration of the covenants, undertakings and agreements of the CONTRACTOR herein set forth and upon the full and faithful performance thereof by the CONTRACTOR, the STATE hereby agrees to pay the CONTRACTOR the sum of «BASIC»---DOLLARS (\$«BASIC_NUMERIC») in lawful money, but not more than such part of the same as is actually earned according to the STATE's determination of the actual quantities of work performed and materials furnished by the CONTRACTOR at the unit or lump sum prices set forth in the attached proposal schedule. Such payment, including any extras, shall be made, subject to such additions or deductions hereto or hereafter made in the manner and at the time prescribed in the specifications and this contract.

An additional sum of «EXTRAS»-----DOLLARS (\$«EXTRA_NUMERIC») is hereby provided for extra work.

All words used herein in the singular shall extend to and include the plural. All words used in the plural shall extend to and include the singular. The use of any gender shall extend to and include all genders.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed the day and year first above written.

STATE OF HAWAII

Director of Transportation

«CONTRACTOR»

(Seal)

Signature

Print name

Print Title

Date

PERFORMANCE BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligee, in the amount of _____

_____ DOLLARS (\$ _____), to which payment Principal and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the above-bound Principal has signed a Contract with Obligee on
_____, for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Oblige to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Oblige in satisfaction of the surety's performance obligation on this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

***ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC**

PERFORMANCE BOND

KNOW TO ALL BY THESE PRESENTS:

That we, _____
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____ (State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount

_____ DOLLARS \$ _____),
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;**
- Share Certificate** unconditionally assigned to or made payable at sight to
Description: _____;
- Certificate of Deposit**, No. _____, dated _____ issued
by _____ drawn on _____ a bank, savings
institution or credit union insured by the Federal Deposit Insurance Corporation or the
National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Cashier's Check** No. _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;
- Teller's Check** No. _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;
- Treasurer's Check** No. _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;
- Official Check** No. _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;
- Certified Check** No. _____, dated _____
accepted by a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligeo for the following Project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE,

The Condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligeo, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligeo, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligeo, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this _____ day of _____, _____.

(Seal) _____

Name of Contractor

Signature*

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

LABOR AND MATERIAL PAYMENT BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligee, in the amount of _____

_____ Dollars (\$ _____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above-bound Principal has signed Contract with the Obligee on _____ for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

***ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC**

LABOR AND MATERIAL PAYMENT BOND

KNOW TO ALL BY THESE PRESENTS:

That we, _____
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto _____
(State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount
_____ DOLLARS (\$ _____)
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;
- Share Certificate unconditionally assigned to or made payable at sight to _____
Description: _____
- Certificate of Deposit, No. _____, dated _____ issued by _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Cashier's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Teller's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Treasurer's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Official Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Certified Check No. _____, dated _____ accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligee for the following Project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payments of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond..

Signed this _____ day of _____, _____.

(Seal) _____

Name of Contractor

Signature*

Title

ALL SIGNATURES MUST BE ACKNOWLEDGED BY A NOTARY PUBLIC

CHAPTER 104, HRS COMPLIANCE CERTIFICATE

The undersigned bidder does hereby certify to the following:

1. Individuals engaged in the performance of the contract on the job site shall be paid:
 - A. Not less than the wages that the director of labor and industrial relations shall have determined to be prevailing for corresponding classes of laborers and mechanics employed on public works projects; and
 - B. Overtime compensation at one and one-half times the basic hourly rate plus fringe benefits for hours worked on Saturday, Sunday, or a legal holiday of the State or in excess of eight hours on any other day.
2. All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety shall be fully complied with.

DATED at Honolulu, Hawaii, this _____ day of _____, 20__.

«CONTRACTOR»
Name of Corporation, Partnership, or Individual

Signature and Title of Signer

Notary Seal
NOTARY ACKNOWLEDGEMENT

Subscribed and sworn before me this
_____ day of _____
Notary signature _____
Notary public, State of _____
My Commission Expires: _____

Notary Seal
NOTARY CERTIFICATION

Doc. Date: _____ #Pages: _____
Notary Name: _____ Circuit
Doc. Description: _____

Notary signature _____
Date _____

PROVISIONS TO BE INCLUDED IN CONSTRUCTION PROCUREMENT SOLICITATIONS

1. Definitions for terms used in HRS Chapter 103B as amended by Act 192, SLH 2011:
 - a. "Contract" means contracts for construction under 103D, HRS.
 - b. "Contractor" has the same meaning as in Section 103D-104, HRS, provided that "contractor" includes a subcontractor where applicable.
 - c. "Construction" has the same meaning as in Section 103D-104, HRS.
 - d. "General Contractor" means any person having a construction contract with a governmental body.
 - e. "Procurement Officer" has the same meaning as in Section 103D-104, HRS.
 - f. "Resident" means a person who is physically present in the State of Hawai'i at the time the person claims to have established the person's domicile in the State of Hawai'i and shows the person's intent is to make Hawai'i the person's primary residence.
 - g. "Shortage trade" means a construction trade in which there is a shortage of Hawai'i residents qualified to work in the trade as determined by the Department of Labor and Industrial Relations.

2. HRS Chapter 103B as amended by Act 192, SLH 2011--Employment of State Residents Requirements:
 - a. A Contractor awarded a contract shall ensure that Hawai'i residents comprise not less than 80% of the workforce employed to perform the contract work on the project. The 80% requirement shall be determined by dividing the total number of hours worked on the contract by Hawai'i residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

- b. Prior to award of a contract, an Offeror/Bidder may withdraw an offer/bid without penalty if the Offeror/Bidder finds that it is unable to comply with HRS Chapter 103B as amended by Act 192, SLH 2011.
- c. Prior to starting any construction work, the Contractor shall submit the subcontract dollar amount for each of its Subcontractors.
- d. The requirements of this section shall apply to any subcontract of \$50,000 or more in connection with the Contractor; that is, such Subcontractors must also ensure that Hawai'i residents comprise not less than 80% of the Subcontractor's workforce used to perform the subcontract.
- e. The Contractor and any Subcontractor whose subcontract is \$50,000 or more shall comply with the requirements of HRS Chapter 103B as amended by Act 192, SLH 2011.
 - 1) Certification of compliance shall be made in writing under oath by an officer of the General Contractor and applicable Subcontractors and submitted with the final payment request.
 - 2) The certification of compliance shall be made under oath by an officer of the company by completing a "Certification of Compliance for Employment of State Residents" form and executing the Certificate before a licensed notary public.
 - 3) In addition to the certification of compliance as indicated above, the Contractor and Subcontractors shall maintain records such as certified payrolls for laborers and mechanics who performed work at the site and time sheets for all other employees who performed work on the project. These records shall include the names, addresses and number of hours worked on the project by all employees of the Contractor and Subcontractor who performed work on the project to validate compliance with HRS Chapter 103B as amended by Act 192, SLH 2011. The Contractor and Subcontractors shall retain these records and provide access to the State for a minimum period of four (4) years after the final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the records has been started before the expiration of the four-year period, the Contractor and Subcontractors shall retain the records until completion of the action and resolution of all issues that arise from it, or until the end of the four-year period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any Subcontractor.

- f. A General Contractor or applicable Subcontractor who fails to comply with this section shall be subject to any of the following sanctions:
- 1) With respect to the General Contractor, withholding of payment on the contract until the Contractor or its Subcontractor complies with HRS Chapter 103B as amended by Act 192, SLH 2011.
 - 2) Proceedings for debarment or suspension of the Contractor or Subcontractor under Hawai'i Revised Statutes §103D-702.
3. Conflict with Federal Law: This section shall not apply if the application of this section is in conflict with any federal law, or if the application of this section will disqualify the State from receiving Federal funds or aid.

**CERTIFICATION OF COMPLIANCE
FOR
EMPLOYMENT OF STATE RESIDENTS
HRS CHAPTER 103B, AS AMENDED BY ACT 192, SLH 2011**

Project Title: _____

Agency Project No: _____

Contract No.: _____

As required by Hawai'i Revised Statutes Chapter 103B, as amended by Act 192, Session Laws of Hawaii 2011—Employment of State Residents on Construction Procurement Contracts, I hereby certify under oath, that I am an officer of _____ and

(Name of Contractor or Subcontractor Company)

for the Project Contract indicated above, _____ was in

(Name of Contractor or Subcontractor Company)

compliance with HRS Chapter 103B, as amended by Act 192, SLH 2011, by employing a workforce of which not less than eighty percent are Hawai'i residents, as calculated according to the formula in the solicitation, to perform this Contract.

I am an officer of the **Contractor** for this contract.

I am an officer of a **Subcontractor** for this contract.

CORPORATE SEAL

(Name of Company)

(Signature)

(Print Name)

(Print Title)

Subscribed and sworn to me before this
____ day of _____, 2011.

Doc. Date: _____ # of Pages _____ 1st Circuit

Notary Name: _____

Doc. Description: _____

Notary Public, 1st Circuit, State of Hawai'i
My commission expires: _____

Notary Signature

Date

NOTARY CERTIFICATION