CONTRACT DOCUMENTS

FOR

KALIHI VALLEY DISTRICT PARK
GYMNASIUM ROOF IMPROVEMENTS

TAX MAP KEY: 1-3-24:2

FOR THE

DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

HONOLULU, HAWAII

RFB-DDC-2071008

PROJECT NUMBER: 27-P-04

DATE: September 30, 2026

PREPARED BY:

RMA ARCHITECTS, INC
1150 S. KING STREET, SUITE 800
HONOLULU, HAWAII 96814

ARCHITECT'S CERTIFICATION




Kylan Kaneshiro

Digitally signed by Kylan Kaneshiro
DN: C=US, E=kylank@rmaia-architects.com, O=RMA Architects, CN=Kylan Kaneshiro

Signature

04/30/2028
Expiration Date of the License

This work was prepared by me or
under my supervision

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**RFB-DDC-2071008**

NOTICE TO OFFERORS

COMPETITIVE SEALED BIDS (must be hardcopy) shall be received no later than 2:00 p.m. HST, December 8, 2026, in the Office of the Division of Purchasing, Department of Budget and Fiscal Services, City and County of Honolulu, City Hall, Room 115, 530 South King Street, Honolulu, Hawaii 96813 for:

KALIHI VALLEY DISTRICT PARK GYMNASIUM ROOF IMPROVEMENTS

JOB NO. 27-P-04

Unless otherwise stated in the solicitation, competitive sealed bids shall be read aloud at the public bid opening held shortly after the deadline for offers, as amended.

Offerors shall be licensed in accordance with Chapter 444, HRS, relating to the licensing of Contractors.

Pursuant to Section 3-122-16.05 of the Hawaii Administrative Rules, a pre-bid conference shall be held for construction or design-build projects with a total estimated contract value of $500,000.00 or more. A pre-bid conference will be held at 1911 Kamehameha IV Road, Honolulu, Hawai‘i 96816 on November 18, 2026 at 10:00 a.m. All potential interested offerors, subcontractors, and union representatives are invited to attend.

Requests for clarification regarding this bid solicitation shall be directed to Rosario Sambueno of the Division of Purchasing by email to bfspurchasing@honolulu.gov. The CITY will accept requests for substitution submitted electronically to bfspurchasing@honolulu.gov. All requests shall be received no later than November 30, 2026. Requests received after this date may not be given consideration.

Following are modifications to the General Instructions to Offerors dated 02/09/2017:

- Delete Item (2) of Section 2.19(b), Notification of Addenda in its entirety.
- Delete subsection (a) of Section 8.4 in its entirety and replace with the following:

  “(a) Notarization

  Signatures appearing on bond forms (if applicable) must be notarized by a notary public.”

- Add new Section 3.3 as follows:

  “3.3 Hawaii Bidder/Offeror Preference.

  The Hawaii Bidder/Offeror preference shall be applicable to this solicitation, for evaluation purposes only. Bidders/Offerors that wish to qualify for the five percent (5%) discount preference shall submit a completed Hawaii Bidder/Offeror Preference Certification form with its bid/offer. The five percent (5%) discount shall be applied to the Bidder’s/Offeror’s bid/offer price.

THIS IS A CITY AND COUNTY OF HONOLULU SOLICITATION. Bidders/Offerors shall not use any other Hawaii Bidder/Offeror Certification form except the form provided in the solicitation. Hawaii Bidder/Offeror Preference Certifications submitted for previous or other solicitations shall not be accepted.

The preference shall only apply if the total bid or offer price is less than $10,000,000.00. The preference shall only apply when at least one (1) qualified Bidder/Offeror competes against at least one (1) Bidder/Offeror that does not qualify for the preference. The preference shall not be applied if all bidders/offerors are Hawaii Bidders/Offerors.

Upon the City's written request, the Bidder/Offeror shall provide sufficient documentation to the City to demonstrate full compliance with this preference. The documentation must be provided within the time stated in the request.

Award shall be made at the Bidder's/Offeror's bid/offer price and not at the reduced evaluated price. During the contract period, failure to maintain the Hawaii Bidder/Offeror qualifications shall cause a reduction of price equal to the value of the preference applied and may constitute cause for debarment pursuant to Hawaii Revised Statutes §103D-702."

– This space left intentionally blank. –

## SCHEDULE AND SIGNIFICANT DATES

| MILESTONE | DATE |
|---|---|
| Pre-Bid Conference | November 18, 2026 |
| Requests for Clarification/Substitution due date | November 30, 2026 |
| Last Day for Issuance of Addenda | December 3, 2026 |
| Bid Opening Date | December 8, 2026 |

PAULA A. YOUNGLING
Purchasing Administrator
City and County of Honolulu

# CITY AND COUNTY OF HONOLULU

HAWAII BIDDER/OFFEROR
PREFERENCE CERTIFICATION FORM
(AS DEFINED IN HAWAII REVISED STATUTES §103D-1001)

I, _____, _____ of
(Name of Authorized Person on behalf of the Bidder/Offeror) (Position Title)

_____ (the "Hawaii Bidder/Offeror"), certify the following
(Hawaii Bidder's/Offeror's Legal Business Name)

under penalty of perjury that:

1. The Hawaii Bidder/Offeror holds a valid commercial place of business located in the State of Hawaii that has been staffed by the Hawaii Bidder/Offeror or an employee of the Hawaii Bidder/Offeror for not less than two (2) consecutive years immediately preceding the time and date set for the opening of bids or receipt of proposals; and

2. The bid or proposal in response to Solicitation No. RFB-DDC-2071008 is submitted under the name under which the Hawaii Bidder/Offeror is authorized to do business in the State of Hawaii; and

3. Not less than fifty-one percent (51%) of the total direct labor hours required for performance of the contract will be performed in the State of Hawaii; and

4. The Hawaii Bidder/Offeror will maintain these qualifications throughout contract performance; and

5. If the Hawaii Bidder/Offeror is a joint venture, the Hawaii Bidder/Offeror is composed entirely of parties meeting the requirements of paragraphs 1, 2, 3, and 4 above.

I hereby certify under penalty of perjury that the above statement is true. Any changes in eligibility shall be reported to the Officer-in-Charge or the contact person identified in the solicitation. I agree to maintain the above qualifications throughout contract performance. I acknowledge that failure to maintain the above qualifications triggers a reduction of price equal to the value of the preference applied and may be cause for debarment of the Hawaii Bidder/Offeror pursuant to Hawaii Revised Statutes §103D-702.

_____ _____
(Signature) (Date)

# GENERAL INSTRUCTIONS TO OFFERORS

CITY AND COUNTY OF HONOLULU

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## CHAPTER 1.0: GENERAL

1.1 Introduction.

These General Instructions to Offerors ("Instructions") state the City's policies relating to Request for Competitive Sealed Bids (RFB), Request for Competitive Sealed Proposals (RFP), and Request for Quotation (RFQ) solicitations.

Before submitting an offer, the Offeror shall be responsible for reading and examining the solicitation documents, these Instructions and all applicable requirements by law. Submission of an offer shall be deemed verification of such reading and examination. No Offeror shall in any way be relieved of any obligation with respect to its offer or the contract due to its failure or neglect to, familiarize itself with, and understand the work requirements, the Solicitation Documents, or existing conditions. No claim for additional compensation to the Offeror shall be allowed based on lack of knowledge or misunderstanding.

1.2 Application.

Any solicitation referencing these General instructions is subject to the Hawaii Revised Statutes ("HRS") §103D and the Hawaii Administrative Rules ("HAR") Title 3. In the case of inconsistencies, the HRS or HAR shall govern over the solicitation's provisions. Provisions from the HRS and HAR are presented for convenience only and may not be complete. Should the solicitation's provisions conflict with these General Instructions, the solicitation's provisions shall govern. Unless otherwise specified, these instructions are not intended to be incorporated into awarded contracts.

1.3 Definitions.

The terms used in this General Instructions to Offerors shall have the same meanings as defined in the City's General Terms and Conditions.

## CHAPTER 2.0: SOLICITATION

2.1 Order of Precedence.

Whenever separate Scope of Work, City-provided Offer pages, Special Provisions, Exhibits, requirements, specifications or plans are referred to or attached hereto, they shall be considered a part of this solicitation document as if contained herein. Should any of the scope of work, City-provided offer pages special provisions, requirements, specifications or plans conflict with these Instructions to Offerors, they shall govern. The most recent addenda shall govern over all other previously issued addenda and other solicitation documents.

2.2 Attachments.

In the Vendor Self Service (VSS) eProcurement system, all attachments are incorporated and by reference made a part of the solicitation.

2.3 City's Estimates.

Any estimate provided by the City is for the convenience of the Offeror only and the City does not represent or warrant its accuracy. An Offeror should conduct its own review and analysis.

2.4 Pre-bid or Pre-proposal Conference.

Pre-bid or pre-proposal conference (pre-offer conference), if held, shall be announced in the solicitation document, or in an addendum. Unless specified otherwise in the solicitation, pre-offer conferences shall be non-mandatory. Nothing stated at the pre-offer conference shall change the solicitation unless a change is made by written addendum.

2.5 Examination of Site.

When applicable, the Offeror shall examine carefully the site of the proposed work before submitting an offer. The submission of an offer shall be considered as a warranty that the Offeror has made such examination and is satisfied with the conditions to be encountered in performing the work.

(a) Surface and subsurface conditions.

Where subsurface conditions are known to the City in respect to foundation or other design, the Offeror may inspect the records of the City and examine any sample that may be available. Where such information is shown in the plans, said information represents only the statement by the City as to the character of material which has been actually encountered by the City and is included only for the convenience of the Offeror. The City makes no representations as to the conditions which will actually be encountered by the Offeror.

Any subsurface information or hydrographic survey data furnished are for the Offeror's convenience only. The information and data furnished are the product of the Officer-in-Charge's interpretation of the facts gathered in investigations made at the specific locations indicated to aid in the design of the project, and the City assumes no responsibility whatsoever in respect to the sufficiency or accuracy of borings or of the log of test borings or other preliminary investigations, or of the interpretation thereof, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work. In addition, no assurance is given that conditions found at the time of the

subsurface explorations, will be the conditions that prevail at the time of construction. The Offeror shall be solely responsible for all assumptions, deductions, or conclusions the Offeror may make or derive from the subsurface information or data furnished.

Making information concerning subsurface conditions available to Offerors is not to be construed in any way as a waiver of the Offeror's responsibility to examine the solicitation document and site. The Offeror must satisfy itself through its own investigations as to conditions to be encountered.

(b) Utilities, underground.

All underground water, gas, oil, telephone, electric, storm drain, sewer, and other pipes or conduits, shown on the plans, are only approximate in their locations. The Offeror shall make a personal investigation and inspection of the records and drawings possessed by owners of the utilities. The Offeror shall make satisfactory arrangements with the owners of the utilities for the relocation, maintenance and protection of existing utilities.

(c) Materials and equipment.

The City does not assume any responsibility for the availability of any materials or equipment required under this contract. Unless otherwise specified in the solicitation, the Offeror shall be considered as having taken into account when submitting an offer, the availability of materials or equipment required under the contract, except as provided for in applicable sections of the City's general conditions.

2.6 Price Items.

(a) Unless otherwise specified in the solicitation, prices offered shall be based on f.o.b. place of destination and shall include all applicable taxes, freight, delivery, handling and related charges. In the Vendor Self Service (VSS) eProcurement system, when a "Contract Amount" is requested, the Offeror shall enter the line item's lump sum price for the specified goods, services, or construction.

(b) Unless otherwise specified in the solicitation document, Offerors must provide a price for all items listed in the solicitation.

(c) When additive/deductive alternates are provided for in the solicitation, Offerors should enter a price for each and every item listed setting forth the amount to be added to or deducted from the Offeror's total basic price should such additive/deductive alternate be incorporated into the contract. Failure to enter a price for each and every item may result in the Offeror's offer not being considered for award, provided that if award is based on

the item or items on which offers have been submitted, the Offeror's offer may be considered for award.

(d) In case of discrepancy between prices written in words and those written in figures, the price written in words shall govern. Regarding pricing submitted in the Vendor Self Service (VSS) eProcurement system, the price submitted in the system shall govern. Notwithstanding the above, a unit price shall govern over an extended price.

(e) Offers in which prices are unbalanced, which contain omissions, erasures, alterations, or additions not called for, or irregularities of any kind shall be cause for rejection of an offer.

(f) Any illegible or otherwise unrecognizable price shall be cause for rejection of an offer.

2.7 Applicable Taxes.

Unless otherwise specified in the solicitation, the Offeror shall include in its unit price and be responsible for paying all taxes, which shall be applicable to the goods, services, or construction or the furnishing and sale thereof. Offerors are directed to contact the Department of Taxation of the State of Hawaii for assistance regarding the applicability of taxes.

2.8 Wages, Hours and Working Conditions.

(a) Services projects

When the offer is in excess of $25,000 for Services projects and a certification form is made a part of the solicitation, the form shall be completed, signed by the Offeror, and submitted with the Offeror's offer. Failure to submit the required certification may be grounds for disqualification of the Offeror's offer.

The certification form shall be used to certify that, if awarded the contract, the Offeror will comply with HRS §103-55, relating to Wages, hours and working conditions of employees of Contractor supplying services.

The certification form further certifies that the services to be performed will be performed under the following conditions:

(1) Wages. The services to be rendered shall be performed by employees paid at wages or salaries not less than the wages paid to public officers and employees for similar work.
(2) Compliance with Labor Laws. Contractor shall be responsible for and comply with all applicable labor laws of the Federal and State governments, including worker's compensation, unemployment compensation, payment of wages and safety standards.

(b) Construction projects

Offerors are advised of the applicability of HRS §104, "Wages and Hours of Employees on Public Works," projects and the City's applicable General Terms & Conditions, unless otherwise stated in the solicitation. Offerors shall incorporate compliance with all the provisions of HRS §104 and the City's applicable General Terms and Conditions into their offer.

(c) Vendor Self Service (VSS) eProcurement System

By submitting a bid in VSS, you are hereby accepting and acknowledging your compliance with the requirements of Section 2.8 and are not required to submit the certification form.

2.9 Insurance and Indemnification.

Offeror shall include in its price all costs to provide insurance and comply with the indemnification provisions as specified in the solicitation. Insurance and indemnification shall be required for all construction projects.

2.10 Performance and Payment Bonds.

Offeror shall include in its price, all costs to meet the bond requirements of a project.

(a) Goods or Services projects

Contract performance and payment bonds shall only be required for Goods or Services projects when specified in the solicitation.

(b) Construction projects

Contract performance and payment bonds shall be required for all Construction projects greater than $50,000.00 and shall be one hundred percent of the contract amount.

2.11 Bid Security.

When required, Offerors shall provide, at no cost to the City, an offer security. If an offer security is required and an Offeror fails to accompany its offer with an offer security, the offer shall be deemed non-responsive, except as provided in HAR §3-122-223 (d). For solicitations posted on the Vendor Self Services (VSS) eProcurement system, bid security, when required, shall be attached to the offerors electronic bid. The original bid bond shall be provided to the project buyer within five working days from the notification of intent to award. If the offeror fails to comply with this requirement, the offer may be rejected as non-responsive.

(a) Goods or Services. A bid security shall only be required when specified in the solicitation.

(b) Construction. A bid security shall NOT be required for Construction projects procured under HRS 103D-305 (RFQ solicitations). Bid security shall be required for all Construction projects procured under HRS 103D-302 and HRS 103D-303 that are ≥$25,000.00.

(c) Bid Security Amount. Bid security amount shall be equal to at least five percent of the Offeror's total bid amount.

(d) An acceptable bid security shall be limited to:
  (1) Surety bond in the form attached to the solicitation and underwritten by a company licensed to issue bonds in this State. Failure to utilize the City's surety bond forms shall not relieve the Offeror from liability or responsibility if it is discovered that the form utilized is not compliant with the HAR.
  (2) Legal tender; 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, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, and payable at sight or unconditionally assigned to the Director of The Department of Budget and Fiscal Services, City and County of Honolulu.
    i) These instruments may be utilized only to a maximum of $250,000.00.
    ii) If the required security amount totals over $250,000.00, more than one instrument not exceeding $250,000.00 each and issued by different financial institutions shall be accepted.

2.12 Brand Names, Model, Make or Method.

Where the solicitation document specifies one or more manufacturer's brand names or makes of materials, devices, equipment or system; it is indicating a quality, style, appearance, or performance, or method of construction. The Offeror shall base its offer on one of the specified brands, makes, or method, or on an alternate brand, make, or method which has expressly been found to be equal or better by the City in the solicitation or by written addendum to the solicitation.

If any item, make and model or part number listed in the solicitation is discontinued or made obsolete by the manufacturer, it is the offerors responsibility to provide the specified make and model number or offer an equal substitution for the item. Offeror shall follow the procedures set forth in 2.18 "Request for Substitution."

2.13 Supplemental Requirements for Construction Projects.

(a) Estimated Quantities

Unless otherwise specified, all quantities appearing in solicitation document for construction projects are approximate and are prepared for the comparison of offers only. The City does not, expressly or by implication, warrant that the actual quantities will correspond therewith. Offeror shall include in its prices offered, the entire cost of the performance of the contract, and it is understood and agreed that there is included in each lump sum or unit priced item, the entire cost of any and all items incidental to the performance of the work covered by such lump sum or unit priced item. When an Offeror is in doubt as to the proper item to which the anticipated cost of any item is to be allocated, the Offeror shall request clarification from the City, or shall include such cost in the lump sum or unit price offer for the item deemed most appropriate. Failure of the Offeror to request clarification shall bind the Offeror to complete such work at the prices submitted.

(1) Unit priced items: For unit priced items, payment to the Contractor will be made only for the actual quantities of work performed and accepted or of materials furnished and accepted in accordance with the solicitation document and subject to applicable sections of the City's General Terms and Conditions.

(2) Lump sum items: The quantities in any item for a lump sum offer item are approximate only and payment will be made only for the item in place complete, regardless of the amount of material, equipment, and labor necessary to complete the same in a proper and professional manner and in accordance with the contract documents. The Offeror shall verify these quantities in any manner deemed necessary or expedient.

(b) Joint Contractor; Subcontractor Listing

For RFB solicitations, offeror shall comply with HRS §103D-302, relating to the listing of joint contractors or subcontractors.

Specialty work. Joint contractors and subcontractors may perform only the specialty work for which they are listed. When additive/deductive alternates are made a part of the offer, Offeror shall indicate, if applicable, the additive/deductive alternate and the basic work to be performed by each joint contractor or subcontractor.

A listing that is incomplete, ambiguous, or erroneous may be cause for rejection of an offer. Offers which are not in compliance may be accepted if the City concludes that acceptance is in the best interest of the public and the value of the work to be performed by the joint contractor or subcontractor is equal to or less than one percent of the total sum offer amount.

A subcontractor listing is not required for procurements made in accordance with HRS 103D-305 (RFQ solicitations).

(c) Allowances

Any allowance amount specified in the solicitation shall be considered an estimate of the amount required and shall be included in the Offeror's total sum offer. Offerors shall refer to the applicable sections of the City's General Terms and Conditions regarding Allowances for more information.

(d) Mobilization

Offerors shall refer to the applicable sections of the City's General Terms and Conditions regarding mobilization for more information.

(e) Employment of State Residents on Construction Projects.

Unless otherwise stated in the solicitation, offerors are advised of the applicability of HRS §103B, Employment of State Residents on Construction Procurement Contracts. HRS §103B requires the awarded Contractor to ensure that Hawaii Residents compose not less that eighty percent (80%) of the workforce employed to perform the contract. This requirement shall apply to subcontracts of $50,000.00 or more in connection with any construction contract procured under HRS §103D.

(f) Safety and Health Certification

Pursuant to HRS 396-18, all bids and proposals in excess of $100,000 for state construction jobs as defined in section 103D-104 shall include a signed certification from the offeror that a written safety and health plan for the job will be available and implemented by the notice to proceed date of the project. Pursuant to HRS 489E, Uniform Electronic Transactions Act, submittal of an electronic bid in excess of $100,000 shall be deemed to be this signed certification.

2.14 General Terms & Conditions.

The City's General Terms and Conditions shall be either incorporated by reference or by attachment to the solicitation. Offers submitted with any alterations to the City's General Terms and Conditions so made by the Offeror without approval by the City may be sufficient cause for rejection of the offer.

2.15 Source Selection for Federal Grants.

The City may solicit a Request for interest for the sourcing of federal grants pursuant to the requirements of HAR §3-122-16.31.

2.16 Multi-Step Competitive Sealed Bidding.

The City may solicit offers using the multi-step competitive sealed bidding method of source selection pursuant to HAR §3-122, Subchapter 6.5.

Solicitations using this method use two phases:

(a) Phase One

Phase One is conducted in accordance with HAR §3-122, Subchapter 6, with the exception of rules relating to the priced offer. Offerors submit unpriced technical proposals to be evaluated on criteria specified in the solicitation. The City may conduct discussions to clarify the unpriced technical proposals. If the priced offer is specified to be submitted in Phase One, they shall be submitted in a separately sealed envelope and will only be considered in Phase Two from offerors whose unpriced technical proposals are determined to be acceptable in Phase One.

(b) Phase Two

Phase Two is conducted in accordance with HAR §3-122, Subchapter 5, except as set forth in HAR §3-122, Subchapter 6.5. Offerors whose unpriced technical proposals are determined to be acceptable will have their sealed price offers opened (if required to be submitted in Phase One) or be requested to submit a sealed priced offer.

2.17 Request for Clarification.

If a prospective Offeror believes that any of the matters in, or related to, the solicitation are not sufficiently described or explained in the solicitation, or that any discrepancy exists between different parts of the solicitation, or that the full intent of the solicitation is not clear, then the Offeror shall submit a written request for clarification no later than the deadline stated in the solicitation document. The City is not obligated to respond to any request received after the deadline. In the Vendor Self Service (VSS) eProcurement system, the City will not respond to inquiries posted on the VSS Bulletin Board or Q&A list page of the solicitation.

Written request for clarifications shall be e-mailed to bfspurchasing@honolulu.gov or mailed hardcopy to:

City and County of Honolulu
Budget and Fiscal Services
Purchasing Administrator
530 South King Street, Room 115
Honolulu, Hawaii 96813

2.18 Request for Substitution.

Alternate brands, makes, methods and/or packaging may be qualified through the submittal of a written request for substitution for review and approval. An alternate brand, make, or method approved for one procurement or project is not to be considered as approved for any other procurement or project. Offeror shall submit a written request for substitution no later than the deadline stated in the solicitation document. Requests received after the deadline will be denied.

(a) Goods or Services projects.

The written request for substitution must state all features of the proposed substitution that differ from the brand, model, make, method, and/or packaging specified in the solicitation. The written request shall also include sufficient evidence to enable the City to evaluate each feature.

Written request for substitution shall be e-mailed to bfspurchasing@honolulu.gov, or mailed hardcopy to:

City and County of Honolulu
Budget and Fiscal Services
Purchasing Administrator
530 South King Street, Room 115
Honolulu, Hawaii 96813

(b) Construction Projects

The written request must be clearly marked SUBSTITUTION REQUEST on the envelope. Unless otherwise stated in the solicitation, six copies of the request must be submitted together with three sets of technical brochures which shall either be marked or be accompanied by three copies of a statement of variances. The statement of variances must list all features of the proposed substitution which differ from the solicitation, and must further certify that the substitute has no other variant features. The brochures must include sufficient evidence to enable the City to evaluate each feature listed as a variance. Should an unlisted variance be discovered after installation or delivery of the item, the Contractor shall immediately replace the item with the specified item at no cost to the City and without any extension to the contract completion time.

The written substitution request shall be submitted in the following format:

SECTION ITEM SPECIFIED SUBSTITUTE VARIANCE

(For a sample request form refer to General Terms and Conditions Exhibit P.)

If sufficient evidence to make a determination of acceptability of the proposed substitute does not accompany a request for substitution, the request shall be rejected unless the City allows further evidence to be submitted to qualify the same model and provided that such evidence is submitted prior to the specified deadline.

Substitution requests not complying with the above requirements may be rejected.

Any Offeror whose offer is based on a substitute item which has been approved by the City shall include in its price offer the additional cost required for all modifications in the contract and the cost of all additional diagrams and drawings required to accommodate the substitute item. The modifications referred to include the changes in design that may be required.

Written request for substitution shall be submitted by person, or mailed hardcopy to:

City and County of Honolulu
Budget and Fiscal Services
Purchasing Administrator
530 South King Street, Room 115
Honolulu, Hawaii 96813

(c) Approval and Rejection of Request for Substitution

All requests for substitution submitted prior to the deadline will be responded to.

(1) Approval of Request for substitution.
The City will publish all products approved for substitution via addendum.

(2) Rejection of a Request for substitution.
The City will provide offerors who submit a request for substitution that is rejected a letter detailing the rejection and/or post the rejection in an addendum.

2.19 Solicitation Addenda.

(a) Written Addendum

Oral interpretations or clarifications or changes or approved substitutions will be without legal effect. Only interpretations or clarifications or changes or approved substitutions provided by formal written addendum to the solicitation shall be binding.

(b) Notification of Addenda

(1) In the Vendor Self Service (VSS) eProcurement system, when an addendum is issued, email notifications will be sent to all offerors registered under the solicitation's specified commodity class.
(2) For all other RFB solicitations, notifications of addenda will be issued to all prospective Offerors that downloaded the solicitation document from the City.
(3) For RFPs, if the addendum is issued after the receipt of proposals, notifications will be sent to those Offerors who submitted proposals or who are "priority listed."

(c) Modification to Price Items

It shall be the responsibility of the Offeror to modify or withdraw its offer based on compliance with addenda.

2.20 Cancellation of Solicitation.

A solicitation may be canceled in whole or in part and at any time per HAR §3-122-96.

## CHAPTER 3.0: PREFERENCES

This chapter may not apply to Federally funded procurements.

3.1 Applicability of Preferences.

The Apprenticeship preference may apply to solicitations in accordance with HRS §103-55.6.

All other preferences shall only apply to a solicitation when:

(a) An offer form or certificate for the preference is included in the solicitation document; and

(b) The solicitation indicates the applicability of the preference in the solicitation's offer pages, special instructions or special provisions.

3.2 Evaluation of Preferences.

(a) The evaluation of preferences shall be in accordance with HRS §103D Part X and HAR §3-124.

(b) Evaluation procedure and contract award. Solicitations allowing more than one preference shall be evaluated and awarded in accordance with HAR §3-124-25.

(c) Preferences shall be for evaluation purposes only. The award contract amount shall be the amount of the offer, exclusive of any preference.

## CHAPTER 4.0: OFFER

4.1 Preparation of Offers.

(a) All offers shall comply with the following:

(1) Shall not include samples or descriptive literature unless expressly requested. Any unsolicited samples, descriptive literature, or attachments will not be examined or tested, and will not be deemed to vary any of the provisions of the solicitation.
(2) All costs to prepare and submit an offer shall be at the Offeror's expense. The City will not reimburse any offer costs or any best and final offer costs incurred by any Offeror, any prospective Offeror, or any other person.
(3) An offer shall be submitted by an individual, member, officer, or agent of the Offeror legally qualified and authorized to do so.
(4) Time is of the essence and the time for delivery is a part of the response and must be adhered to. Time, stated in the number of days, shall mean "calendar" days, and shall include weekends and holidays.

(b) Offers for solicitations that were posted in the Vendor Self Service (VSS) eProcurement system shall comply with HRS §489E. The Offeror's submission of an electronic offer confirms that the Offeror:

(1) Intends to be bound by the offer.
(2) Agrees to all terms, conditions, and provisions of the solicitation.
(3) In accepting the electronic terms, the offer is deemed equal to a signed certification.

(c) Offers for all other solicitations shall comply with the following:

(1) Shall be prepared using the solicitation documents provided by the City.
(2) Shall be prepared in ink or typewritten. Errors may be erased or crossed out, and corrections typewritten or printed in ink but must be initialed in ink by the person or persons signing the offer.
(3) Shall be signed in ink by the individual if offering as a sole proprietor, by one or more members of a partnership, by one or more members or officers of each entity in a joint venture, by one or more officers of a corporation, or by an agent of the Offeror legally qualified and acceptable to the City.

(d) Pursuant to HAR §3-122-21(4)(B), space is provided in solicitations for: brand name, model number and/or packaging. Offerors who leave these fields blank (physically and electronically) certify, by submitting their offer, that they are providing as specified. An offeror who inputs a brand name, model number, and/or packaging that is not pre-approved or approved during the solicitation may have their bid rejected as non-responsive. This paragraph shall not apply to service solicitations.

4.2 Certificate of Acceptance of Solicitation Requirements.

The Certificate of Acceptance of Solicitation Requirements when made a part of the solicitation shall be completed, signed by the Offeror, and submitted with the Offeror's offer. Failure to submit the required certification may be grounds for disqualification of the Offeror's offer.

The Offeror shall sign the Certificate of Acceptance of Solicitation Requirements to acknowledge that the Goods, Services, or Construction provided by the Offeror are in compliance with the Scope of Work specified in the solicitation. Deviations from the specified Scope of Work shall only be allowed by the approval of the City unless otherwise specified in the solicitation.

By submitting a bid in Vendor Self Service (VSS) eProcurement system, you are hereby accepting and acknowledging your acceptance of solicitation requirements and are not required to submit the certification form.

4.3 Certificate of Cost or Pricing Data.

When an offer in response to a Request for Competitive Sealed Proposal (RFP) solicitation is in excess of $100,000.00, the Offeror shall certify that the offer's cost or pricing data is accurate, complete, and current. Failure to submit the required certification may be grounds for rejection of the offer.

4.4 Proprietary or Confidential.

Offeror shall clearly label any proprietary information as confidential. Any information labeled as confidential will remain confidential to the extent provided by law. Offers submitted to the City shall become the property of the City.

4.5 Offer Submission.

(a) Offers for solicitations that were posted in the Vendor Self Service (VSS) eProcurement system: The offeror shall submit its offer electronically within the VSS system. Unless otherwise specified, the City shall only consider offers submitted in the VSS system for award. Offerors shall be responsible for registration and successful response submittal in VSS.

(b) Offers for all other solicitations: If the solicitation specifically requires hard copy offers, the offer should be sealed in an envelope. The solicitation

number, Offeror's name and address, and closing date of the solicitation should be printed on the outside of the envelope. The offer envelope must be time stamped and deposited at the Division of Purchasing.

4.6 Modification or Withdrawal of Offers.

An offer may be modified or withdrawn prior to the solicitation's close date and time.

## CHAPTER 5.0: OPENING OF BIDS AND REGISTRATION OF PROPOSALS

5.1 Public bid opening of RFB and RFQ solicitations.

(a) Opening for RFB and RFQ solicitations that were posted in the Vendor Self Service (VSS) eProcurement system: After the solicitation's close date and time has passed, a bid tabulation will be available on the solicitation's detail page in VSS.

(b) Opening for all other RFB solicitations: The opening of offers shall be by a representative of the City, at the date and time stated in the solicitation, in the presence of all Offerors who attend. The opened offers shall be available for public inspection at the time of offer opening except to the extent that the Offeror designates trade secrets or other proprietary data to be confidential. Offerors shall ensure that material so designated as confidential shall be readily separable from the offer in order to facilitate public inspection of the non-confidential portion of the offer. Prices and makes and model or catalogue numbers of items offered, deliveries, and terms of payment shall be publicly available at the time of offer opening regardless of any designation to the contrary.

5.2 Opening of RFP Solicitations.

After the RFP submittal due date, proposals shall not be publicly opened. Proposals shall be open to public inspection after the notice of award has been posted.

If the RFP required submitting physical proposals they shall be opened in the presence of two or more procurement officials.

5.3 Late Offers and Late Modifications.

The City shall not accept offers and modifications after the solicitation close time and date.

5.4 Time for Acceptance of Offer.

Unless otherwise stated in the solicitation, an offer may be withdrawn only if the City fails to award the contract within:

(a) For City-funded projects or projects funded in whole or in part by the federal government; within sixty (60) days of the deadline for offers;

(b) For projects funded in whole or in part by the State, within one hundred fifty (150) days of the deadline for offers; and

(c) For improvement district projects, within three hundred (300) days of the deadline for offers.

## CHAPTER 6.0: EVALUATION OF OFFERS

6.1 Waiver of Informalities.

The City may waive or accept minor informalities, mistakes or other defects in accordance with HAR §3-122-31.

6.2 Multiple or Alternate Offers.

Unless specifically provided for in the solicitation, multiple or alternate offers by the same offeror shall not be accepted and all such offers shall be rejected.

An offeror shall be considered to have submitted more than one offer if such offeror submits more than one offer under the same Taxpayer Identification Number (FEIN or SSN), same name, or through agents, or through joint ventures, partnerships or corporations in which such person has more than a twenty five percent interest in each of them, or through any combination thereof.

6.3 Conditioned Offers.

Offers that are conditioned may be deemed nonresponsive and rejected.

6.4 Limiting Acceptance to Entire Offer.

An Offeror may not limit acceptance to the entire offer, unless allowed by the solicitation:

(a) If the acceptance of an offer is so limited by the Offeror but not allowed, the offer will be determined to be not acceptable and rejected.

(b) If the acceptance of an offer is so limited by the Offeror and allowed, the purchasing agency shall not reject part of the offer and award on the remainder.

6.5 Anti-competitive Practices.

If there is any evidence indicating that two or more Offerors are in collusion to restrict competition or have otherwise engaged in anti-competitive practices relating to the procurement, the offers of all such Offerors shall be rejected and such evidence may be a cause for their suspension or debarment.

6.6 Suspended or Debarred List.

No contract will be awarded to any Offeror suspended or debarred by the Federal, State or City.

6.7 Unauthorized Communications

Except as otherwise authorized in the solicitation, offerors shall not communicate with the Contracting Officer, any member of an Evaluation Team or Selection Committee appointed by the Contracting Officer, or any other City officer, employee or agent directly serving the procurement activity.

6.8 Rejection of Offers.

The City reserves the right to reject any or all offers when in the City's opinion; such rejection will be in the best interest of the City. Offers may be rejected for the following reasons:

(a) Offeror lacks sufficient experience to perform the work contemplated;

(b) Offeror does not possess proper license, if required to cover the type of work contemplated, at the time of the offer submittal due date, unless otherwise specified in this solicitation;

(c) Offeror who has uncompleted work on contracts in force, or a record of unsatisfactory work performance or delays on completed contracts or on contracts in force which, in the judgment of the City, might hinder or prevent the prompt completion of additional work if awarded;

(d) Offeror who has complaints filed for abusive or threatening language or behavior during previous contracts toward any City Officer-in-Charge or his/her representative;

(e) Offeror who has had a previous contract terminated for default by the City;

(f) Offeror who has failed to comply or is delaying compliance with the requirements for final inspection or final payment of the City's General Terms and Conditions for any contract in force;

(g) Offeror is determined to be non-responsible;

(h) Offeror fails to pay, or satisfactorily settle, all bills overdue for labor and material on former City contracts prior to the offer submittal due date;

(i) The Offeror assisted in developing or preparing the specifications or work statements.

(j) The offer does not conform in all material respects to the requirements of the solicitation.

(k) The proposed price is clearly unreasonable.

6.9 Cost Analysis Data

The City reserves the right to request cost data. Pursuant to HAR §3-122-35, this cost data will be used to determine if an offer is fair and reasonable. Information provided by the Offeror shall remain confidential and proprietary in accordance with HRS §92F-13(3).

## CHAPTER 7.0: DISCUSSION & BEST AND FINAL OFFER

This chapter shall apply only to Request for Competitive Sealed Proposals (RFP) solicitations.

7.1 Priority Listed Offers.

The City may establish a Priority List consisting of at least three (3) Offerors. Those Offerors who are selected for the priority list are referred to as the "Priority-Listed Offerors (PLO)." The City will not publicly identify the PLO firms prior to the public posting of the notice of award.

When soliciting using a Design Build RFP, the three responsible, most qualified offerors shall be short-listed as PLO and notice will be given to all offerors as to which offerors are short-listed.

If the City issues addenda after the PLO firms are determined, the City will issue the addenda only to the PLO firms.

7.2 Discussions.

Discussions will be limited to only Priority-Listed Offerors (PLO). PLOs shall be accorded fair and equal treatment with respect to any opportunity for discussions and revisions of offers; however, offers may be selected without such discussion.

New proposals or amendments to the existing solicitation that, in the City's sole judgment, significantly change the nature of the procurement will not be permitted. Should the City believe it is in its best interest to go forward with a

significant change, then the solicitation may be cancelled and a new solicitation may be issued.

Non-Disclosure of offer contents. The contents of any offer shall not be disclosed so as to be available to competing Offerors during the discussion process.

7.3 Best and Final Offer (BAFO).

The City reserves the right to issue a request for Best and Final Offers (BAFOs). However the City is under no obligation to do so. The City may make its selection and Award based on the initial offers submitted.

If BAFOs are requested, the City shall inform the PLO firms and allow/request revised offers, including correction of any weaknesses, minor irregularities, errors, and/or deficiencies identified by the City. Adequate time shall be provided to PLO firms to revise their offers. Upon receipt of the BAFOs, the City will repeat the evaluation process. The evaluation process will consider the revised information, re-evaluate, and revise scores as appropriate.

## CHAPTER 8.0: AWARD

8.1 RFB and RFQ Solicitations.

(a) Additive or Deductive Alternates

In the event additive or deductive alternates are included in the solicitation, the lowest offer will be determined after adding to or deducting from the total basic price, the alternate or alternates considered for award. Alternates, if any are awarded, shall be awarded in the order listed in the offer. Award of alternates shall be dependent upon the availability of funds.

(b) Low Tie Bids

In the case low tie bids from responsible and responsive Offerors are received, award may be made by the drawing of lots.

8.2 Exceeding Available Funds.

In the event all offers exceed available funds and where time or economic considerations preclude re-solicitation of a reduced scope of work, the City may negotiate an adjustment of the offer price, including changes in the solicitation requirements, with the lowest priced responsive and responsible Offeror, to bring the offer within the amount of available funds.

8.3 Verification of Responsibility of Offeror.

Prior to the award of the contract, the successful Offeror shall be registered as "Compliant" on the State of Hawaii Compliance Express System (http://vendors.ehawaii.gov) or submit the required tax clearances from the State Department of Taxation and Internal Revenue Service, the Certificate of Compliance with the State Department of Labor and Industrial Relations, and the Certificate of Good Standing with the Department of Commerce and Consumer Affairs Business Registration Division. The City may reject the offer if the Offeror fails to provide proof of compliance within the time permitted by the City. Offeror shall meet all licensing requirements of the solicitation.

8.4 Execution of Contract.

Upon notification of award, the successful Offeror shall obtain the contract from the Division of Purchasing, Department of Budget and Fiscal Services, for execution. The contract document shall be returned within ten days from the date of notification of the award, or within such time as the City may allow.

Failure to enter into the contract and to furnish satisfactory security, when required, may be cause for cancellation of the Offeror's award and forfeiture of the Offeror's offer security, if any, as liquidated damages and not as a penalty.

The contract documents are to be completed and executed by the Offeror in the following manner:

(a) Notarization

Signatures appearing on the contract forms and bond forms (if applicable) must be notarized by a notary public.

(b) Authorization

The City may require, in the case of a corporation, a corporate resolution authorizing the person(s) signing to execute the contract and bond. The City may require, in the case of a joint venture or partnership, a power of attorney authorizing the person(s) signing to execute the contract and bond. The surety, if applicable, may also be required to attach its corporate resolution or power of attorney authorizing the person(s) signing to execute the bond.

(c) Performance and Payment Bonds

Performance and payment bonds, if required, shall be delivered at the same time the contract is executed. Performance and payment bonds shall be in conformance with HAR §3-122-221, §3-122-222 and §3-122-227.

(d) Evidence of Insurance Coverages

If insurance coverages are required by the solicitation, evidence of insurance coverages shall be delivered at the same time the contract is executed.

8.5 Awards of Less than $100,000 and $250,000.

On any individual award totaling less than $100,000 for Goods or Services and less than $250,000 for construction, the City reserves the right to award the contract by Purchase Order. The purchase order shall be performed in accordance with the terms set forth in the solicitation.

8.6 Cancellation of Award.

The City reserves the right to cancel the award of any contract any time before the City signs the contract.

## CHAPTER 9.0: DEBRIEFING, PROTEST, SUSPENSION AND DEBARMENT

9.1 Debriefing.

Debriefing shall apply only to Request for Competitive Sealed Proposal (RFP) solicitations. A written request for a debriefing shall be made within three (3) working days after the posting of the award.

9.2 Authority to Resolve Protested Solicitations and Awards.

The City shall resolve complaints and protest of awards in accordance with HAR §3-126-1 and HRS §103D-701.

9.3 Authority to Debar or Suspend.

The City may debar or suspend an Offeror for cause from consideration for award of contracts in accordance with the provisions of HRS §103D-702, and HAR §3-126-2.

9.4 Solicitation or Award in Violation of Law.

If a solicitation or award is found to be in violation of law, it shall be resolved in accordance with HAR §3-126-4.

RFB-DDC-2071008

# OFFER

_____
Offeror's Legal Business Name

Director of Budget and Fiscal Services
Department of Budget and Fiscal Services
City and County of Honolulu
Honolulu, Hawaii 96813

The undersigned hereby proposes and agrees, if this Offer is accepted, to furnish and pay for all labor, materials, tools, equipment, and incidental work necessary to construct or install, in place complete, the work called for under and in accordance with the true intent of the Contract Documents for:

KALIHI VALLEY DISTRICT PARK GYMNASIUM ROOF IMPROVEMENTS

1911 KAMEHAMEHA IV ROAD
HONOLULU, HI 96816

TAX MAP KEY: 1-3-024:002

PROJECT NUMBER: 27-P-04

on file in the Office of the Division of Purchasing, Department of Budget and Fiscal Services, City and County of Honolulu, and that the undersigned will take in payment therefore, the unit and/or unit sum prices itemized in the following Offer Schedule. It is reemphasized that all items in the Offer Schedule shall be considered as in place complete, in every respect.

Basic Bid

| Item No. | Quantity | Description | Unit Price | Bid Amount |
|---|---|---|---|---|
| 1. | Lump Sum | Gymnasium Demolition and replacement of existing roofing at Kalihi District Park Gymnasium. Replacement of outer roof purlins, reinforcement of existing roof purlins, and new roof decking. Removal of existing internal gutter and portion of downspouts. Replace all existing wall flashing and wall coping. Install new above-deck rigid insulation. Provide roofing and accessories complete in accordance with the drawings and specifications. | Lump Sum | $_____ |

| Item No. | Quantity | Description | Unit Price | Bid Amount |
|---|---|---|---|---|
| 2. | Lump Sum | Gymnasium Demolition and replacement of expanded metal ventilation screens and supporting framing at roof overhangs. Provide all materials as required for a complete installation in accordance with the plans and specifications. | Lump Sum | $_____ |
| 3. | Lump Sum | Gymnasium Demolition and replacement of new metal wall panel parapet fascia. Repair of portion of existing parapet steel trusses. Provide all materials (including roof accessories) as required for a complete installation in accordance with the plans and specifications. | Lump Sum | $_____ |
| 4. | Lump Sum | Gymnasium Replacement of damaged and installation of new decorative wood vertical members and beams. This includes painting of existing wood members/beams and replacement of damaged wired glass with impact resistant polycarbonate panels (including wood stops). Provide all materials as required for a complete installation in accordance with the plans and specifications. | Lump Sum | $_____ |
| 5. | Allowance | Allowance No. 1 - Permit fees, installation, facilities and charges by various utility companies and government agencies including but not limited to the Board of Water Supply, Hawaiian Electric Company, City Department of Planning and Permitting, State Department of Health, State Department of Land and Natural Resources, etc. The Contractor shall not add any burden (i.e. profit, overhead, bonding, etc.) to this allowance. The Contractor shall be compensated in accordance with Section 5.4.2 Allowance Items of the General | | |

| Item No. | Quantity | Description | Unit Price | Bid Amount |
|---|---|---|---|---|
| 5. (Cont.) | | Terms and Conditions. Unused portion of the allowance shall remain with the City. | Allowance | $10,000.00 |
| 6. | Allowance | Allowance No. 2 - Compliance with State of Hawaii Historic Preservation Law as directed on-site by the Officer-in-Charge.<br><br>Contractor shall be compensated in accordance with Section 5.4.2 Allowance Items of the General Terms and Conditions. Unused portion of the allowance shall remain with the City. | Allowance | $5,000.00 |
| 7. | Allowance | Allowance No. 3 – Allowance for City furnished special inspector to perform special inspections as required by building code.<br><br>Contractor shall be compensated in accordance with Section 5.4.2 Allowance Items of the General Terms and Conditions. Unused portion of the allowance shall remain with the City. | Allowance | $ 10,000.00 |
| | | Total Sum Basic Bid (Item Nos. 1 through 7, inclusive) | $_____ | |

The Undersigned also agrees as follows:

1. That the bids submitted on the various items in this Offer on which a Lump Sum bid is asked, include all materials, equipment, labor and all other incidental work required for the complete construction and installation of these improvements in accordance with the plans and specifications.

   That the quantities in any item on a Lump Sum bid in this Offer are approximate only and that payment will be made only for the item in place complete, regardless of amount of material, equipment and labor necessary to complete the same in a proper and workmanlike manner and in accordance with the plans and specifications. That the quantities shown distributed in the lump sum items are given only for the Offeror's convenience and for the purpose of making monthly estimates. The Offeror shall verify these quantities in any manner he deems necessary or expedient.

2. Award of the contract shall be made to the responsive, responsible bidder submitting the lowest TOTAL SUM BASIC BID.

3. That the time of completion for the Basic Bid shall be within 300 consecutive calendar days from the Notice to Proceed and shall include provisions for the following:

   a. Submittals of shop drawings and materials for City review and approval. Submittals shall commence within 15 calendar days from the date of execution of contract and procurement of long lead items shall commence immediately after approval of required submittals.

   b. Approval of required permits including grading and building permits, NPDES permit, SMA permit, and any other permitting actions, as required. Approval of the necessary permits for this project is anticipated to take 12 months from the award of the contract. Construction onsite cannot commence until approval of all necessary permits, unless otherwise directed by the Officer-in-Charge.

   c. Landscaping and grassing requirements to include the 60 calendar day maintenance period.

   NOTE: The construction performance period must provide consideration of the above. Offeror will be responsible for any labor escalation and material escalation during the construction performance period provided that the NTP is issued within 6 months after execution of the contract.

   Please also refer to Paragraph 1.02 Notice To Proceed For Construction, PART 1 General, Section 01035 Construction Project Procedures, Division 1 – General Requirements of these Specifications, for additional information on the Notice To Proceed (NTP).

4. Construction sign will be provided by the Offeror.

5. That if this Offer shall be accepted and the Undersigned shall fail to or neglect to contract as aforesaid, and to furnish the required bond to the City within ten (10) days from the date of receiving from the City, the contract prepared and ready for execution,

the City may determine that the Offeror has abandoned the contract, and thereupon, forfeiture of the security accompanying his Offer shall operate and the same shall become the property of the City.

The Undersigned also agrees that if he is awarded this contract, he will enter into and execute the same and that he will furnish bonds in the amount as required by the General Instructions to Offerors.

The Undersigned certifies that he is licensed to undertake this project pursuant to Chapter 444, HRS, as amended, relating to licensing of contractors.

The Undersigned also agrees that the Director of Budget and Fiscal Services reserves the right to reject any or all bids and to waive any defect therein.

Enclosed herewith is

| | |
|---|---|
| Surety bond | ) |
| Legal tender | ) |
| Certificate of deposit, share certificate, | ) (Circle one) |
| Cashier's check, treasurer's check, | ) |
| Teller's check, official check, | ) |
| Certified check | ) |

for the sum of _____

_____DOLLARS ($_____), being not less than five per cent of the amount bid.

Respectfully submitted,

_____
Offeror's Legal Business Name

By: _____
Authorized Signature

_____
Print or Type Name and Title of Above

Dated: _____

Address of Offeror _____

_____

Telephone Number _____

Email Address: _____

In accordance with Section 103D-302 HRS, all offers shall include the name of *each* person or firm to be engaged by the Offeror as a joint contractor or subcontractor in the performance of the contract for construction, and the nature and scope of work to be performed by each joint contractor or subcontractor. “Subcontractor” is defined in HAR § 3-120-2. Offers that do not comply with this requirement may be evaluated in accordance with Section 103D-302(b) of the HRS.

It is the sole responsibility of the Offeror to review the requirements of this project and determine the appropriate contractor’s licenses that are required to complete the project. The Offeror acknowledges that as a general contractor (‘A’ or ‘B’ license), the Offeror is prohibited from undertaking any work solely or as part of a larger project which would require the Offeror to act as a specialty contractor (‘C’ license) in any area in which the Offeror has no specialty contractor’s license. The Offeror must have the appropriate specialty contractor’s license either obtained on its own, or obtained automatically under HAR §16-77-32.

In determining work that is to be performed by joint contractors or subcontractors, Offerors shall be familiar with among other things, HRS 444, relating to licensing of contractors and the Hawaii Administrative Rules, Title 16, Department of Commerce and Consumer Affairs, Chapter 77, Contractors.

Contractors that are suspended or debarred by the State of Hawaii, State Procurement Office (SPO) under HRS Chapter 103D, cannot be considered for award during the suspension or debarment.

Contractors or subcontractors that are suspended by the State of Hawaii, Department of Labor and Industrial Relations (DLIR) under HRS Chapter 104 are prohibited from performing **any work** on any State or County public works construction project.

When more than one (1) joint contractor or subcontractor is listed for a category of work, the Offeror shall identify the scope of work each will perform. Joint contractors or subcontractors shall also be listed for work to be completed under additives or alternates.

All work not within the scope of work of the listed joint contractor(s) or subcontractor(s), shall be performed by the Offeror.

Include the name of each person or firm to be engaged by the Offeror as joint contractor or subcontractor in the performance of the contract in the following table. Write in the complete name of the Joint Contractor or Subcontractor, the Contractor License Number (if applicable), and the Nature and Scope of work to be performed by each.

| COMPLETE NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR | CONTRACTOR LICENSE NUMBER | SPECIFIC DESCRIPTION OF THE NATURE AND SCOPE OF WORK |
|---|---|---|
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## ACKNOWLEDGMENT OF LIQUIDATED DAMAGES PROVISION

PROJECT NAME AND NUMBER: KALIHI VALLEY DISTRICT PARK GYMNASIUM ROOF IMPROVEMENTS, 27-P-04

This is to certify that the undersigned understands and agrees to the provisions for Liquidated Damages, Section 3.16 of the General Terms and Conditions, City and County of Honolulu, and Section SP 3 of the Special Provisions, and that submittal of our bid constitutes acceptance of the provisions and amount of liquidated damages that may be assessed per calendar day as specified in the Special Provisions.

_____
Offeror's Legal Business Name

_____
Signature and Title

Date: _____

(Failure to submit this form with the bid may be cause for rejection.)

**CERTIFICATION OF COMPLIANCE**
**WITH HRS 396-18, SAFETY AND HEALTH PROGRAMS**
**FOR CONTRACTOR BIDDING ON CITY JOBS**

PROJECT NAME AND NUMBER: KALIHI VALLEY DISTRICT PARK GYMNASIUM ROOF IMPROVEMENTS, 27-P-04

This is to certify that the undersigned will comply with the requirements of HRS 396-18, as follows:

(A) Pursuant to HRS 396-18, all bids and offers in excess of $100,000 shall include a signed certification from the Offeror that a written safety and health plan for the job will be available and implemented by the notice to proceed dates of the project. The written safety and health plan shall include:

(1) A safety and health policy statement reflecting management commitment;

(2) A description of the safety and health responsibilities of all levels of management and supervisors on the job and a statement of accountability appropriate to each:

(3) The details of:

(a) The mechanism for employee involvement in job hazard analysis;
(b) Hazard identification, including periodic inspections and hazard correction and control;
(c) Accident and "near-miss" investigations; and
(d) Evaluations of employee training programs;

(4) A plan to encourage employees to report hazards to management as soon as possible and to require management to address these hazards promptly; and

(5) A certification by a senior corporate or company manager that the plan is true and correct.

(B) Failure to submit the required certification may be grounds for disqualification of the bid.

(C) Failure to have available on site or failure to implement the written safety and health plan by the project's notice to proceed date shall be considered willful noncompliance and be sufficient grounds to disqualify the award and terminate the contract.

_____
Offeror's Legal Business Name

_____
Signature and Title

Date: _____

## CERTIFICATE OF ACCEPTANCE OF SOLICITATION REQUIREMENTS

It is understood and agreed that the undersigned acknowledges the following:

1. The Offeror has read this solicitation document including any addenda, in its entirety;

2. The Offeror understands and agrees to furnish, deliver, and perform the requirements of the solicitation in strict compliance with the solicitation document as amended, including any specifications, plans, and scope of work descriptions, without any exceptions, if awarded a contract;

3. The Offeror understands and agrees that no substitution or alternate brands may be furnished without the **written approval** of the City;

4. The Offeror understands that the Contractor shall resolve any noncompliance with the requirements of the awarded contract at the Contractor's own expense;

5. The Offeror will make all modifications or customizations to the brand and model being offered as necessary to meet all specifications, at no additional cost. Offeror guarantees that all modifications or customizations done to meet specifications shall not affect the quality or operation of the product; and

6. The Offeror understands that **FAILURE TO MEET CONTRACT REQUIREMENTS WILL CONSTITUTE A BREACH OF CONTRACT THAT MAY RESULT IN SUSPENSION OR DEBARMENT, AND THE EXERCISE OF RIGHTS AND REMEDIES AS PROVIDED BY LAW.** Contract requirements include any specifications, plans, and scope of work descriptions;

7. The undersigned is an authorized representative of the Offeror and can legally obligate the Offeror thereto.

Offeror's Legal Business Name: _____

Signature: _____

Print Name: _____

Title: _____

Date: _____

Phone: _____

**SURETY BID BOND**

Bond No. _____

**KNOW TO ALL BY THESE PRESENTS:**

That we, _____,
*(Full Name or Legal Title of Offeror)*
as Offeror, hereinafter called 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 the CITY AND COUNTY OF HONOLULU, 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 _____, _____.

(Seal) _____
Name of Principal (Offeror)

_____
Signature

_____
Title

(Seal)

_____
Name of Surety

_____
Signature

_____
Title

**CONTRACT NO. XX-XXX-XXXXXXX**
SOLICITATION NO. RFB-XXX-XXXXXXX

THIS AGREEMENT (or "Agreement"), made and entered into on _____, by and between the CITY AND COUNTY OF HONOLULU, a municipal corporation existing under and by virtue of the laws of the State of Hawai'i, with offices at Honolulu Hale, 530 South King Street, Honolulu, Hawaii 96813, hereinafter called the "CITY" (or "City"), and [CONTRACTOR'S LEGAL NAME] whose principal place of business is [CONTRACTOR'S ADDRESS], hereinafter referred to as the "CONTRACTOR" (or "Contractor").

WITNESSETH THAT:

WHEREAS, the CITY desires to engage the CONTRACTOR to [Project Description]; and

WHEREAS, a solicitation for bids and the selection of the CONTRACTOR were made in accordance with section 103D-302, Hawaii Revised Statutes ("HRS") and the related Hawaii Administrative Rules ("HAR"). The CONTRACTOR has been identified as the lowest responsible and responsive bidder, whose bid meets the requirements and criteria set forth in the invitation. The CONTRACTOR [shall/shall not] be subject to the Hawaii Bidder/Offeror Preference requirements stated in Appendix D: Special Provisions; and

WHEREAS, the CONTRACTOR is willing and able to provide the services set forth in this Agreement;

NOW, THEREFORE, the CITY and the CONTRACTOR, in consideration of the foregoing and of the mutual promises hereinafter set forth, the sufficiency and adequacy of which are hereby acknowledged, and intending to be legally bound, hereby mutually agree as follows:

1. This Contract and the following documents, appendices and exhibits collectively form the "Agreement" or "Contract Documents", all of which are attached hereto and incorporated herein:

This Contract

Appendix A: Scope of Work

Appendix B: Term/Schedule of Work

Appendix C: Pricing/Certifications

Appendix D: Special Provisions

Appendix E: General Terms and Conditions ("GTC")

The Contract Documents as listed hereinabove are in the order of controlling preference should there be any conflict in the terms of the Contract Documents.

SAMPLE

2. The CONTRACTOR shall furnish all services, labor, goods, materials, supplies, equipment and other incidentals reasonably necessary for the successful completion of the work contemplated under Appendix A: Scope of Work and this Agreement.

3. The CITY agrees to pay the CONTRACTOR for the satisfactory performance and completion of the Work in accordance with the payments schedule and provisions, all as set forth in Appendix C: Pricing/Certifications, Appendix D: Special Provisions and Appendix E: General Terms and Conditions. The total amount of this Agreement shall not exceed [Dollar Amount Spelled Out] [($XX.XX)], which is the maximum payable under this Agreement and inclusive of all taxes. CONTRACTOR shall not pass through any increases in taxes to the City.

Such payments shall be provided from the following funds:
Federal Funds [Dollar Amount]
City Funds [Dollar Amount]

It is hereby agreed by and between the parties hereto that the sum of [Dollar Amount] shall be paid only out of the applicable Federal funds, and that this Agreement shall be construed to be an agreement by the City to pay such compensation to the CONTRACTOR only out of the aforesaid Federal funds when such Federal funds are received from the Federal Government

4. The term of the Agreement shall be provided in Appendix B: Term/Schedule of Work.

5. The CONTRACTOR will perform said work in an efficient manner so as entirely to complete and perform said work within the time set forth in Appendix B: Term/Schedule of Work.

IN WITNESS WHEREOF, this AGREEMENT is executed by the duly authorized officer or agent of the CITY and the CONTRACTOR.

| CITY AND COUNTY OF HONOLULU | CONTRACTOR'S LEGAL NAME |
|---|---|
| BY: | BY: |
| PRINTED NAME: | PRINTED NAME: |
| TITLE: Director,<br>Department of Budget and Fiscal Services | TITLE: |
| DATE: | DATE: |

APPROVED AS TO FORM AND LEGALITY

_____
Deputy Corporation Counsel

SAMPLE

IN WITNESS WHEREOF, this AGREEMENT is executed herein by the duly authorized officers or agents of the CITY and the CONTRACTOR.

| CITY AND COUNTY OF HONOLULU | <CONTRACTOR NAME> |
|---|---|
| BY: | BY: |
| PRINTED NAME: | PRINTED NAME: |
| TITLE: Director,<br>Department of Budget and Fiscal Services | TITLE: |
| DATE: | DATE: |

APPROVED AS TO FORM AND
LEGALITY

_____

Deputy Corporation Counsel
City and County of Honolulu

SAMPLE

# SPECIAL PROVISIONS

SP 1. GENERAL CONDITIONS. The "GENERAL TERMS AND CONDITIONS, CITY AND COUNTY OF HONOLULU" dated February 1, 2015, hereinafter referred to as the "GENERAL CONDITIONS" is incorporated herein by reference only and made a part of these specifications. Copies of the GENERAL CONDITIONS may be obtained from the Division of Purchasing, Department of Budget and Fiscal Services website at www.honolulu.gov/pur. Any provision of the GENERAL CONDITIONS not in conflict with the HAR shall be applicable to this Contract.

SP 2. DIFFERING SITE CONDITIONS FOR CONSTRUCTION PROJECTS. Delete Section 3.9 of the GENERAL CONDITIONS in its entirety and, in lieu thereof, insert:

"3.9 Differing Site Conditions for Construction Projects. Pursuant to HAR 3-125-11, the following shall apply to the procurement of construction under this contract:

Differing site conditions – price adjustments,

(A) Notification. The contractor shall promptly, and before such conditions are disturbed, notify the procurement officer of:

(i) Subsurface or latent physical conditions at the site differing materially from those indicated in this contract; or
(ii) Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract.

(B) Adjustment of price or time for performance. After receipt of the notice, the procurement officer shall promptly investigate the site, and if it is found that the conditions do materially so differ and cause an increase in the contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of the conditions, an adjustment shall be made and the contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the price adjustment clause of this contract.

(C) Timeliness of claim. No claim of the contractor under this clause shall be allowed unless the contractor has given the notice required in this clause; provided, however, that the time prescribed therefore may be extended by the procurement officer in writing.

(D) No claim after final payment. No claim by the contractor for an adjustment there under shall be allowed if asserted after final payment under this contract.

(E) Knowledge. Nothing contained in this clause shall be grounds for an adjustment in compensation if the contractor had actual knowledge of the existence of such conditions prior to the submission of bids. [HAR 3-125-11(1)]"

SP 3. LIQUIDATED DAMAGES. When the Contractor fails to complete the work or any portion of the work within the time or times specified in the Contract or any extension thereof, it is agreed that the Contractor shall pay to the City the amount specified below.

Liquidated damage per calendar day: $350.00

The Contractor hereby agrees to pay the amount as liquidated damages, and not by way of penalty, to the City and further authorizes the City to deduct the amount of the damages from monies due the Contractor under the Contract, computed as previously mentioned. If the monies due the Contractor are insufficient or no monies are due the Contractor, the Contractor shall pay the City the difference or the entire amount, whichever may be the case, upon demand by the City.

SP 4. BID SCHEDULE OF VALUES DATA. Each Offeror should submit with its offer in a separate sealed envelope identified on the outside by Offeror's name, project title and marked "Bid Schedule of Values Data", a breakdown of its overall bid on the bid schedule of values data sheet provided with the offer.

This information is required for analytical purposes only and shall have no bearing upon the determination of the lowest responsive, responsible Offeror. Information will not be divulged to the public, however, the City and County of Honolulu will not be held responsible for information made public that is not submitted in a separately sealed envelope as directed at the time bids are submitted.

If the bid schedule of values data sheet is not provided with the offer, and if requested by the City, the Offeror shall provide this data within three (3) City business days.

SP 5. PAYMENTS AND FINAL PAYMENT. Proof of compliance with HRS 103D-328 and HRS 103D-310 may be through Hawaii Compliance Express (HCE) or by written clearance issued by the Hawaii Department of Taxation, Internal Revenue Service, Hawaii Department of Labor, and Hawaii Department of Commerce and Consumer Affairs.

SP 6. CONTRACTOR PERFORMANCE RECORDS. The City shall maintain records pertaining to the Contractor's performance on contracts with the City. The Contractor shall be required to participate in performance assessment activities during or after the performance of the Contract. Contractor performance records may be used to determine a Contractor's responsibility, qualifications, and eligibility for the award of future contracts with the City.

SP 7. ALLOWANCES. If the City listed allowances in the Offer section, the Contractor shall coordinate all work covered under the allowance. No demand for expenses or profit other than these included in the Contract Basic Bid shall be allowed. Allowances shall be used with the approval of the Officer-in-Charge. Any balance shall remain with the City.

SP 8. EXHIBIT L. REPORT OF EQUIPMENT PURCHASED WITH CONSULTANT OR CONSTRUCTION CONTRACTS. The City will not require the use of Exhibit L: Report of Equipment Purchased with Consultant or Construction Contracts form. As a result, the following sections of the GENERAL CONDITIONS shall be modified:

A. Delete Section 4.5, Payments, item (a) in its entirety and replace with the following:

‘’(a) Payments will be authorized by the Director after completion of performance or delivery and acceptance by the Director of all materials, goods, and services stipulated in the contract or Purchase Order and after the invoices, in triplicate, are received by the using agency, Attention: Fiscal Officer. The invoices must list the following information: contract and confirmation purchase order numbers (if any), item numbers, description of items, quantities, unit prices, and extended totals. Payments will be computed in accordance with any applicable unit prices bid. Payments will be made as soon thereafter as the regular course of business will allow; provided, however, that payments shall be made no later than thirty (30) calendar days following receipt of the statement for goods received and services completed.’’

B. Delete Section 5.4.6, Payment for Delivered Materials or Equipment, items (a) and (b) in their entirety and replace with the following:

‘’ (a) No payment for any material or equipment that is affixed, movable or removable, delivered to the site of the work under the contract will be made until said material or equipment is incorporated into the parts of the project required to be constructed under the contract. Payment for the delivered material or equipment shall be included in the monthly progress payment under the appropriate cost item.

(b) Specialized or Special Ordered Materials, Equipment. The Officer-in-Charge may, to the extent provided for in the contract, include in the monthly estimate for progress payment the delivered cost of specialized materials, special ordered materials or equipment usable only for the contract. Such inclusion in the monthly estimate will be allowed only if all costs are substantiated by evidence of delivery and payment, and only for such materials or equipment as are specifically described or referred to in the contract as being the subject matter for such inclusion in the monthly estimate for progress payment. Payment to the Contractor shall not terminate the Contractor's responsibility or ownership of such materials or equipment until incorporated in place and accepted by the Officer-in-Charge. The Contractor shall be responsible for the safekeeping of such specialized materials or equipment until incorporated into the work and accepted by the Officer-in-Charge. The amount included for payment under this subsection shall be subject to the retention requirement.’’

C. Delete Section 5.4.7 Final Payment, items (a)(1) and (a)(2) in their entirety.

D. Delete Exhibit L Report of Equipment Purchased with Construction Contracts, in its entirety.

SP 9. INDEMNITY. Delete Section 2.10, Indemnity, of the GENERAL CONDITIONS in its entirety and replace with the following:

“2.10 Indemnity

The Contractor shall perform the work as an independent contractor and shall indemnify and hold harmless the City, its departments, and all of their officers, employees or agents, from any and all deaths, injuries, losses and damages to persons or property, and any and all claims, demands, suits, action and liability therefor including reasonable attorney fees and cost of defense, caused by error, omissions, negligence or willful or intentional misconduct in the performance of the contract by the Contractor or the Contractor's subcontractors, agents and employees, and this requirement shall survive the termination of contract.”

SP 10. ANTI-DISCRIMINATION. In accordance with Section 1-11 of the Revised Ordinances of Honolulu 2021, as amended, the Contractor shall not engage in discriminatory practices for any work provided under this Agreement. Discriminatory practices are practices that discriminate on the basis of a classification protected by any federal, State, or City law, including retaliation for opposing discrimination or participation in an investigation or proceeding that alleges discrimination.

SP 11. HAWAII BIDDER/OFFEROR PREFERENCE. If the Contractor is subject to the Hawaii Bidder/Offeror preference and fails to maintain the requirements of a Hawaii Bidder/Offeror throughout the entirety of contract, the Contractor shall be subject to a reduction of price equal to the value of the preference applied. The City may also pursue debarment of the Contractor pursuant to Hawaii Revised Statutes §103D-702. Any changes in eligibility shall be reported to the Officer-in-Charge.

At any time during the contract, the City may request the Contractor to provide sufficient documentation to the City to demonstrate full compliance with the Hawaii Bidder/Offeror preference. The documentation must be provided within the time stated in the request.

RFB-DDC-2071008

# BID SCHEDULE OF VALUES DATA

_____
Offeror's Legal Business Name

1. Each Offeror should submit with its Offer in a separate envelope identified on the outside by Offeror name, project name, and marked "Bid Schedule of Values Data", a breakdown of the overall bid showing the amounts included therein for the following work:

| | | |
|---|---|---|
| A. | Mobilization | $_____ |
| B. | Demolition | $_____ |
| C. | Hazardous materials abatement | $_____ |
| D. | Roofing, materials and installation | $_____ |
| E. | Flashing, counter flashing and coping, Materials and installation | $_____ |
| F. | Overflow scupper | $_____ |
| G. | Roof drains and downspout | $_____ |
| H. | Windows and glazing | $_____ |
| | TOTAL SUM BASIC BID | $_____ |

2. This information is required for analytical purposes and shall have no bearing upon the determination of the lowest responsive, responsible Offeror, and will not be divulged to the public at bid opening.

3. If a breakdown of the items listed under Item No. 1 is not provided with the offer, and if requested by the City, the Offeror shall provide this data within three (3) City business days.

4. The successful Offeror, upon request from the Officer-in-Charge, shall furnish a breakdown of the items listed under Item No. 1 above for Labor and Non-Labor cost.

# CONSTRUCTION SIGN BOARD

Revised March 6, 2023




NOTES:

1. Use 48"x 96" aluminum coated material (ACM), front side laminated to a solid black polyethylene core trim to final size of 47”x 95”.
2. UV print sign directly to on ACM.
3. Insert appropriate names and agencies only.
4. City and County Seal shall be integrated into sign and printed directly to sign.
5. Color:
   Background Color: White
   Border Color: as indicated.
6. Letter Point Size are as indicated.
7. Lettering Style: Arial Black
8. Lettering shall be black.
9. Phone number listing on construction sign shall be Contractor's phone number.
10. An editable electronic file will be provided to Contractor including the graphics and sample text for the construction sign by the Officer–in-Charge.
11. Include text at bottom of sign "This project funded in whole or in part with funds provided by the U.S. Department of Housing and Urban Development (HUD)" only when project has funding from HUD.

WORK REQUIRED: Fabricate and erect in place a complete construction sign board as shown by the above drawing.
A full scale colored electronic file proof of sign board with proper size, spacing and format as shown above should be submitted to the Officer-in-Charge.

ERECTION: Sign shall be erected at location, as directed by Officer-in-Charge, adequately braced on the rear side only. It shall be maintained in good condition throughout the progress of work.
When in the opinion of the Officer-in-Charge, there is a need to relocate the projects sign because of progress of work, or for other reasons, the relocation shall be done as directed without cost to the City.

COMPLETION: Upon completion of project, the sign shall be removed by the Contractor and disposed of as directed by the Officer-in-Charge without cost to the City.

1 Pantone Color and Point size indicated in RED



# DETAILED SPECIFICATIONS

## DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01010 – GENERAL REQUIREMENTS

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 APPLICABLE REGULATIONS: The Contractor shall comply with all local laws, ordinances, rules and regulations pertaining to such work and must obtain and pay for required permits, license and certificates and publish and post all notices required thereby.

1.03 DESCRIPTION OF WORK:

A. Scope of Work:

Gymnasium: Work shall involve the demolition and reroofing of the existing gymnasium at Kalihi Valley District Park. Building will be reroofed with a new SBS Modified Bitumen Membrane Roof system with all necessary accessories for a complete and weather-tight assembly. The work includes installation of a new roof structural decking, replacing roof eave purlins, reinforcement of existing eave purlins, replacement of metal fascia parapet wall panels, and repair of parapet wall truss. The work also includes replacement of corroded expanded-mesh ventilation panels at the eaves of the gymnasium. Along the exterior, decorative wood vertical members and wood beams are to be replaced; existing and new wood members and beams are to be painted to match the existing condition. Damaged existing wired glass panels to be replaced with impact grade polycarbonate clear panels.

B. These specifications are divided for convenience into titled divisions and sections as set forth in the TABLE OF CONTENTS preceding these specifications and shall not be considered an accurate or complete segregation of the several units of labor and materials. No responsibility, either direct or implied, is assumed by the City for omissions or duplications of the subject matter. The Contractor shall be held responsible for the complete work

whenever or wherever the parts are described in one or more trade heads. Any mention in these sections or indication on the drawings of articles, materials, operations, or methods required that the Contractor furnish each item so mentioned or indicated, of the kind, type, or design and quality of each item so mentioned or indicated on the drawings, and that the Contractor furnish all labor, materials, equipment, incidentals, and supervision necessary to complete the work in accordance with the drawings and the true meaning and intent of these specifications, even though such mention of articles, materials, operations, methods, quality, qualifications, or conditions is not expressed in complete sentences.

Where devices or items or parts thereof are referred to in the singular, it is intended that such references shall apply to as many such devices, items, or parts as are required to properly complete the work.

Schedule of work included in these specifications sections are given for convenience and shall not be considered as a comprehensive list of items necessary to complete the work of any section.

The Contractor shall employ the usual standard practice of coordinating the work covered in each section with the work of other sections. The necessary information and the items, accessories, anchors, connections, patterns, templates, etc., shall be delivered when required, in order to prevent any delay in the progress and completion of the work.

1.04 PLANS AND SPECIFICATIONS:

These specifications are intended to cover all labor, materials, and standards of workmanship employed in the work indicated on the plans and called for in the specifications or reasonably implied therein. The plans and specifications complement one another. Any part of the work mentioned in one and not represented in the other shall be done the same as if it had been mentioned or represented in both.

The Contractor shall not alter the drawings and specifications. In the event of any error or discrepancies, the Contractor shall immediately notify the Officer-in-Charge (OIC) for clarification and instructions.

All figured dimensions take precedence over scaled measurements. No important dimension shall be determined by scale.

Specifications and drawings are prepared in abbreviated form and may include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "a", "an", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

Phrase "or equal" shall mean "or approved substitute."

The term "Owner" shall mean "City."
The terms "Architect" or "Engineer" shall mean "Officer-in-Charge."

1.05 PARKS STANDARD DETAILS:

The plans and specifications make reference to the Parks Standard Details for Parks and Recreation Construction, of the Department of Parks and Recreation (DPR), City and County of Honolulu. The Parks Standard Details shall be applicable and incorporated and made a part of the contract.

The Parks Standard Details for Parks and Recreation Construction are available on-line at the City's website:

http://www.honolulu.gov

1.06 AS-BUILT DRAWINGS: The Contractor shall keep job site copies of the drawings and shall mark on one set, kept expressly for this purpose, all changes made or site conditions which differ from the contract set. Contractor shall stamp and sign each sheet of the complete set of contract drawings indicating it represent as-built condition. Contractor shall also submit an as-built specification set indicating specific products used and stamp and sign the cover sheet indicating as-built conditions.

1.07 OIC REVIEW AND ACCEPTANCE: OIC review and acceptance of all submittals and conditions shall be based on the information submitted and the visible condition observed. Acceptance shall be for general intent of the contract. Ultimate performance of the work or product to meet the contract requirements shall be the Contractor's responsibility.

1.08 EXISTING UTILITIES: Location of existing utilities and facilities shown are approximate only and are not guaranteed. The Contractor shall verify, in the field, the location of all existing utilities. The Contractor shall be fully responsible for any and all damages, injuries, deaths, expense, etc., to property, personnel and the public resulting from accidents to or from existing facilities and/or utilities.

Should existing utilities not shown on the plans be encountered in the field during the operation, the Contractor shall promptly notify the OIC for instructions. Failure to do so will make the Contractor liable for any and all damages arising from his operations. Upon the instructions of the OIC, the Contractor may be required to relocate or adjust the existing utilities. The Contractor shall not be compensated extra for any additional material required because of differences in location of existing utilities in the plan and in the field.

1.09 STORAGE OF MATERIALS, EQUIPMENT AND FABRICATING AREAS: Storage of materials, equipment and fabricating areas will not be permitted at the project sites.

1.10 RESTORATION OF EXISTING AREAS: All existing areas disturbed or damaged due to construction or ingress and egress to the site shall be repaired to match the existing. Restoration and maintenance of all affected areas shall be the Contractor's responsibility, including areas beyond construction limits. Lawn areas shall be re-cultivated, top soiled and then re-grassed. Other damaged areas shall be repaired with the same kind and type of material.

All restoration work shall conform to the applicable provisions of the DPR Standard Specifications for Landscaping, herein attached and the respective sections of the Standard Specifications of the Department of Public Works referred to herein. All costs for the restoration work shall not be paid for directly but shall be considered incidental to the various items of the work.

1.11 REFERENCE STANDARDS AND ABBREVIATIONS: All work shall be done in accordance to the most current standards listed in the Special Provisions, Detailed Specifications, DPR Standard Specifications (not physically attached), and below as amended and/or amplified herein:

ASA: American Standard Association.

ASTM: American Society of Testing and Materials.

AISC: American Institute of Steel Construction.

ACI: American Concrete Institute.

ADA: Americans with Disabilities Act – Accessibility Guidelines for Buildings and Facilities.

GC: General Terms and Conditions, City and County of Honolulu.

BC: Latest approved building, electrical, plumbing and energy codes of the City and County of Honolulu.

SS: Standard Specifications for Public Works Construction, Department of Public Works, City and County of Honolulu.

SD: Standard Details of the Department of Public Works, City and County of Honolulu, dated September 1984, including Plumbing Codes for the City and County of Honolulu.

BWS: Board of Water Supply, City and County of Honolulu, Water System Standards, Vol. 1, and Approved Material List and Standard Details for Water System Construction, Vol. 2, dated 2002, and Water System External Corrosion Control Standards, Vol. 3, dated 1991. Do all work in accordance with the above standards as amended and amplified herein.

OIC: The Director of the Department of Design and Construction or a representative of the Director acting within the scope of the duties and authority assigned and delegated to him as such representative.

DDC-CI: Department of Design and Construction, Construction Inspector.

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01015 – CONTRACTOR USE OF PREMISES

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SPECIAL NOTICE:

A. The Contractor will submit a request to the Officer-in-Charge, when he determines that sufficient materials are available at the job site for this work to begin without any break in the construction period to wait for delivery of additional items. No onsite work will begin until the Officer-in-Charge concurs and approves this request from the Contractor. Once on site work commences, the Contractor, if need be, shall air freight at his own cost, all materials and equipment needed at the jobsite in order to complete the work within the project completion time.

B. Within twenty-five (25) calendar days of the date that work is projected to start at the job site, the Contractor shall submit for approval, a performance schedule to include all construction and phasing activities related to this project, to the Officer-in-Charge, as required by paragraph (e) Payment and Performance Schedules, Item 5. Performance, Chapter 5 – Construction Contract Provisions Supplement of the General Terms and Conditions, City and County of Honolulu. This schedule shall clearly identify when temporary utility connections will occur and/or when City operations shall be affected.

All Contractors must be familiar with the project site and familiarize themselves with existing conditions and the amount and kind of work to be performed relating to methods of construction and labor under which the work will be performed.

Unless otherwise specifically indicated, it is the intent of this project that all City functions shall continue during this construction contract. These City functions include, but are not limited to activities such as park programs, public safety functions such as police, fire,

ambulance, performance events such as those at the Blaisdell Center, and public service offices such as for real property, road maintenance, City administration, satellite city halls, etc.

The Contractor must employ whatever reasonable methods and means necessary to carry out his work so as not to cause any objectionable interruption or interference to the normal operations of the City and County of Honolulu. The Contractor shall schedule its objectionable operations to be performed during City's non-working hours at no additional cost to the City. Objectionable operations are work that causes interruption and interference to the normal operations of the City and may include (1) scheduled events, (2) demolition work, (3) work such as drilling, grinding, tamping, and saw cutting and/or using equipment emanating loud noise, (4) non-containable dust inducing operations, and (5) use of liquid that emits offensive and/or irritating odor or fumes. The Contractor shall include in his total lump sum bid all additional costs related to the foregoing matter. The Contractor shall not be required to pay for the cost of inspection for overtime work during non-working hours that the City requests the Contractor work because of objectionable operations. All other costs of inspection for overtime work shall be paid for by the Contractor.

C. Contractor shall maintain a safe passageway to and from the building for the City and County personnel and the public at all times.

D. Contractor shall call the Construction Management Branch of the Facilities Division, Department of Design and Construction, telephone number 768-8457, and give five (5) working days notice before starting any work.

1.03 PROTECTION OF PROPERTY: The Contractor shall continually maintain adequate protection of all his work from damage and shall protect all property at the project site, including buildings, equipment, furniture, grounds, vegetation, materials, utility systems located at the job site, etc. The Contractor shall repair, replace or pay the expense of repair or damages resulting from his fault or negligence.

PART 2 – PRODUCTS (NONE)

PART 3 – EXECUTION (NONE)

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01035 – CONSTRUCTION PROJECT PROCEDURES

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 NOTICE TO PROCEED FOR CONSTRUCTION:

In accordance with paragraph 5.2.2 Commencement Requirements, Chapter 5. Construction Contract Provisions Supplement, of The General Terms and Conditions, City and County of Honolulu, it is the intent of the City to issue a Notice to Proceed (NTP) within six (6) months of execution of the construction contract.

Reference also, Paragraph 3 of the OFFER, relating to the construction period for the construction contract.

1.03 MATERIAL SUBMITTALS: Upon issuance of the NTP, the Contractor shall immediately begin processing submittals of shop drawings, catalog cuts, samples, etc., for approval.

### PART 2 – PRODUCTS (NONE)

### PART 3 – EXECUTION

3.01 INSTALLATION: Unless otherwise noted, all installation/application of equipment/material shall be done in accordance with manufacturer's written instructions and recommendations. All equipment shall include operation and maintenance manuals.

3.02 INSTRUCTIONS: Instruct the Officer-in-Charge or representative in the proper operation and maintenance of the following equipment or systems:

A. SBS Modified Bituminous Membrane Roofing.

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01051 – GRADES, LINES, AND LEVELS

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 WORK INCLUDED: To furnish all labor, materials and equipment necessary to lay out the entire work and verify all dimensions and elevations, all as shown on the drawings and as specified herein.

A. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.

B. Obvious conditions of the site existing on the date of the bid opening 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 there from.

### PART 2 – PRODUCTS (NONE)

### PART 3 – EXECUTION

3.01 LAYING OUT: The laying out of base lines for the entire work shall be done by the Contractor, and he shall be solely responsible for their accuracy.

3.02 VERIFY DIMENSIONS AND ELEVATIONS: The Contractor shall verify all dimensions and elevations as shown on the drawings. In accordance with paragraph 5.2.2.l Surveys and Construction Stakes, Lines & Grades, Chapter 5. Construction Contract Provisions Supplement, of the General Terms and Conditions, City and County of Honolulu, the Contractor shall notify the Officer-in-Charge in writing immediately upon discovery of any error, omission, or discrepancy in the layout work.

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01060 – REGULATORY REQUIREMENTS

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 LICENSED OFFERORS:

All prospective offerors must hold a current A or B contractor's license from the State of Hawaii. No offer will be accepted from any unlicensed offeror.

Please also note in the Offer, the requirement for listing of all joint contractors or subcontractors.

PART 2 – PRODUCTS (NONE)

PART 3 – EXECUTION (NONE)

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01300 – SUBMITTALS

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUBMITTALS:

A. Substitution of Materials and Equipment: Substitution requests shall be in accordance with Paragraph 2.18(b) Request for Substitution, Chapter 2.0 SOLICITATION, of the General Instructions to Offerors.

B. Shop Drawing/Material Submittal:

1. Submittal Schedule: Submit two (2) copies of schedule. Arrange the following in tabular format:

a. Scheduled date for submittal

b. Specification Section number and title

c. Description of work covered

d. Scheduled date for City's final release and approval

2. Submittal Identification:

   a. To avoid rejection and to expedite each submittal, the General Contractor shall have a rubber stamp made up in the following format:

      (JOB TITLE)
      (JOB NO.)

      THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR AND IS CERTIFIED CORRECT AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS

      SUBMITTAL # _____
      SPEC. SEC. # AND NAME _____
      SUBCONTRACTOR NAME _____
      SUPPLIER NAME _____
      MANUFACTURER NAME _____

      _____
      CONTRACTOR'S NAME

      CERTIFIED BY _____
      (Contractor's Signature)

   b. This stamp "filled in" should appear on the title sheet of each shop drawing, on a cover sheet of the submittals in an 8 ½" x 11" format or on one face of a cardstock tag (minimum 3" x 6") tied to each sample. The tag on the samples should state what the sample is so that if the tag is accidentally separated from the sample, they can be matched up again. The back of this page will be used by the Officer-in-Charge for his receipt, approval, and log stamp and for any comments that relate to the sample.

3. Submittal Format: Submittals shall be transmitted with a letter in the format as shown on the attached submittal sample at the end of this section. All non-applicable data shall be blocked out and minor deviations from specifications and plans shall be clearly marked and justified. Unless otherwise indicated in the applicable specification sections, the Contractor shall present the submittal items according to the following:

a. Certification of Compliance: The original and two (2) copies of the signed manufacturer's certificate indicating compliance to the provisions of the specifications and certifying that the material does not contain asbestos. The Certificate of Compliance shall be on an 8½" x 11" sheet.

b. Product Data: Six (6) copies of product data, such as a manufacturer's data, Manufacturer's Safety Data Sheet (MSDS) and catalog cuts that indicate conformance to the provisions of the specifications regarding materials, appearance, and finishes. Product data shall conform to an 8½" x 11" format.

c. Samples: Three (3) samples of each material as indicated in the applicable specification sections. Samples required by specification sections for color, texture, or finish selection and/or approval, shall be no smaller than 3" x 3" and of the actual material to be used. Catalog cuts, photographs, or otherwise "similar" representations are not acceptable submittals.

   Each sample shall be properly labeled, cross-referencing the specification item; as well as planned location (i.e., New Weight Room, etc.).

d. Shop Drawings: Ten (10) prints of drawings indicating how specific portions of the work are to be fabricated or installed by the Contractor. Drawings are either confirmation of conditions detailed in the construction documents, clarification, or planned conditions not readily indicated in the construction documents, that maintain the design intent. Shop drawings shall be cross-referenced to corresponding items in construction documents. As much as possible, shop drawings should conform to an 8 ½" x 11" format (i.e., capable of being folded to 8 ½" x 11" for filing), but in no case shall exceed 24" x 36" size sheets.

e. Guarantee/Warranties: The original and three (3) copies of a written guarantee, signed as directed in the applicable specification section, for the scope of work and duration indicated in the applicable specification section. Unless otherwise indicated in the applicable specification section, guarantee periods shall be for one (1) year and start at the time of acceptance by the City. Guarantees shall conform to an 8 ½" x 11" format.

f. Test Reports: Six (6) copies of test reports for any material used in this contract shall be submitted when specified or required by the Officer-in-Charge.

g. Maintenance Data and Operating Instructions: Six (6) copies of maintenance data and operating instructions shall be submitted at the conclusion of the equipment installation. The manual shall include instructions for operating, maintenance, repair, recommended inspection points and periods for inspection in a practical, complete, and comprehensive manner. The information shall be arranged in a logical, orderly sequence, including a general description of the equipment and significant technical characteristics. Tests, adjustment, and calibration information shall include illustrations, diagrams, and step-by-step procedures.

4. Electronic Submittal Format: Electronic submittals may be made at the discretion of the Officer-in-Charge. The intent of the Electronic Submittal Format is to expedite the construction process; therefore it is at the discretion of the Officer-in-Charge to eliminate the Electronic Format if at any time the process is not a benefit to the project. Requirements of the Electronic Submittal shall adhere to the format requirements above and to the following:

   **a. Electronic submittals are to be sent as a single file.**

   **b. 8 ½”x11” and 11”x17” format submittals are the only allowed Electronic Submittal.**

   c. Submittals shall be transmitted with the Submittal Identification and a letter as shown on the attached submittal sample at the end of this section.

   d. Submittals are to be transmitted via email; File Transfer Protocol (FTP) transmissions are not acceptable. Compressed file formats such as “ZIP” files are not allowed. Attachment file sizes shall not be larger than 20 megabytes (mb). It is the responsibility of the Sender (entity sending the Electronic Submittal) to confirm the receiving entity has received the Electronic Submittal. The Officer-in-Charge will provide email addresses of persons authorized to receive emailed submittals.

e. The Electronic Submittal Format process is not intended for the Certification of Compliance, Samples, Guarantee/Warranties and the Maintenance Data and Operating Instructions submittals.

1.03 AS-BUILT DRAWINGS: The Contractor shall maintain at the job site two (2) sets of full-size contract drawings, marking them in red to show all variations between the construction actually provided and that indicated or specified in the contract documents, including buried or concealed construction. Where a choice of material or method is permitted herein or where variations in scope or character of work from that of the original contract are authorized, the drawings shall be marked to define the construction actually provided. Where equipment installation is involved, the size, manufacturer's name, model number, power input or output characteristic applicable shall be shown on the as-built drawings.

The representation of such change shall conform to standard drafting practice and shall include such supplementary notes, legends, and details as necessary to clearly portray the as-built construction. If drawings are prepared on Computer Aided Drafting (CAD) system, drawings are to be prepared using software compatible with the City and County of Honolulu, Department of Design and Construction, Facilities Division software, review with Officer-In-Charge. The file shall be provided to the City on compact disks (CD).

The drawings shall be maintained and updated on a daily basis. The Contractor shall stamp, sign, and date each sheet with the following stamp:

AS-BUILT DRAWINGS

This certifies that the dimensions and details shown on this sheet reflect the dimensions and details, and specifications as constructed in the field.

_____

CONTRACTOR'S NAME

_____

Signature Date

Monthly and final payments to the Contractor shall be subject to prior approval of these drawings. Upon completion of the work, both sets of marked-up drawings shall be delivered to the Officer-in-Charge and shall

be subject to the approval of the Officer-in-Charge before acceptance of the project shall be considered.

1.04 COMPLETION FOLDER: Upon completion of the work, the Contractor shall deliver to the Officer-in-Charge three (3) sets of a completion folder containing the information listed below. The listed items may be requested elsewhere and shall be in addition to that request.

A. Project Personnel – A listing of the Contractor's personnel and position.

B. Subcontractor/Vendor – A listing of the subcontractors and vendors and work description.

C. Emergency Notification – A listing of persons to call for emergency.

D. Guarantees – A copy of guarantees and warranties.

E. Equipment – An inventory listing of the equipment.

F. Instruction/Operation Manuals – A listing of the instruction and operation manuals provided.

G. Additional Material – A listing of the additional project material (paint, carpet, etc.), quantity, and location material delivered to.

(SHOP DRAWING/MATERIAL SUBMITTAL – SAMPLE)

DATE: _____

Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Director:

Subject: _____

_____

We herewith submit for your approval the following item(s) for the subject project:

| NO. OF COPIES | ITEM | SUPPLIER OR SUBCONTRACTOR |
|---|---|---|

Your early review and approval of the above item(s) will be greatly appreciated.

_____
SIGNATURE

NOTE: 1. Please use own letterhead.
2. Submit original and two (2) copies of letter.

PART 2 – PRODUCTS (NONE)

PART 3 – EXECUTION (NONE)

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01450 – SERVICE OF MANUFACTURER'S REPRESENTATIVE

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SCOPE: The services of the Manufacturer's Representative shall be required for the products as called for in other sections of these specifications.

1.03 RELATED WORK: Individual requirements are described in pertinent other sections of these specifications.

1.04 QUALITY ASSURANCE: The Manufacturer's Representative shall be competent, thoroughly trained and experienced in the work and shall be completely familiar with the product or equipment, the specified requirements and the methods needed for the proper performance of the product or equipment.

1.05 SUBMITTALS:

A. Qualifications: Submit, if requested by the Officer-in-Charge, the qualifications and experience of the Manufacturer's Representative.

B. Report: Submit a written report by the Manufacturer's Representative attesting that the product or equipment was installed in accordance with the Manufacturer's instructions and that the City's personnel have been properly instructed in its operation and/or maintenance.

1.06 GENERAL REQUIREMENTS: Obtain the Manufacturer's Representative service and be responsible for the Manufacturer's Representative.

### PART 2 – PRODUCTS (NOT APPLICABLE)

## PART 3 – EXECUTION

### 3.01 SERVICES OF MANUFACTURER'S REPRESENTATIVE

A. The Manufacturer's Representative shall be present as often as he deems necessary to assure the proper performance of the product or equipment.

B. The service for the product or equipment shall include but not be limited to:

1. Inspection: Examine the areas and conditions under which the product or equipment is to be installed and report to the Contractor any unsatisfactory conditions for corrections by the Contractor.

2. Preparation: Check for defects and completeness of product, equipment, and parts.

3. Tests: Test any condition, which may affect the performance of the product or equipment.

4. Installation: Render assistance to the Contractor as required and ensure that manufacturer's installation instructions are being understood and followed.

5. Instructions to Personnel: Instruct the operating personnel in the aspects of installed product maintenance.

6. Operations and Maintenance Manual: Demonstrate the contents of the operations and maintenance manual if required to be submitted under Section 01300 – SUBMITTALS.

7. Follow-Up: Provide follow-up service in case of problems involving product related to possible product failure, incompatibility with other products or conditions, or maintenance problems during guarantee time.

END OF SECTION

# DIVISION 1 – GENERAL REQUIREMENTS

## SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY UTILITIES

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SECTION INCLUDES:

A. Temporary Utilities: Electricity, lighting, ventilation, telephone service, water, and sanitary facilities.

B. Temporary Controls: Barriers, fencing, protection of the work, security and temporary fire protection.

C. Construction Facilities: Access, parking, and progress cleaning.

1.03 REFERENCE: HIOSH-Occupational Safety and Health Standards, State of Hawaii.

1.04 REGULATORY REQUIREMENTS: Comply with DOSH, including but not limited to Part 3 – Construction Standards.

1.05 TEMPORARY VENTILATION: Ventilate enclosed areas to assist cure of materials to dissipate humidity, and to prevent accumulation of dust, fumes, and vaporous organisms.

1.06 SANITARY FACILITIES:

A. Temporary Toilet Facilities: Contractor may use the public toilet within the building.

1.07 BARRIERS:

A. Provide barriers, covers and flashers to prevent unauthorized entry to construction areas and to prevent existing facilities and adjacent properties from damage from construction operations.

B. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

C. The Contractor shall take precaution to protect people and property from injury and damage. Contractor shall augment the barricades as required to delineate the work areas and provide the appropriate signage and hazard lights, as directed by the Officer-in-Charge. Signs shall be neat, enamel painted and fabricated by personnel normally engaged in the sign industry.

D. The Contractor shall be responsible for Contractor's security and protection of Contractor's property, including mobilization yard barriers.

E. Provide protection for plant life designated to remain. Replace damaged plant life.

F. Barricades, in general, shall be neat, as required for protection and adequately anchored and braced.

1.08 PROTECTION OF INSTALLED WORK:

A. Protect installed work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.

1.09 SECURITY: Provide security and facilities to protect work from unauthorized entry, vandalism, or theft.

1.10 TEMPORARY FIRE PROTECTION: Provide fire protection and prevention in accordance with DOSH, Chapter 113.

1.11 ACCESS AND PARKING AREAS:

A. Access: Arrange Contractor's access to project site with the Officer-in-Charge and make changes as work progresses.

B. Parking: Contractor's employees, agency and subcontractors and their employees, shall make their arrangements for parking with the Officer-in-Charge. Contractor and their subs may need to find additional parking on the street-metered stalls.

1.12 STAGING AND WORK AREAS: There will be a limited, confined staging area in the proximity of the jobsite, provided by the City.

1.13 PROGRESS CLEANING AND WASTE REMOVAL:

A. Comply with the General Terms and Conditions.

B. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly fashion.

C. Remove debris and rubbish from pipe chases, and other closed or remote spaces, prior to enclosing space.

D. Clean areas prior to start of surface finishing, and continue cleaning to eliminate dust.

E. Contractor shall remove waste materials, debris, and rubbish from the site daily and legally dispose off-site, or as requested by the Officer-in-Charge.

F. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS:

A. Remove temporary utilities, equipment, facilities, and materials prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

# DIVISION 1 - GENERAL REQUIREMENTS

## SECTION 01533 - BARRICADES

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 DESCRIPTION OF WORK: Provide barricades as required, and as acceptable to the Officer-in-Charge (OIC), to prevent people from entering the project area and to protect enclosed property.

1.03 GENERAL REQUIREMENTS:

A. The Contractor shall take precaution to protect people and property from injury and damage. The Contractor shall augment the barricades as required to delineate the work areas and provide the appropriate signage and hazard lights, as directed by the OIC. Signs shall be neat, enamel painted and fabricated by personnel normally engaged in the sign industry.

B. The Contractor shall be responsible for their own security and protection of their property, including mobilization yard barricades.

C. Barricades, in general, shall be neat, as required for protection and adequately anchored and braced.

D. Security shall be maintained against access onto the work areas at all times except the Contractor shall allow for authorized City personnel.

## PART 2 – PRODUCTS (NONE)

## PART 3 – EXECUTION (NONE)

END OF SECTION

# DIVISION 1 - GENERAL REQUIREMENTS

## SECTION 01560 - ENVIRONMENTAL CONTROLS

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 ENVIRONMENTAL PROTECTION: With the exception of those measures set forth elsewhere in these specifications, environmental protection shall consist of the prevention of environmental pollution as the result of construction operations under this contract. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, affect other species of importance to man, or degree the utilization of the environment for aesthetic and recreational purposes.

1.03 APPLICABLE REGULATIONS: In order to provide for abatement and control of environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with the intent of the applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement, including, but not limited to, the following regulations:

1. State of Hawaii, Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL; Chapter 54, WATER QUALITY STANDARDS.

2. State of Hawaii, Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY; Chapter 60.1, AIR POLLUTION CONTROL LAW.

3. State of Hawaii, Department of Health, Administrative Rules, Chapter 42, VEHICULAR NOISE CONTROL; Chapter 46, COMMUNITY NOISE CONTROLS.

4. Other regulations as noted on the drawings.

## PART 2 - PRODUCTS

NONE

## PART 3 - EXECUTION

### 3.01 AIR POLLUTION CONTROL:

A. Emission: The Contractor shall not be allowed to operate equipment and vehicles that show excessive emissions of exhaust gases until corrective repairs or adjustments are made, as determined by the Officer-in-Charge.

B. Dust: The Contractor, for the duration of the contract, shall maintain all excavations, haul roads, permanent access roads, plant sites, waste disposal areas, borrow areas, and all other work areas within or without the project limits free from dust which would cause a hazard to the work, or the operations of other contractors, or to persons' property. Contractor shall also control dust occurring from construction activities such as rough grading and grinding/cutting concrete or masonry. Industrial-accepted methods of stabilization suitable for the area involved, such as sprinkling or similar methods will be permitted. Chemical or oil treating shall not be used.

C. Burning shall not be permitted.

### 3.02 WATER POLLUTION CONTROL:

A. Wastes: The Contractor shall not deposit at the site or in its vicinity, solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage and other pollutants, which may contaminate any surface water or ground water.

B. Spillages: Care shall be taken to ensure that no petroleum products, bituminous materials, or other hazardous substances, including debris, are allowed to fall, flow, leach, or otherwise enter any surface or ground water.

C. Erosion: Contractor shall provide any necessary temporary drainage, dikes, and similar facilities to prevent erosion damage to the site. Run-off shall be controlled to prevent damage to surrounding area.

### 3.03 DISPOSAL:

A. Construction waste, such as crates, boxes, building materials, pipes and other rubbish shall be disposed of at the County Disposal areas. Large size objects shall be reduced to a size acceptable by the County Specifications. Other areas or methods proposed by the Contractor will be approved only if the Officer-in-Charge determines that their effect on the environment is equal to or less than those described herein.

B. Removal of wastes shall be a continuous on-going operation. Wastes and debris shall not be allowed to accumulate in large open piles.

C. Wind-blown wastes and debris shall be collected by the Contractor and disposed as described above.

END OF SECTION

# DIVISION 1 - GENERAL REQUIREMENTS

## SECTION 01715 – EXISTING CONDITIONS – ASBESTOS / LEAD/ HAZARDOUS MATERIAL SURVEY

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY:

This section includes the results of the City's survey for Asbestos and Lead materials and is provided for the Contractor's information.

Related work:

1. Section 13283 - Disturbance of Lead-Containing Material
2. Section 13288 - Testing / Air Monitoring

1.03 ASBESTOS:

A. The structure or structures to be renovated or modified under this contract were surveyed for the presence of asbestos containing building materials (ACBM), using AHERA requirements. A copy of the initial survey report, as well as any subsequent supplemental survey report(s) if performed, are included in this Section.

The report(s) are included, even when no ACBM was found, for the Contractor's information. Review the attached report(s) for the basis on which the negative ACBM finding was made. Contractor may perform further surveys at its own expense, only if ACBM has not been previously surveyed in accordance with H.A.R. 11-501 (or H.A.R. 11-502 when applicable) requirements within the Contract limits and only with approval of the Officer-in-Charge. If ACBM is found, notify the Officer-in-Charge immediately. The State will reimburse the Contractor for the testing cost if ACBM is found. Contractor shall not test any suspect ACBM previously tested.

If there is ACBM outside of the areas in which work will be performed, this ACBM 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 29 CFR 1926.1101.

C. In the event work is required in any building or buildings on the site other

than the one(s) designated within this project scope, request copies of the asbestos survey report(s) for such building(s) from the Officer-in-Charge 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, Officer-In-Charge and/or City, Department of Design and Construction, Project Manager must decide to perform additional hazardous materials survey as soon as practicable.

1.04 LEAD PAINT:

A. Inform employees, Subcontractors and all other persons engaged in the project that lead containing paints (LCP) is present in the existing building(s) and at the job site. Conduct work in accordance with the requirements of Occupational Safety and Health Administration 29 CFR 1926.62 Lead.

B. Review the attached lead testing data which identifies locations where LCP was found and ensure that all workers that need to be involved understand the contents of the report(s) referring to areas in which work is to be performed. Contractor must understand that lead testing was for design purposes only, and the results do not satisfy any of the requirements of Occupational Safety and Health Administration 29 CFR 1926.62 Lead.

C. All paint shall be considered to contain lead and treated as such until proven otherwise.

## PART 2 - PRODUCTS

NONE

## PART 3 - EXECUTION

3.01 SURVEY attached

A. The reports listed below shall be used for informational purposes as it relates to the project limits as indicated in the Contract Plans and Specifications. Information included in the reports which are not included within the project limits as indicated in the Contract Plans and Specifications shall not be included as part of the Contractor's work.

1. Project Specific Asbestos and Lead Paint Survey and Arsenic Survey Report, Kalihi Valley Gym Reroof, 62 pages, dated July 18, 2023, prepared by EnvironMETeo Services, Inc.

END OF SECTION

EnvironMETeo Services, Inc.
Environmental / Industrial Health & Safety

# Project Specific Asbestos, Lead Paint, and Arsenic Survey Report

## For:

**RMA Architects, Inc.**
**1150 South King Street, 8th Floor**
**Honolulu, Hawaii 96814**

## Facility Surveyed:

**Upper Roof**
**Kalihi Valley Gym**
**1911 Kamehameha IV Road**
**Kalihi, Hawaii 96819**

## Project:

**Kalihi Valley Gym Reroof**

## Conducted by:

**EnvironMETeo Services, Inc. (EMET)**
**94-520 Uke'e Street, Suite A**
**Waipahu, Hawaii 96797**

**Date of Report: July 18, 2023**

**EMET ID: 2303125**

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EnvironMETeo (EMET) Services, Inc. Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200
(808) 671-8383…Telephone emet@emetservices.com...E-mail

## Certification of Report

We certify that this report is based on a physical survey of EMET scope of work areas as impacted by this project at Kalihi Valley Gym, located at Kalihi District Park, 1911 Kamehameha IV Road, Honolulu, Hawaii. The survey included an inspection for asbestos-containing materials (ACM), lead paint on surfaces/building components, and arsenic-containing material.

The survey was conducted by EnvironMETeo Services, Inc. (EMET) on June 21 and 26, 2023 and was limited to the following scope of work:

**Asbestos/Lead Paint/Arsenic Investigation**

1. Inspection, evaluation, and sample collection of suspect asbestos-containing materials by EPA-accredited inspectors in accordance with H.A.R. 11-501 from the following:

   **Kalihi Valley Gym**

   - upper roof
   - interior ceiling and walls at underside of upper roof

2. Lead paint inspection by EPA-accredited inspectors from the areas indicated in item 1.

3. Arsenic testing of canec-like fiberboard roof insulation material if accessible

The survey results are based on analyses of samples of suspect materials collected from visually and physically accessible areas/materials.

Bulk samples of suspect asbestos-containing materials taken during the survey were analyzed for asbestos content by a National Institute of Standards and Technology (NIST) accredited laboratory under the National Voluntary Laboratory Accreditation Program



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(NVLAP) for asbestos fiber analysis. Laboratory analyses performed by Polarized Light Microscopy (PLM) for asbestos identification are in accordance with U.S. Environmental Protection Agency (EPA) Test Method 600/R-93/116.

Painted surfaces were tested for lead concentrations using an X-Ray Fluorescence (XRF) spectrum analyzer, a testing methodology approved by the EPA and the U.S. Department of Housing and Urban Development (HUD). Canec-based materials were also tested for arsenic content using an XRF analyzer.

EMET makes no warranty and assumes no liability for the inappropriate use or misuse of this document.



Joseph Custino
Asbestos Building Inspector
Hawaii State Certification # HIASB-1094
Lead Based Paint Risk Assessor
Hawaii State Certification # PB-0667



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## Summary

EnvironMETeo Services, Inc. (EMET) conducted a survey for asbestos-containing materials (ACM), lead paint on surfaces/building components, and arsenic in roof fiberboard insulation at Kalihi Valley Gym, located at 1911 Kamehameha IV Road, Honolulu, Hawaii, on June 21 and 26, 2023. Joseph Custino of EMET conducted the survey in accordance with Hawaii Administrative Rules (H.A.R) 11-501 and EMET's scope of work. The survey was requested and authorized by Brent Tokita of RMA Architects, Inc. and was performed in preparation for planned renovations.

This report is for informational purposes only and should only be used as such. This report is not a specification and should not be used as such.

Asbestos Summary

Based on the visual inspection and laboratory results, ACM was not detected

Lead Paint Summary

Based on XRF test results, lead-based paint (LBP) was not detected on the painted surfaces and components.

The following painted surfaces contain lead in a concentration of less than 1.0 mg/cm$^2$. The paints on theses testing combinations are lead-containing paint (LCP).

**Interior LCP**

| | |
|---|---|
| metal security screens | CMU walls |
| concrete beams | - |

**Exterior LCP**

| | |
|---|---|
| metal flashings | metal wall panels |



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Paint on testing combinations similar to those identified with LCP should also be treated as LCP.

Some of the painted surfaces tested using the XRF analyzer may have paint with lead at concentrations below the instrument level of detection (0.01 mg/cm$^2$).

Workers disturbing paint which may cause exposure to airborne lead must abide by the OSHA Lead in Construction standard.

Arsenic Summary

Arsenic was not detected in the roofing fiberboard insulation.

## Asbestos-Containing Material

The State of Hawaii, OSHA, and EPA define ACM as any material containing more than one percent asbestos by area. This definition can be found in the following regulations:

- Hawaii Administrative Rules (HAR), Title 11, Department of Health, Chapter 501 (11-501), *Asbestos Requirements.*

- 29 CFR 1926.1101 Occupational Safety and Health Administration (OSHA), *Asbestos Standards for the Construction Industry.*

- EPA 40 CFR Part 61, Subpart M - National Emission Standards for Hazardous Air Pollutants (NESHAP), Final Rule revised July 20, 2004, *National Emission Standard for Asbestos.*



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## Asbestos Bulk Sampling

A total of 33 samples of suspect ACM were collected and analyzed. The samples were placed in plastic containers with a unique identification number assigned to each sample and entered on a field data sheet. The sample locations were indicated on the field drawings shown in Appendix B.

Samples were collected of the following observed suspect asbestos-containing material:

### 2nd Floor Suspect ACM

| | |
|---|---|
| brown spray-applied acoustical ceiling material | transite wall panel |

### Upper Roof Suspect ACM

| | |
|---|---|
| black weather membrane built-up roofing system | off-white roof coating |
| white caulking at parapet wall seams | light gray caulking at metal wall flashing |
| red caulking at exhaust fan | gray-black patch/sealant |
| black patch/sealant | - |

## Asbestos Analyses

Bulk samples were analyzed for asbestos using Polarized Light Microscopy (PLM) for the identification of asbestos, in accordance with EPA Test Method 600/R-93/116. Laboratory analytical data sheets are provided in Appendix A.

Based on the visual inspection and laboratory results of the samples collected, ACM was not identified as a result of this survey.



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## Lead Paint

U.S. Department of Housing and Urban Development (HUD) *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, 2012 Edition, defines lead-based paint (LBP) as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter ($mg/cm^2$). The concentration 1.0 $mg/cm^2$ is equivalent to 5000 parts per million (ppm) and 0.5 percent weight (% wt.). EPA regulation 40 CFR Part 745 *Lead-based Paint Activities* similarly defines LBP as stated in HUD regulations.

OSHA regulates any activity disturbing paint that contains lead (referred to as lead-containing paint or LCP), even if the lead content is below the EPA/HUD standard for lead-based paint.

XRF test results of painted surfaces equal to or greater than 1.0 $mg/cm^2$ are defined as LBP in accordance with EPA and HUD regulations.

## Lead Paint Sampling and Analyses

Painted surfaces were analyzed for lead using an XRF analyzer. A total of 39 analyses of painted surfaces/building components and calibrations were performed. A unique identification number was assigned to each test location and entered on a field data sheet. The ID number, location, description, and lead concentration of each sample is indicated in the XRF analyzer test results, which are provided in Appendix C.

The test results indicate that LBP was not detected in paints on the tested painted surfaces.

The paints on the following tested surfaces/building components are confirmed to contain lead in concentrations of less than 1.0 $mg/cm^2$. The paints on these surfaces LCP. Testing combinations similar to those identified with LCP should also be treated as having LCP.



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Workers disturbing paint which may cause airborne exposure to lead must abide by the OSHA Lead in Construction standard.

**LCP Details**

| Location | Testing Combination Component/Substrate | Condition | Color |
|---|---|---|---|
| 2nd floor interior | security screen / metal | peeling | gray |
| 2nd floor interior | wall / CMU | fair | cream |
| 2nd floor interior | beam / concrete | fair | cream |
| exterior | wall panel / metal | intact | beige, brown |
| upper roof | flashing / metal | poor | pale beige |

Some of the painted surfaces tested may have paint with lead at concentrations below the instrument level of detection (0.01 mg/cm$^2$).

Painted surfaces may vary in paint type, color, and condition. Any damaged painted surfaces may vary significantly from area to area in terms of the condition and degree of damage. The results provide the lead content of all paint layers in a tested surface, as there may be more than one layer of paint on the tested surface.

## Arsenic in Canec-Based Materials

A field portable XRF instrument was used to determine concentrations of arsenic in canec-based building components. Possibly canec-based fiberboard insulation was observed on the upper roof.

Arsenic concentrations are summarized in the table below.



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**Arsenic Results**

| Sample Description | Location | Arsenic (ppm) |
|---|---|---|
| fiberboard insulation | throughout upper roof under roofing membrane | <LOD* |

* <LOD designates an arsenic concentration below the XRF instrument's level of detection of 10 parts per million.

The arsenic bulk laboratory report is provided in Appendix D

## Limitations

This hazardous materials survey was performed to identify suspect materials in areas scheduled for planned renovations. Original building plans and specifications and those for past renovations, if any, were not available for review.

Because of these limitations, the highly variable nature of building construction, and the limits to the survey as defined by EMET's scope of work, the potential remains for undiscovered hazardous materials.

This report is for informational purposes only and should only be used as such. This report is not a specification and should not be used as such.



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# Appendix A

Asbestos Survey Report



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(808) 671-8383…Telephone emet@emetservices.com...E-mail

# Building Information Sheet

| Job Code /EMET ID | Client Name | Inspection date |
|---|---|---|
| 2303125 | RMA Architects, Inc. | 6/21/2023, 6/26/2023 |

| Building Number | Building Name | No. of Floors Surveyed |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 1 |

**Location**

1911 Kamehameha IV Rd.
Honolulu, HI 96819

**No. of Other Levels Surveyed:** 1

**Building Construction Type**

LOAD BEARING MASONRY

Structural Concrete with: Metal Decks, Flat Slab, Beam/Joist or Waffle Slabs; Structural Tees
Steel Frame
Wood Frame
Load Bearing Masonry

| Building Use | | % Floor Space |
|---|---|---|
| Use #1 | ATHLETICS | 100 |
| Use #2 | | |
| Use #3 | | |

Academic Classes, Administration Offices, Food Services, Dormitory, Mechanical Spaces, Gymnasium, Laboratory, Library, Residential or Other (Specify)

**ACBM PRESENT?**

NO

YES = PRESENT
NO = NOT PRESENT
ASM = ASSUMED

**Inspector Identification**

**Name:** Joseph Custino
**State of HI Certification No.** HIASB-1094
**State of HI Certification Expiration Date:** 9/3/2023
**Building Inspector Certification Exp. Date:** 12/8/2023

**Specific areas surveyed**

upper roof and 2nd floor over playcourt

**Inspector Comments**

EMET's scope of work was limited to the areas listed above in Specific Areas Surveyed. This report is not a specification for the removal of asbestos-containing material and should not be used as such. Results of the presence or absence of asbestos are based on the survey and on analyses of the suspect materials encountered. Original building plans and specifications were not available for review. Therefore, because of these limitations and the highly variable nature of building construction, the potential remains for undiscovered ACM. EMET makes no warranty and assumes no liability for the inappropriate use or misuse of this document.


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# Unified Homogeneous/Sample Area ACM - Space and Salient Cross Reference

**Building ID and Name**

| KVG | KALIHI VALLEY GYM |
|---|---|

**For the ACM - Space Identified as:**

125-KVG-2

**Building Location**

1911 Kamehameha IV Rd.
Honolulu, HI 96819

**EMET ID**

2303125

**Inspection Date(s):** 6/21/2023, 6/26/2023

| Unified Sample Area | Homogeneous Sample Area or Salient Description | Comments | ACBM Present | | | Material Type* | | | Response Action | Estimated Cost to Remove |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Suspected | Confirmed | Friable | T | DC | PD | | |
| 125-KVG-2A | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL | | YES | NO ACM | | | | | | |
| 125-KVG-2B | GRAY TRANSITE WALL PANEL | | YES | NO ACM | | | | | | |

*** Refers to Material Type and Damage Conditions**

| T = Material Type: | DC = Damage Condition: | PD = Potential Damage Condition: |
|---|---|---|
| S = Surfacing | ND = No Damage | NPD = No Potential Damage |
| M = Miscellaneous | D = Damaged | PD = ACBM w/ Potential Damage |
| T = Thermal Systems | SD = Significant Damage | PSD = Potential Significant Damage |

**** Recommended Response Actions:**

1. Isolate area and restrict access. Remove or repair ASAP.
2. Continue Operations and Maintenance (O&M) program. Remove or repair ASAP or reduce potential for disturbance.

3-5. Repair, continue O&M. Lower number indicates higher priority if all repair cannot be done immediately.

6-7. Continue O&M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

8. Continue O&M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

Note: An O&M program may include enclosure and encapsulation.


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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/21/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-2A | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL | | 125-KVG-2A |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-2A1, 125-KVG-2A2, 125-KVG-2A3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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**Phone: (808) 671-8383 • FAX: (808) 671-7979**



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-2A | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-2A1 | 0 | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL | See Sketch 125-KVG-2 |
| 125-KVG-2A2 | 0 | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL | See Sketch 125-KVG-2 |
| 125-KVG-2A3 | 0 | BROWN SPRAY-APPLIED ACOUSTICAL CEILING MATERIAL | See Sketch 125-KVG-2 |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/21/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-2A  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-001 | 125-KVG-2A1 | gray | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 99 | 1 | |
| 125-002 | 125-KVG-2A2 | gray | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 99 | 1 | |
| 125-003 | 125-KVG-2A3 | gray | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 99 | 1 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/21/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-2B | GRAY TRANSITE WALL PANEL | | 125-KVG-2B |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

GRAY TRANSITE WALL PANEL

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | 1500 | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±1500 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-2B1, 125-KVG-2B2, 125-KVG-2B3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-2B | GRAY TRANSITE WALL PANEL |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-2B1 | 0 | GRAY TRANSITE WALL PANEL | See Sketch 125-KVG-2 |
| 125-KVG-2B2 | 0 | GRAY TRANSITE WALL PANEL | See Sketch 125-KVG-2 |
| 125-KVG-2B3 | 0 | GRAY TRANSITE WALL PANEL | See Sketch 125-KVG-2 |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/21/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-2B  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-004 | 125-KVG-2B1 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-005 | 125-KVG-2B2 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-006 | 125-KVG-2B3 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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## Unified Homogeneous/Sample Area ACM - Space and Salient Cross Reference

**Building ID and Name**

| KVG | KALIHI VALLEY GYM |
|---|---|

**For the ACM - Space Identified as:**

125-KVG-UR

**Building Location**

1911 Kamehameha IV Rd.
Honolulu, HI 96819

**EMET ID**

2303125

**Inspection Date(s):** 6/21/2023, 6/26/2023

| Unified Sample Area | Homogeneous Sample Area or Salient Description | Comments | ACBM Present | | | Material Type* | | | Response Action | Estimated Cost to Remove |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Suspected | Confirmed | Friable | T | DC | PD | | |
| 125-KVG-URA(L1) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | membrane layer | YES | NO ACM | | | | | | |
| 125-KVG-URA(L2) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | insulation layer | YES | NO ACM | | | | | | |
| 125-KVG-URA(L3) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | foam layer | YES | NO ACM | | | | | | |
| 125-KVG-URB | OFF-WHITE ROOF COATING | | YES | NO ACM | | | | | | |
| 125-KVG-URC | WHITE CAULKING AT PARAPET WALL SEAMS | | YES | NO ACM | | | | | | |
| 125-KVG-URD | LIGHT GRAY CAULKING AT METAL WALL FLASHING | | YES | NO ACM | | | | | | |

*** Refers to Material Type and Damage Conditions**

| T = Material Type: | DC = Damage Condition: | PD = Potential Damage Condition: |
|---|---|---|
| S = Surfacing | ND = No Damage | NPD = No Potential Damage |
| M = Miscellaneous | D = Damaged | PD = ACBM w/ Potential Damage |
| T = Thermal Systems | SD = Significant Damage | PSD = Potential Significant Damage |

**** Recommended Response Actions:**

1. Isolate area and restrict access. Remove or repair ASAP.
2. Continue Operations and Maintenance (O&M) program. Remove or repair ASAP or reduce potential for disturbance.

3-5. Repair, continue O&M. Lower number indicates higher priority if all repair cannot be done immediately.

6-7. Continue O&M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

8. Continue O&M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

Note: An O&M program may include enclosure and encapsulation.


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## Unified Homogeneous/Sample Area ACM - Space and Salient Cross Reference

**Building ID and Name**

| KVG | KALIHI VALLEY GYM |
|---|---|

**Building Location**

1911 Kamehameha IV Rd.
Honolulu, HI 96819

**EMET ID**

2303125

**For the ACM - Space Identified as:**

125-KVG-UR

**Inspection Date(s):** 6/21/2023, 6/26/2023

| Unified Sample Area | Homogeneous Sample Area or Salient Description | Comments | ACBM Present | | | Material Type* | | | Response Action | Estimated Cost to Remove |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Suspected | Confirmed | Friable | T | DC | PD | | |
| 125-KVG-URE | RED CAULKING AT EXHAUST FAN | | YES | NO ACM | | | | | | |
| 125-KVG-URF | GRAY-BLACK PATCH/SEALANT | | YES | NO ACM | | | | | | |
| 125-KVG-URG | BLACK PATCH/SEALANT | | YES | NO ACM | | | | | | |

*** Refers to Material Type and Damage Conditions**

| T = Material Type: | DC = Damage Condition: | PD = Potential Damage Condition: |
|---|---|---|
| S = Surfacing | ND = No Damage | NPD = No Potential Damage |
| M = Miscellaneous | D = Damaged | PD = ACBM w/ Potential Damage |
| T = Thermal Systems | SD = Significant Damage | PSD = Potential Significant Damage |

**** Recommended Response Actions:**

1. Isolate area and restrict access. Remove or repair ASAP.
2. Continue Operations and Maintenance (O&M) program. Remove or repair ASAP or reduce potential for disturbance.

3-5. Repair, continue O&M. Lower number indicates higher priority if all repair cannot be done immediately.

6-7. Continue O&M. Take preventive measures to reduce disturbance. Number indicates priority for removal.

8. Continue O&M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change.

Note: An O&M program may include enclosure and encapsulation.


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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URA (L1) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | | 125-KVG-URA(L1) |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM

membrane layer

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 11000 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±11000 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URA(L1)1, 125-KVG-URA(L1)2, 125-KVG-URA(L1)3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URA(L1) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URA(L1)1 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L1)2 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L1)3 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URA(L1) Analysis Date: 6/30/2023 Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-007 | 125-KVG-URA (L1)1 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-010 | 125-KVG-URA (L1)2 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-013 | 125-KVG-URA (L1)3 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URA (L2) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | | 125-KVG-URA(L2) |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM

insulation layer

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 11000 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±11000 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URA(L2)1, 125-KVG-URA(L2)2, 125-KVG-URA(L2)3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URA(L2) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URA(L2)1 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L2)2 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L2)3 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URA(L2) Analysis Date: 6/30/2023 Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-008 | 125-KVG-URA (L2)1 | brown, black | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 90 | 10 | |
| 125-011 | 125-KVG-URA (L2)2 | brown, black | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 90 | 10 | |
| 125-014 | 125-KVG-URA (L2)3 | brown, black | Yes | No | - | cellulose | misc. part. | |
| | | | | | - | 90 | 10 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URA (L3) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | | 125-KVG-URA(L3) |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM

foam layer

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 11000 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±11000 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URA(L3)1, 125-KVG-URA(L3)2, 125-KVG-URA(L3)3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URA(L3) | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URA(L3)1 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L3)2 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |
| 125-KVG-URA(L3)3 | 0 | BLACK WEATHER MEMBRANE BUILT-UP ROOFING SYSTEM | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URA(L3) Analysis Date: 6/30/2023 Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-009 | 125-KVG-URA (L3)1 | white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-012 | 125-KVG-URA (L3)2 | white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-015 | 125-KVG-URA (L3)3 | white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URB | OFF-WHITE ROOF COATING | | 125-KVG-URB |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

OFF-WHITE ROOF COATING

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 900 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±900 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

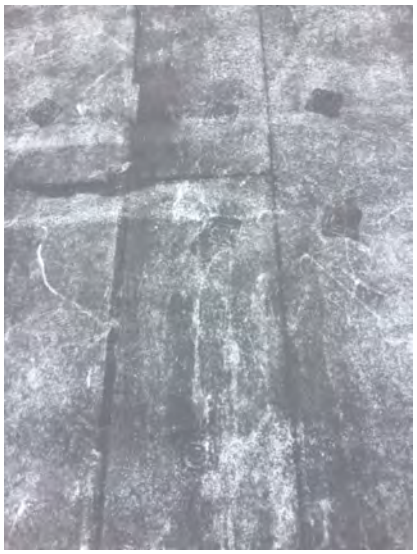
| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URB1, 125-KVG-URB2, 125-KVG-URB3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URB | OFF-WHITE ROOF COATING |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URB1 | 0 | OFF-WHITE ROOF COATING | See Sketch 125-KVG-UR |
| 125-KVG-URB2 | 0 | OFF-WHITE ROOF COATING | See Sketch 125-KVG-UR |
| 125-KVG-URB3 | 0 | OFF-WHITE ROOF COATING | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URB  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-016 | 125-KVG-URB1 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-017 | 125-KVG-URB2 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-018 | 125-KVG-URB3 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |
| | Material ID and Description | | |
| Document Number | 125-KVG-URC | WHITE CAULKING AT PARAPET WALL SEAMS | Unified Sample Area Number |
| | Drawing/Sketch Number | | |
| | | | 125-KVG-URC |

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

WHITE CAULKING AT PARAPET WALL SEAMS

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | | | |
| Linear Feet of Other ACM | 350 | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±350 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |
| **Visible** | **Reachable** | **Texture** |
| - - | - - | - - |
| **Barriers** | **Ventilation** / **If Yes** | **Friable Surface** |
| - - | - - / - - | - - / - - |
| **Air Movement** | **Proximity to Repair Items** | **Activity** |
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URC1, 125-KVG-URC2, 125-KVG-URC3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URC | WHITE CAULKING AT PARAPET WALL SEAMS |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URC1 | 0 | WHITE CAULKING AT PARAPET WALL SEAMS | See Sketch 125-KVG-UR |
| 125-KVG-URC2 | 0 | WHITE CAULKING AT PARAPET WALL SEAMS | See Sketch 125-KVG-UR |
| 125-KVG-URC3 | 0 | WHITE CAULKING AT PARAPET WALL SEAMS | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URC  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-019 | 125-KVG-URC1 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-020 | 125-KVG-URC2 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-021 | 125-KVG-URC3 | gray, white | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Unified Sample Area Number |
|---|---|---|
| 125-KVG-URD | LIGHT GRAY CAULKING AT METAL WALL FLASHING | 125-KVG-URD |

Document Number:

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

LIGHT GRAY CAULKING AT METAL WALL FLASHING

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | | | |
| Linear Feet of Other ACM | 300 | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±300 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URD1, 125-KVG-URD2, 125-KVG-URD3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URD | LIGHT GRAY CAULKING AT METAL WALL FLASHING |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URD1 | 0 | LIGHT GRAY CAULKING AT METAL WALL FLASHING | See Sketch 125-KVG-UR |
| 125-KVG-URD2 | 0 | LIGHT GRAY CAULKING AT METAL WALL FLASHING | See Sketch 125-KVG-UR |
| 125-KVG-URD3 | 0 | LIGHT GRAY CAULKING AT METAL WALL FLASHING | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URD  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-022 | 125-KVG-URD1 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-023 | 125-KVG-URD2 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-024 | 125-KVG-URD3 | gray | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Unified Sample Area Number |
|---|---|---|
| 125-KVG-URE | RED CAULKING AT EXHAUST FAN | 125-KVG-URE |

Document Number:

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

RED CAULKING AT EXHAUST FAN

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | | | |
| Linear Feet of Other ACM | 5 | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±5 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URE1, 125-KVG-URE2, 125-KVG-URE3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URE | RED CAULKING AT EXHAUST FAN |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URE1 | 0 | RED CAULKING AT EXHAUST FAN | See Sketch 125-KVG-UR |
| 125-KVG-URE2 | 0 | RED CAULKING AT EXHAUST FAN | See Sketch 125-KVG-UR |
| 125-KVG-URE3 | 0 | RED CAULKING AT EXHAUST FAN | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URE  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-025 | 125-KVG-URE1 | red | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-026 | 125-KVG-URE2 | red | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-027 | 125-KVG-URE3 | red | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
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Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URF | GRAY-BLACK PATCH/SEALANT | | 125-KVG-URF |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

GRAY-BLACK PATCH/SEALANT

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 5 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±5 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URF1, 125-KVG-URF2, 125-KVG-URF3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URF | GRAY-BLACK PATCH/SEALANT |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URF1 | 0 | GRAY-BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |
| 125-KVG-URF2 | 0 | GRAY-BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |
| 125-KVG-URF3 | 0 | GRAY-BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URF  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-028 | 125-KVG-URF1 | white, black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-029 | 125-KVG-URF2 | white, black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-030 | 125-KVG-URF3 | white, black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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# Sample Area Report - Area Master

| EMET ID | Building Number and Name | | Inspection Date |
|---|---|---|---|
| 2303125 | KVG | KALIHI VALLEY GYM | 6/26/2023 |

| Material ID and Description | | Document Number | Unified Sample Area Number |
|---|---|---|---|
| 125-KVG-URG | BLACK PATCH/SEALANT | | 125-KVG-URG |

Drawing/Sketch Number:

A Sample Area should contain material of one, and only one, composition or matrix. An exception can be made in the case of layered applications of materials, such as occurs with a Three Coat Plaster system, that generally matches the same physical locations. Special care must be taken while collecting samples of layered materials, to enable the analysis to discern the several matrices present. Such conditions should be described in detail on the Sample Notes form for the analyst.

## Unified Sample Area/Homogeneous Material

BLACK PATCH/SEALANT

## Location of Confirmed, Assumed, or New ACM within Building

Not Applicable

## SAMPLING STRATEGY DATA

| | | | |
|---|---|---|---|
| Ceiling Height #1 | | #2 | |
| Square Feet of Ceiling Materials | | | |
| Square Feet of Wall Materials | | | |
| Square Feet of Floor Surface | | | |
| Linear Feet of TSI | | | |
| Square Feet of Structural Steel Coatings (including over-spray) | | | |
| Square Feet of Other ACM | 15 | | |
| Linear Feet of Other ACM | | | |
| **Total square and/or linear feet of ACM in this Sample Space:** | ±15 | | |

## RISK ASSESSMENT DETERMINATION

| Physical Condition | Potential Damage | Water Damage |
|---|---|---|
| - - | - - | - - |

| Visible | Reachable | Texture |
|---|---|---|
| - - | - - | - - |

| Barriers | Ventilation | If Yes | Friable Surface | |
|---|---|---|---|---|
| - - | - - | - - | - - | - - |

| Air Movement | Proximity to Repair Items | Activity |
|---|---|---|
| - - | - - | - - |

## SAMPLE ANALYSIS SUMMARY SECTION

| | |
|---|---|
| Total Number of Samples Collected | 3 |
| Samples Collected by | EMET |
| Sample Numbers | 125-KVG-URG1, 125-KVG-URG2, 125-KVG-URG3 |
| Total Number of Samples Analyzed | 3 |
| Samples Analyzed by | EMET |
| **ASBESTOS-CONTAINING MATERIAL ?** | **NO** |
| Number of Salient Designations: | |

## PHOTOGRAPH



**EMET Services, Inc. • 94-520 Uke`e Street, Suite A • Waipahu, Hawaii 96797**
**Phone: (808) 671-8383 • FAX: (808) 671-7979**



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# Sample Log and Notes

| Building Number and Name | | EMET ID |
|---|---|---|
| KVG | KALIHI VALLEY GYM | 2303125 |

| Sample Area/Lot Number and Name | |
|---|---|
| 125-KVG-URG | BLACK PATCH/SEALANT |

| Sample Number | % Asbestos | Description of Sampled Material | Sample Location |
|---|---|---|---|
| 125-KVG-URG1 | 0 | BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |
| 125-KVG-URG2 | 0 | BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |
| 125-KVG-URG3 | 0 | BLACK PATCH/SEALANT | See Sketch 125-KVG-UR |

| Inspector's Name | Signature | Date Samples Collected |
|---|---|---|
| Joseph Custino |  | 6/26/2023 |

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# LABORATORY REPORT

Asbestos Bulk Sample Analysis by Polarized Light Microscopy
in accordance with 40 CFR Part 763 Appendix E to Subpart E

NVLAP®

Client: RMA Architects, Inc.

Building: KALIHI VALLEY GYM

NVLAP LAB CODE 101807-0

Address: 1150 South King Street, 8th Floor
Honolulu, HI 96814

Address: 1911 Kamehameha IV Rd.
Honolulu, HI 96819

Approved Signatory:

Sample/Homogeneous Area: 125-KVG-URG  Analysis Date: 6/30/2023  Report Date: 6/30/2023

| Lab ID | Sample ID | Color | Homogeneity | Asbestos Detected | Asbestos (Type) Area % | Fibrous Components Area % | Non-fibrous Components Area % | Comments |
|---|---|---|---|---|---|---|---|---|
| 125-031 | 125-KVG-URG1 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-032 | 125-KVG-URG2 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |
| 125-033 | 125-KVG-URG3 | black | Yes | No | - | - | misc. part. | |
| | | | | | - | - | 100 | |

**Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0.**
State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.
Note: EPA, OSHA, and HIOSH define “asbestos-containing material” as any material or product which contains more than one percent asbestos.

| | |
|---|---|
| *Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.<br>*Laboratory test report relates only to items tested.<br>*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated. | *This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.<br>*Samples analyzed as received by the laboratory, interpretation is responsibility of the client. |

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## Appendix B

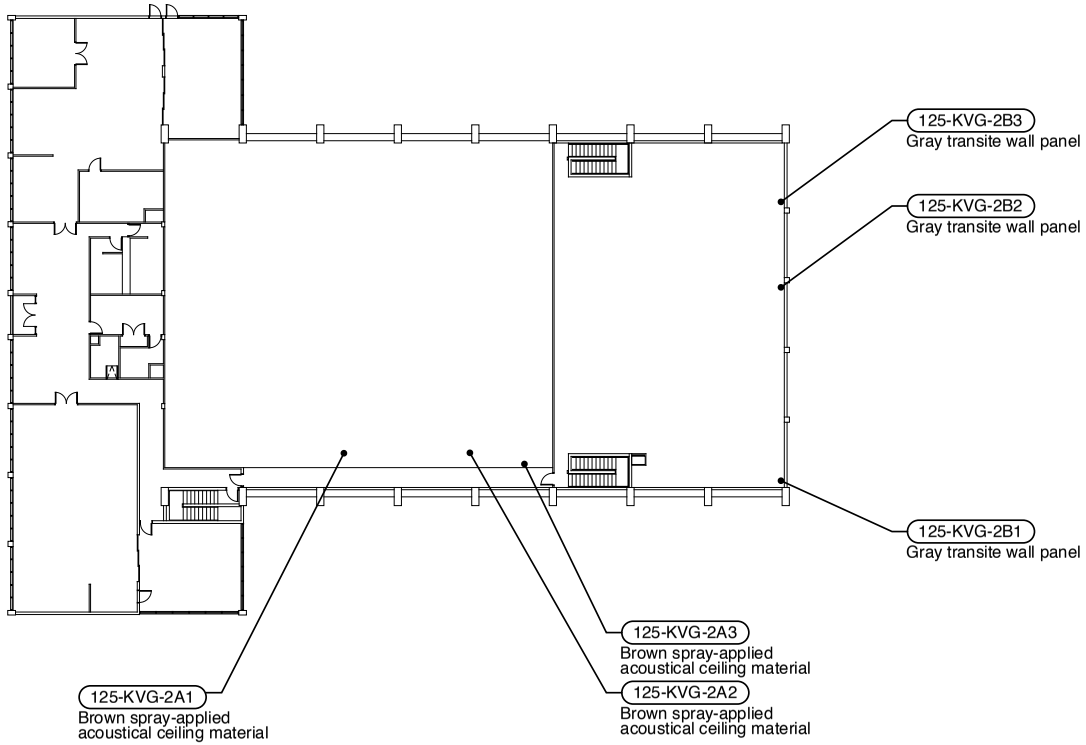
Asbestos Survey Sample Locations Sketch



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(808) 671-8383…Telephone emet@emetservices.com...E-mail

## ASBESTOS SAMPLE LOCATION PLAN

| BLDG # | NAME OF PROJECT SITE | ADDRESS | SKETCH # |
|---|---|---|---|
| KVG | KALIHI VALLEY DISTRICT PARK - GYMNASIUM | 1911 KAMEHAMEHA IV RD<br>HONOLULU, HI 96819 | 125-KVG-2<br>1 OF 1 |




**LEGEND**

ACM: ← SAMPLE #

NON-ACM: ← SAMPLE #

NORTH

**ASBESTOS-CONTAINING MATERIALS (ACM)* :**

NO ACM DETECTED IN AREAS SAMPLED

*ASBESTOS-CONTAINING MATERIAL (ACM) IS DEFINED AS ANY MATERIAL CONTAINING > 1 % ASBESTOS.

THIS SURVEY WAS LIMITED IN SCOPE TO SPECIFIC AREAS AFFECTED BY PLANNED RENOVATION ACTIVITIES ONLY; THEREFORE, THIS REPORT MAKES NO WARRANTY FOR AREAS OF THE BUILDING WHICH WERE NOT INCLUDED IN THE SCOPE OF THE SURVEY.

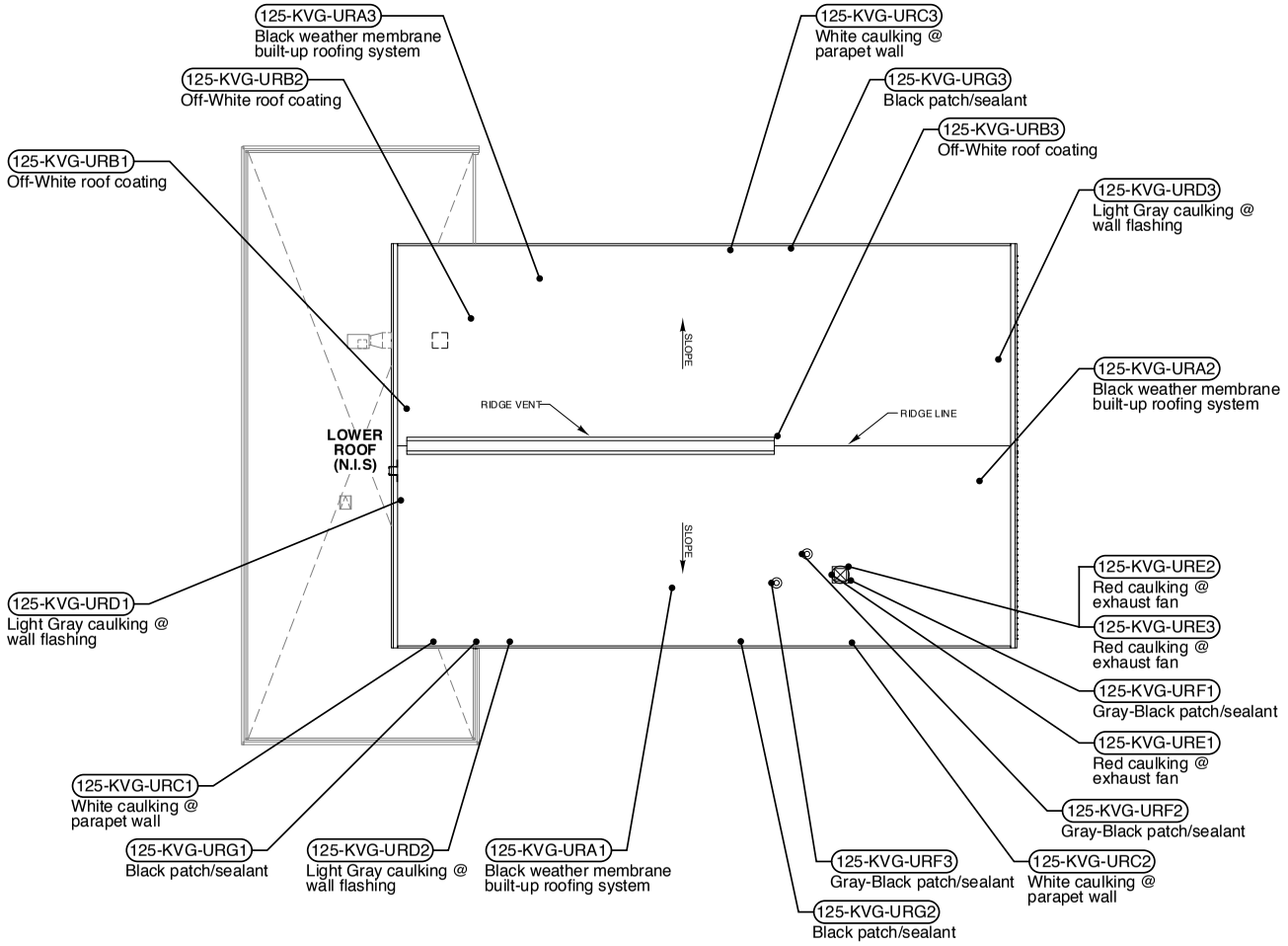
**KALIHI VALLEY DISTRICT PARK**
**GYMNASIUM - SECOND FLOOR PLAN**
NOT TO SCALE

**EMET I.D. #2303125**

**EnvironMETeo (EMET) Services, Inc. 94-520 Uke'e Street, Suite A Waipahu, Hawaii 96797 Phone: (808) 671-8383 Fax: (808) 671-7979**

## ASBESTOS SAMPLE LOCATION PLAN

| BLDG # | NAME OF PROJECT SITE | ADDRESS | SKETCH # |
|---|---|---|---|
| KVG | KALIHI VALLEY DISTRICT PARK - GYMNASIUM | 1911 KAMEHAMEHA IV RD<br>HONOLULU, HI 96819 | 125-KVG-UR<br>1 OF 1 |




**LEGEND**

| | | |
|---|---|---|
| **ACM:** | SAMPLE # | NORTH |
| **NON-ACM:** | SAMPLE # | |
| **(N.I.S)** | (NOT IN SCOPE) | |
| | ROOF HATCH | |
| | VTR (VENT THROUGH ROOF) | |
| | EXHAUST FAN | |

**ASBESTOS-CONTAINING MATERIALS (ACM)* :**

NO ACM DETECTED IN AREAS SAMPLED

*ASBESTOS-CONTAINING MATERIAL (ACM) IS DEFINED AS ANY MATERIAL CONTAINING > 1 % ASBESTOS.

THIS SURVEY WAS LIMITED IN SCOPE TO SPECIFIC AREAS AFFECTED BY PLANNED RENOVATION ACTIVITIES ONLY; THEREFORE, THIS REPORT MAKES NO WARRANTY FOR AREAS OF THE BUILDING WHICH WERE NOT INCLUDED IN THE SCOPE OF THE SURVEY.

**KALIHI VALLEY DISTRICT PARK**
**GYMNASIUM - UPPER ROOF PLAN**
NOT TO SCALE

**EMET I.D. #2303125**

**EnvironMETeo (EMET) Services, Inc. 94-520 Uke'e Street, Suite A Waipahu, Hawaii 96797 Phone: (808) 671-8383 Fax: (808) 671-7979**

## Appendix C

Lead Paint Test Results



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(808) 671-8383…Telephone emet@emetservices.com...E-mail

# Laboratory Report

## Painted Surfaces Total Elemental Lead Analyses by X-Ray Fluorescence

**EMET ID: 2303125**

**Test Date: June 21, 2023**

**Kalihi Valley Gym Reroof**

| XRF# | Location | Side | Component | Substrate | Condition | Color | Lead Pb (mg/cm²) | Lead-Based Paint | Confirmed Lead-Containing Paint |
|---|---|---|---|---|---|---|---|---|---|
| 427 | Calibration | | | | | | 1.10 ± 0.10 | | |
| 428 | Calibration | | | | | | 1.05 ± 0.10 | | |
| 429 | Calibration | | | | | | 1.14 ± 0.10 | | |
| 430 | 2nd fl., interior | West | security screen | metal | peeling | gray | 0.09 ± 0.02 | no | yes |
| 431 | 2nd fl., interior | West | wall | CMU | fair | cream | 0.06 ± 0.01 | no | yes |
| 432 | 2nd fl., interior | East | beam | wood | fair | cream | <LOD ± 0.01 | no | no |
| 433 | 2nd fl., interior | East | window frame | wood | fair | cream | <LOD ± 0.01 | no | no |
| 434 | 2nd fl., interior | East | beam | wood | fair | cream | <LOD ± 0.01 | no | no |
| 435 | 2nd fl., interior | North | security screen | metal | peeling | gray | 0.14 ± 0.03 | no | yes |
| 436 | 2nd fl., interior | East | beam | wood | fair | cream | <LOD ± 0.01 | no | no |
| 437 | 2nd fl., interior | North | security screen | metal | peeling | gray | <LOD ± 0.01 | no | no |
| 438 | 2nd fl., interior | East | wall panel | concrete | fair | cream | <LOD ± 0.01 | no | no |
| 439 | 2nd fl., interior | West | i-beam | metal | fair | cream | <LOD ± 0.01 | no | no |
| 440 | 2nd fl., interior | West | beam | concrete | fair | cream | 0.05 ± 0.01 | no | yes |
| 441 | Calibration | | | | | | 1.14 ± 0.10 | | |
| 442 | Calibration | | | | | | 1.10 ± 0.10 | | |
| 443 | Calibration | | | | | | 1.15 ± 0.10 | | |

"**Lead**" column indicates the detected lead content in paint film in mg/cm² (milligrams per square centimeter).
<LOD = less than instrument level of detection, 0.01 mg/cm².

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm²).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t



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(808) 671-8383...Telephone (808) 671-7979...Facsimile emet@emetservices.com...E-mail

# Laboratory Report

## Painted Surfaces Total Elemental Lead Analyses by X-Ray Fluorescence

**EMET ID: 2303125** **Test Date: June 26, 2023**

**Kalihi Valley Gym Reroof**

| XRF# | Location | Side | Component | Substrate | Condition | Color | Lead Pb ($mg/cm^2$) | Lead-Based Paint | Confirmed Lead-Containing Paint |
|---|---|---|---|---|---|---|---|---|---|
| 611 | Calibration | | | | | | 1.14 ± 0.10 | | |
| 612 | Calibration | | | | | | 1.07 ± 0.10 | | |
| 613 | Calibration | | | | | | 1.13 ± 0.10 | | |
| 614 | upper roof | West | ridge vent | gypboard | fair | beige | <LOD ± 0.01 | no | no |
| 615 | upper roof | South | flashing | metal | poor | pale beige | 0.02 ± 0.01 | no | yes |
| 616 | upper roof | South | flashing | metal | poor | beige | <LOD ± 0.01 | no | no |
| 617 | upper roof | East | edge flashing | metal | poor | beige | <LOD ± 0.01 | no | no |
| 618 | upper roof | East | ridge vent | metal | fair | beige | <LOD ± 0.01 | no | no |
| 619 | upper roof | North | flashing | metal | poor | pale beige | 0.03 ± 0.01 | no | yes |
| 620 | upper roof | West | edge flashing | metal | poor | pale beige | <LOD ± 0.01 | no | no |
| 621 | Calibration | | | | | | 1.13 ± 0.10 | | |
| 622 | Calibration | | | | | | 1.10 ± 0.10 | | |
| 623 | Calibration | | | | | | 1.05 ± 0.10 | | |

"**Lead**" column indicates the detected lead content in paint film in $mg/cm^2$ (milligrams per square centimeter).
<LOD = less than instrument level of detection, 0.01 $mg/cm^2$.

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter ($mg/cm^2$).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t



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# Laboratory Report

## Painted Surfaces Total Elemental Lead Analyses by X-Ray Fluorescence

**EMET ID: 2303125** **Test Date: July 17, 2023**

**Kalihi Valley Gym Reroof**

| XRF# | Location | Side | Component | Substrate | Condition | Color | Lead Pb (mg/cm²) | Lead-Based Paint | Confirmed Lead-Containing Paint |
|---|---|---|---|---|---|---|---|---|---|
| 27 | Calibration | | | | | | 1.09 ± 0.10 | | |
| 28 | Calibration | | | | | | 1.13 ± 0.10 | | |
| 29 | Calibration | | | | | | 1.15 ± 0.10 | | |
| 30 | exterior | South | wall panel | metal | intact | beige | 0.03 ± 0.01 | no | yes |
| 31 | exterior | South | wall panel | metal | intact | brown | 0.03 ± 0.01 | no | yes |
| 32 | exterior | North | wall panel | metal | intact | beige | 0.03 ± 0.01 | no | yes |
| 33 | Calibration | | | | | | 1.18 ± 0.10 | | |
| 34 | Calibration | | | | | | 1.04 ± 0.10 | | |
| 35 | Calibration | | | | | | 1.05 ± 0.10 | | |

"**Lead**" column indicates the detected lead content in paint film in mg/cm² (milligrams per square centimeter).
<LOD = less than instrument level of detection, 0.01 mg/cm².

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm²).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t



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## Appendix D

Arsenic Test Results



**EnvironMETeo (EMET) Services, Inc.** Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200
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EnvironMETeo Services, Inc.
Environmental / Industrial Health & Safety

# LABORATORY REPORT

Arsenic in Bulk Analyses by X-Ray Fluorescence
EPA Method 6200

**Client:** Brent Tokita
RMA Architects, Inc.
1150 S. King St., 8th Floor
Honolulu, HI 96814

**Sampling Date:** 7/17/2023
**Analysis Date:** 7/17/2023
**Report Date:** 7/17/2023

**Reference:** Kalihi Valley Gym Reroof - Arsenic Test Results

| Sample Number | Sample Description | Arsenic (ppm) |
|---|---|---|
| 125-UR-1As | upper roof, fiberboard insulation, NE corner | < LOD* |
| 125-UR-2As | upper roof, fiberboard insulation, center | < LOD* |
| 125-UR-3As | upper roof, fiberboard insulation, SW corner | < LOD* |

* < LOD = below method detection limit of 10 ppm
Serial # 112969, XRF Model XL3T

**Approved Signature:**



Laboratory test report relates to only item(s) tested.
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## Appendix E

Certifications



**EnvironMETeo (EMET) Services, Inc.** Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200
(808) 671-8383…Telephone emet@emetservices.com...E-mail

United States Department of Commerce
National Institute of Standards and Technology

# Certificate of Accreditation to ISO/IEC 17025:2017

**NVLAP LAB CODE: 101807-0**

## EnvironMETeo Services Inc.

Waipahu, HI

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

## Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2023-07-01 through 2024-06-30

*Effective Dates*

*For the National Voluntary Laboratory Accreditation Program*

STATE OF HAWAI'I

DEPARTMENT OF HEALTH

# Lead-Based Paint Activities Firm Certification

*THIS IS TO CERTIFY THAT*

## EnvironMETeo Services, Inc.

has fulfilled the requirements of Chapter 11-41 Hawaii Administrative Rules and the Toxic Substance Control Act (TSCA) Section 402(a)(2), and has received certification as a firm pursuant to §11-41-4, HAR to conduct lead-based paint activities in Hawaii.

This certification is valid from the date of issuance and expires on **JUNE 19, 2024.**

Date of Issue: **MAY 18, 2021**
Certification # **PBF-0024**

FOR DIRECTOR OF HEALTH

NON-TRANSFERABLE

REVOCABLE FOR CAUSE



**State of Hawai'i**
**Asbestos Certification**
**Training Course Exp. Dates**

IW n/a MP n/a
CS n/a PO n/a
INS 12/17/23 PM 10/16/25

IW= Worker
CS= Cert'l Sup
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

**Custino**
Joseph K.
EnvironMETeo Services, Inc.
**HIASB-1094**
**State Exp. Date** 09/03/2023

**State of Hawai'i**
**Lead Based Paint Activities Certification**

**Expiration Dates:**

Inspector- n/a
Supervisor- n/a
Risk Assessor- 10/16/2025
Project Designer- n/a
Worker- n/a



**Custino**
**Joseph**
Certification # PB-0667

End of Report

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# DIVISION 2 - SITE CONSTRUCTION

## SECTION 02072 – MINOR DEMOLITION FOR REMODELING

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 WORK INCLUDED: Furnish all labor, materials, tools, and equipment necessary to complete all miscellaneous work as required and specified hereinafter.

A. Demolition work shall include, but not necessarily be limited to the following:

1. Removal of roofing, ridge vent, flashing, scuppers, concealed gutters, portion of downspouts (internal), roof insulation, roof decking, and portion of roof purlins (at eaves).
2. Removal of metal wall parapet fascia, coping, parapet sheathing board.
3. Removal of damage expanded metal vents at gym eaves.
4. Removal of portion of wire glass panels.
5. Removal of exterior decorative wood vertical members and wood beams.
6. Miscellaneous additional work necessary to complete all re-roofing.

B. The Contractor shall visit the site, examine the areas and note all existing conditions and extent of work involved for the complete removal and surface preparation work required.

C. All removed materials shall become the property of the Contractor and shall be completely removed, hauled away from the premises and properly disposed of according to State and City regulations at his own expense, except for items as noted on the plans.

D. Miscellaneous patch work is required as a result of removal work and other damages already existing.

E. The Contractor shall comply with all pollution control regulations and safety codes.

F. Clean up.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Products shall be as specified and/or the best of their respective trades, matching existing.

PART 3 – EXECUTION

3.01 REMOVAL AND DEMOLITION:

A. All work shall be executed in a safe, neat, orderly, and careful manner with due consideration for the remaining parts of the building.

B. PATCHING: All areas damaged as a result of demolition work and those already existing shall be patched to match existing.

C. CLEAN UP: Clean up and remove all debris accumulated from demolition construction operations from time to time, when and as directed by the Officer-in-Charge. Upon completion of the construction work and before final acceptance of work, remove all surplus materials, equipment, etc., and leave entire jobsite clean and neat.

END OF SECTION

# DIVISION 5 - METALS

## SECTION 05120 - STRUCTURAL STEEL

### PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: the General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. Section Includes:

1. Structural steel.

2. Grout.

1.03 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For each type of product indicated.

C. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

2. Include embedment drawings.

3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.

4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.

D. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).

2. Electrode manufacturer and trade name, for demand critical welds.

E. Qualification Data: For qualified Installer, fabricator, professional engineer, testing agency.

F. Welding certificates.

G. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

H. Mill test reports for structural steel, including chemical and physical properties.

I. Product Test Reports: For the following:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.

2. Shop primers.

3. Nonshrink grout.

J. Source quality-control reports.

1.04 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.

B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.

C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement CCE-3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."

D. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

E. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.

2. AISC 341 and AISC 341s1.

3. AISC 360.

4. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.

2. Clean and relubricate bolts and nuts that become dry or rusty before use.

3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

1.06 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 – PRODUCTS

2.01 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 992/A 992M.

B. Channels, Angles: ASTM A 36/A 36M.

C. Plate and Bar: ASTM A 36/A 36M.

D. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.

1. Weight Class: Standard, Extra strong, Double-extra strong.

2. Finish: Galvanized.

E. Welding Electrodes: Comply with AWS requirements.

2.02 BOLTS, CONNECTORS, AND ANCHORS

A. Zinc-Coated High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.

B. Headed Anchor Rods: ASTM F 1554, Grade 36, straight.

1. Nuts: ASTM A 563 heavy-hex carbon steel.

2. Plate Washers: ASTM A 36/A 36M carbon steel.

3. Washers: ASTM F 436, Type 1, hardened carbon steel.

4. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

C. Threaded Rods: ASTM A 36/A 36M.

1. Nuts: ASTM A 563heavy-hex carbon steel.

2. Washers: ASTM F 436, Type 1, hardened carbon steel.

3. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

2.03 PRIMER

A. Primer: Comply with Division 9 painting Sections.

B. Primer: SSPC-Paint 25, **Type I**, zinc oxide, alkyd, linseed oil primer.

C. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

D. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20 ASTM A 780.

## 2.04 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## 2.05 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.

1. Camber structural-steel members where indicated.

2. Fabricate beams with rolling camber up.

3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.

4. Mark and match-mark materials for field assembly.

5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning."

## 2.06 SHOP CONNECTIONS

A. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

## 2.07 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.

2. Surfaces to be field welded.

3. Surfaces to be high-strength bolted with slip-critical connections.

4. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 10/NACE No. 2, "Near-White Blast Cleaning."

2. SSPC-SP 8, "Pickling."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

D. Painting: Prepare steel and apply a one-coat, nonasphaltic primer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils.

## 2.08 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

2.09 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

C. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.

2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

3. Ultrasonic Inspection: ASTM E 164.

4. Radiographic Inspection: ASTM E 94.

D. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1/D1.1M for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.

2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1/D1.1M.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

## 3.03 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

C. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.

2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

D. Splice members only where indicated.

E. Do not use thermal cutting during erection. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.

F. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

G. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

3.04 FIELD CONNECTIONS

A. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.

3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

3.05 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds.

B. Bolted Connections: Bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.

1. In addition to visual inspection, field welds will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

a. Liquid Penetrant Inspection: ASTM E 165.

b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

c. Ultrasonic Inspection: ASTM E 164.

d. Radiographic Inspection: ASTM E 94.

D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:

1. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.

2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1/D1.1M.

E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.06 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.

B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

C. Touchup Painting: Cleaning and touchup painting are specified in Division 9 painting Sections.

END OF SECTION 05120

# DIVISION 5 - METALS

## SECTION 05310 - STEEL DECK

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: the General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Terms and Conditions, City and County of Honolulu (not specifically attached) and Division 1 Specification Sections, apply to this Section.

1.03 SUMMARY

A. This Section includes the following:

1. Roof deck.

1.04 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For each type of deck, accessory, and product indicated.

C. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

D. Product Certificates: For each type of steel deck, signed by product manufacturer.

E. Welding certificates.

F. Field quality-control test and inspection reports.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1. Power-actuated mechanical fasteners.

H. Research/Evaluation Reports: For steel deck.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated.

B. Welding: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

C. Fire-Test-Response Characteristics: Where indicated, provide steel deck units identical to those tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance Ratings: Indicated by design designations of applicable testing and inspecting agency.

2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.

D. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

E. FMG Listing: Provide steel roof deck evaluated by FMG and listed in its "Approval Guide, Building Materials" for Class 1 fire rating and Class 1-90 windstorm ratings.

F. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Deck: As Indicated

2.02 ROOF DECK

A. Steel Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 30, and with the following:

1. Galvanized Steel Sheet: ASTM A 653/A 653M.

2. Deck Profile: As indicated

3. Profile Depth: As indicated

4. Design Uncoated-Steel Thickness: As indicated.

5. Span Condition: Triple span or more.

6. Side Laps: Overlapped.

2.03 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Galvanizing Repair Paint: ASTM A 780.

G. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

### 3.02 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 30, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

H. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

### 3.03 ROOF-DECK INSTALLATION

A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches (38 mm) long, and as follows:

1. Weld Diameter: As indicated.

2. Weld Spacing: Weld edge and interior ribs of deck units with a mini mum of two welds per deck unit at each support. Space welds as indicated.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals as indicated and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.

2. Mechanically clinch or button punch.

3. Fasten with a minimum of 1-1/2-inch long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped 2 inches minimum.

D. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld or mechanically fasten to substrate to provide a complete deck installation.

1. Weld cover plates at changes in direction of roof-deck panels, unless otherwise indicated.

E. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

## 3.04 FIELD QUALITY CONTROL

A. Testing Agency: Contractor shall engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Field welds will be subject to inspection.

C. Testing agency will report inspection results promptly and in writing to Contractor and Architect.

D. Remove and replace work that does not comply with specified requirements.

E. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

## 3.05 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310

# DIVISION 5 - METALS

## SECTION 05400 - COLD-FORMED METAL FRAMING

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: the General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For each type of cold-formed metal framing product and accessory indicated.

C. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining Work.

1. For cold-formed metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

F. Research/Evaluation Reports: Evidence of cold-formed metal framing's compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements, including uncoated steel thickness, yield strength, tensile strength, total elongation, chemical requirements, ductility, and galvanized-coating thickness.

C. AISI Specifications: Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" or "Load and Resistance Factor Design Specification for Cold-Formed Steel Structural Members" and the following for calculating structural characteristics of cold-formed metal framing:

1. CCFSS Technical Bulletin: "AISI Specification Provisions for Screw Connections."

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:

1. Dietrich Industries, Inc.

2.02 MATERIALS

A. Steel Sheet: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:

1. Grade: 33 for minimum uncoated steel thickness of 0.0428 inch and less

2. Grade: 50, Class 1 or 2 for minimum uncoated steel thickness of 0.0538 inch and greater.

3. Coating: G90.

2.03 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:

1. Bracing, bridging, and solid blocking.

2. Web stiffeners.

3. End clips.

4. Gusset plates.

2.04 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123.

B. Mechanical Fasteners: Corrosion-resistant-coated, self-drilling, self-threading steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

2.05 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: ASTM A 780.

2.06 FABRICATION

A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.

1. Fabricate framing assemblies using jigs or templates.

2. Cut framing members by sawing or shearing; do not torch cut.

3. Fasten cold-formed metal framing members by bolting or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.

a. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

4. Fasten other materials to cold-formed metal framing by bolting, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

A. Grout bearing surfaces uniform and level to ensure full contact of bearing flanges or track webs on supporting concrete or masonry construction.

### 3.03 INSTALLATION, GENERAL

A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed metal framing according to ASTM C 1007, unless more stringent requirements are indicated.

C. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.

1. Cut framing members by sawing or shearing; do not torch cut.

2. Fasten cold-formed metal framing members by bolting or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.

    a. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

D. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.

E. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

F. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.

G. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

    1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

## 3.04 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings and all cut ends on fabricated and installed cold-formed metal framing with two coats of galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer that ensure cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

# DIVISION 5 - METALS

## SECTION 05500 - METAL FABRICATIONS

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. Section Includes:

1. Miscellaneous framing and supports.
2. Shelf angles.
3. Expanded Metal Mesh.

1.03 ACTION SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For the following:
1. Fasteners.
2. Shop primers.

C. Shop Drawings: Show fabrication and installation details.

## PART 2 - PRODUCTS

2.01 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

## 2.02 FASTENERS

A. General: Unless otherwise indicated, provide Type 316 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at interior concealed conditions only. Select fasteners for type, grade, and class required.

B. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.
   1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 2 (Type 316) stainless steel bolts, ASTM F593, and Type 316 stainless steel nuts, ASTM F594.

C. Dissimilar Metals Protective Coatings: Provide protective coatings on steel surfaces that will be in contact with dissimilar metals to prevent galvanic corrosion. Apply a bituminous coating, epoxy barrier coating, or manufacturer-recommended corrosion-inhibiting coating to all concealed or contacting surfaces where steel interfaces with aluminum, stainless steel, copper, galvanized steel, or other metals of differing electrochemical potential.

## 2.03 MISCELLANEOUS MATERIALS

A. Shop Primers: Provide primers that comply with Section 09900 Painting.

B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

   1. Use primer that contains pigments that make it easily distinguishable from zinc-rich primer.

C. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

D. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

E. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

F. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

## 2.04 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, not less than 8 inches from ends and corners of units and 24 inches o.c.

## 2.05 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

## 2.06 EXPANDED METAL

A. Material: Carbon steel: MIL-M-1794C
   1. Type II - Flattened.
   2. Class II – Hot-dipped Galvanized

B. Pattern: ¾” No. 9, 64% open

## 2.07 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

## 2.08 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.

   1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

D. Repair damaged surfaces with galvanizing repair method and paint in accordance with ASTM A780/A780M or by application of stick or thick paste material specifically designed for repair of galvanizing, as approved by Officer In Charge. Clean areas to be repaired and remove slag from welds. Heat, with a torch, surfaces to which stick or paste material will be applied. Heat to a temperature sufficient to melt the metals in the stick or paste. Spread molten material uniformly over surfaces to be coated and wipe off excess material.

# PART 3 - EXECUTION

## 3.01 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

## 3.02 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

## 3.03 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

C. Dissimilar Metals: Coat field-exposed or abraded steel surfaces and all steel surfaces placed in contact with dissimilar metals using the same protective coating system specified for shop application. Ensure continuous coverage at all contact points to prevent galvanic action.

END OF SECTION

# DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES

## SECTION 06100 - ROUGH CARPENTRY

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: the General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Terms and Conditions, City and County of Honolulu (not specifically attached) and Division 1 Specification Sections, apply to this Section.

1.03 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.

2. Framing with timber.

3. Wood blocking and nailers.

1.04 DEFINITIONS

A. Exposed Framing: Framing not concealed by other construction.

B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

C. Timber: Lumber of 5 inches nominal or greater in least dimension.

D. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. WCLIB: West Coast Lumber Inspection Bureau.

2. WWPA: Western Wood Products Association.

1.05 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.06 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 – PRODUCTS

2.01 WOOD PRODUCTS, GENERAL

A. Certified Wood: Materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.

3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.

4. Provide dressed lumber, S4S, unless otherwise indicated.

C. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.02 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat all rough carpentry unless otherwise indicated.

2.03 DIMENSION LUMBER FRAMING

A. Structural Framing: Grade as indicated.

1. Species: Douglas Fir Larch.

2.04 TIMBER FRAMING

A. Provide timber framing complying with the following requirements, according to grading rules of grading agency indicated:

1. Species and Grade: Douglas fir-larch, Grade as indicated.

2.05 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.

2. Nailers.

B. For items of dimension lumber size, provide No. 2 grade lumber and any of the following species: Douglas Fir Larch.

C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used, provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.06 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

## 2.07 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch ; selected from manufacturer's standard widths to suit width of sill members indicated.

B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to suit width of sill members indicated.

C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

D. Adhesives for Gluing to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

1. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate.

## PART 3 – EXECUTION

### 3.01 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

D. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.

2. Use copper naphthenate for items not continuously protected from liquid water.

I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

J. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be

exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

3.02 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

3.03 TIMBER FRAMING INSTALLATION

A. Install timber with crown edge up and provide not less than 4 inches of bearing on supports. Provide continuous members unless otherwise indicated; tie together over supports as indicated if not continuous.

B. Where beams or girders are framed into pockets of exterior concrete or masonry walls, provide 1/2-inch air space at sides and ends of wood members.

C. Install wood posts using metal anchors indicated.

D. Treat ends of timber beams and posts exposed to weather by dipping in water-repellent preservative for 15 minutes.

3.04 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06100

# DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES

## SECTION 06202 - INTERIOR FINISH CARPENTRY

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. Section Includes:

1. Interior trim.

B. Related Requirements:

1. Section 06100 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view and for framing exposed to view.

2. Section 09900 "Painting" for priming and back priming of interior finish carpentry.

3. Section 08870 “Security Glazing”.

1.03 ACTION SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data:

1. Interior trim.

C. Product Data Submittals: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details

1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment

manufacturer's written instructions for finishing treated material.

b. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

## 1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.

## 1.05 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet-work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

# PART 2 – PRODUCTS

## 2.01 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2. For exposed lumber, mark grade stamp on end or back of each piece.

2.02 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC1.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent, respectively.

2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

3. Do not use material that is warped or does not comply with requirements for untreated material.

4. Mark lumber with treatment-quality mark of an inspection agency approved by the ALSC's Board of Review.

2.03 INTERIOR TRIM

A. Moldings for Opaque Finish (Painted Finish): Made to patterns included in MMPA's "WM/Series Softwood Moulding Patterns."

1. Softwood Moldings: MMPA WM 4, P grade.

1. Species: Douglas Fir CVG or Mahogany (Meranti or Genuine).

2. Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.

2. Finger Jointing: Allowed.

3. Stop Pattern: See drawings for stops (match existing).

2.04 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

2.05 FABRICATION

A. Back out or kerf backs of the following members, except those with ends exposed in finished work:

1. Interior standing and running trim, except shoe and crown molds.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION:

3.01 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.03 INSTALLATION, GENERAL

A. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.

2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

## 3.04 INSTALLATION OF INTERIOR TRIM

A. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

1. Do not use pieces less than 24 inches long, except where necessary.

2. Stagger joints in adjacent and related standing and running trim.

3. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.

4. Use scarf joints for end-to-end joints.

5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.

6. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.

7. Fasten to prevent movement or warping.

8. Countersink fastener heads on exposed carpentry work and fill holes.

## 3.05 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements.

1. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

B. Adjust joinery for uniform appearance.

## 3.06 CLEANING

A. Clean interior finish carpentry on exposed and semi exposed surfaces.

B. Restore damaged or soiled areas and touch up factory-applied finishes if any.

3.07 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
   1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

   2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

# DIVISION 7 –– THERMAL AND MOISTURE CONTROL

## SECTION 07211- FOAM BOARD INSULATION

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. Section Includes: Provide Expanded Polystyrene Rigid Board Insulation & Recovery Board for roofing application

1.03 RELATED SECTIONS

A. Section 06100 – Rough Carpentry

B. Section 07510 – SBS Modified Bituminous Membrane Roofing

1.04 REFERENCES

A. Materials shall meet the property requirements of one or more of the following specifications as applicable to the specific product or end use:

1. American Society for Testing of Materials (ASTM):
   a. ASTM C 578: Standard Specification for Rigid Cellular Polystyrene Thermal Insulation.

   b. ASTM C 518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

   c. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.

2. International Code Council Evaluation Service (ICC-ES), Evaluation Report.

1.05 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: Submit data on product characteristics, performance criteria, and limitations, including installation instructions.

C. Sustainable Design: Submit manufacturer's sustainable design certifications as indicated.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain exterior building insulation through one source from a single manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original packaging.

B. Store and protect products in accordance with manufacturer's instructions. Store in a dry area and protect from water, direct sunlight, flame, and ignition sources. Do not install insulation that has been damaged or wet.
   1. In the event the board insulation becomes wet, wipe dry prior to installation.

PART 2 - PRODUCTS

2.01 FOAM PLASTIC BOARD INSULATION

A. Expanded Polystyrene Board Insulation: Comply with ASTM C 578,

   1. Thermal Resistance: (180 day real-time aging as mandated by ASTM C578, measured per ASTM C 518 at mean temperature of 75F): R-5 per inch minimum

   2. Compressive strength: Minimum 16 psi.

   3. Blowing Agent Formulation: Zero ozone depleting.

   4. Edge Condition: Square, Tongue & Groove, Ship-lap

   5. Surface Burning Characteristics (ASTM E 84): Flame spread less than 25, smoke developed less than 450, certified by independent third party such as Underwriters Laboratories (UL).

6. Indoor Air Quality: Compliance certified by independent third party such as GREENGUARD Indoor Air Quality Certified® and/or GREENGUARD Children and Schools Certified℠

7. Warranty: Limited lifetime warranty covering all ASTM C578 physical properties

8. Panel Size: Provide 1/2", 3/4", 1" thick by 4 ft. wide by 8 ft. long

2.02 RECOVERY BOARD

A. Fiberglass Mat Faced Gypsum Roof Board:

1. Thickness: 1/2 inch.

2. Width: 4 feet.

3. Length: 8 feet.

4. Weight: 2.0 lb/sq. ft.

5. Surfacing: Primed Fiberglass Mat.

6. Flexural Strength, Parallel (ASTM C473): 80 lbf, minimum.

7. Flute Span (ASTM E661): 5 inches.

8. Permeance (ASTM E96): Greater than 23 perms.

9. R-Value (ASTM C518): 0.56.

10. Water Absorption (ASTM C473): Less than 5 percent of weight.

11. Surface Water Absorption (ASTM C473): Nominal 1.0 grams.

12. Compressive Strength (Applicable Sections of ASTM C472): Nominal 900 pounds per square inch.

13. Flame Spread/ Smoke Development (ASTM E84): Not more than 0 Flame Spread, 0 Smoke Development

14. Combustibility (ASTM E136): Noncombustible

15. Fire resistance rating (UL 790 and ASTM E108): Class A

16. Mold Resistance (ASTM D3273): Scored a 10

## PART 3 - EXECUTION

### 3.01 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to rain for prolonged periods.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

### 3.02 INSTALLATION OF ROOF INSULATION

A. Foam-Plastic Board Roof Insulation: Adhesively secure and seal joints between units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer. Provide roof recovery boards as required to maintain Class A fire rating at non-combustible and combustible roof decks.

B. Hot-Mopped Installation over Thermal Insulation, under Modified Bitumen Roofing Systems:

1. Stagger roof board end and edge joints minimum 12" over installed insulation layers.

2. Stagger roof board end and edge joints minimum 6".

3. Prior to hot-mopping the roof boards to the substrates, ensure that the roof boards are dry, with free moisture content less than 1% by weight using a moisture meter that has been set to the gypsum scale.

4. Maximum asphalt application temperatures shall be 425°F (218°C) to 450°F (232°C). Application temperatures above these recommended temperatures may adversely affect roof system performance. Consult and follow roofing system manufacturer’s specifications for full mopping applications and temperature requirements.

5. Follow accepted roofing industry guidelines for full mopping applications such as EVT temperature guidelines, brooming and proper application rates of asphalt.

END OF SECTION

DIVISION 7 -– THERMAL AND MOISTURE CONTROL

SECTION 07421 - FORMED METAL WALL PANELS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY:

A. Section Includes:
   a. Exposed-fastener, lap-seam metal wall panels.

1.03 PREINSTALLATION MEETINGS:

A. Preinstallation Conference: Conduct conference at Project site.

1.04 ACTION SUBMITTALS:

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: For each type of product.

C. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

D. Samples: For each type of metal panel indicated.

1.05 INFORMATIONAL SUBMITTALS:

A. Product test reports.

B. Warranties: Samples of special warranties.

1.06 CLOSEOUT SUBMITTALS:

A. Maintenance data.

1.07 QUALITY ASSURANCE:

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.08 WARRANTY:

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

a. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

a. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS:

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

a. Wind Loads: As indicated on Drawings.

b. Other Design Loads: As indicated on Drawings.

c. Deflection Limits: For wind loads, no greater than 1/180 of the span.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

a. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.02 EXPOSED-FASTENER, LAP-SEAM METAL WALL PANELS:

A. Provide factory-formed metal panels designed to be field assembled by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for

weathertight installation.

B. Box-Rib-Profile, Exposed-Fastener Metal Wall Panels: Formed with raised, box-shaped ribs, evenly spaced across panel width, and with rib/recess sides angled 60 degrees or more.

a. Metallic-Coated Steel Sheet: Aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

i. Nominal Thickness: 0.022 inch

ii. Exterior Finish: Three-coat fluoropolymer.

iii. Color: As selected by Architect from manufacturer's full range.

b. Rib Spacing: 6.0 inches o.c.

c. Panel Coverage: 24 inches.

d. Panel Height: 1.5 inches.

2.03 MISCELLANEOUS MATERIALS:

A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 (Z275) hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

a. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.

b. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.

c. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch

thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

D. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.

b. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.

c. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.04 FABRICATION:

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

2.05 FINISHES:

A. Panels and Accessories
a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat.

PART 3 - EXECUTION

3.01 PREPARATION:

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal

panel manufacturer's written recommendations.

3.02 INSTALLATION:

A. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

a. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.

b. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.

c. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.

d. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.

e. Flash and seal panels with weather closures at perimeter of all openings.

B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.03 CLEANING:

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Installation Method of Adjunctive Work:

1. Vent Pipe Flashing: Construct a collar of base sheets to fit around

vents and overlap the flanges 6" on all sides, applied in asphalt. After base sheets are applied, form cant of plastic cement around base of vent.

2. Flashing Pan: Where column stubs, sign anchors, railing posts, tank supports, or other projections extend through the roof surface, install a minimum 4" high flashing collar with 6" flange. Install flange on top layer of base sheet in flashing compound. Seal flange with 6" wide strip of fiberglass fabric set in asphalt. Cut 2 collars of base sheet to fit snugly around collar and extend 6" and 12" beyond edge of flange, applied in asphalt. Fill the inside of collar with flashing compound. Cant the flashing compound around projection above the level of outside rim.

3.05 PROTECTION AND CLEANING:

A. Protection

1. Any work or materials damaged during the handling of bitumens and roofing materials shall be restored to their original (undamaged) condition or replaced.

2. Protective coverings shall be installed at all paving and exposed building walls adjacent to hoist and kettles prior to the start of work.

3. Where the building has no eaves, protection shall consist of at least 2 full widths of 30 lb. felt lapped not less than 6" and extending from ground level up to and over the walls onto the deck.

4. Protection shall remain in place for the duration of the roofing work.

B. Cleaning

1. Debris from roofing work shall be removed from the premises and disposed of upon completion and the roof left in good, clean condition.

2. Bitumen shall be removed immediately from surfaces other than those requiring bituminous roof coatings. Flashings other than those embedded in roofing surfaces shall not be mopped.

3.06 CLEANUP:

A. Precautionary Measure: See that no injury occurs to installed roofing, and no excess material is left on other portions of work or grounds. Clean up same to satisfaction of Officer-in-Charge. Take extreme care in mopping

during windy weather to prevent asphalt damaging other portions of the work. Do not mop flashings or counter flashings other than those embedded in roofing surfaces.

B. Cleaning: All asphalt drips shall be cleaned from affected surfaces immediately. Debris from roofing work shall be removed and disposed of from the premises upon completion, and the roof left in good, clean condition.

END OF SECTION

DIVISION 7 -– THERMAL AND MOISTURE CONTROL

SECTION 07510 – SBS MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY:

A. Related work:

1. Section 07620 – Metal Flashing and Trim

2. Section 07711 – Premanufactured Coping and Edge Systems

1.03 WORK INCLUDED: The work to be performed under this section shall include furnishing of all labor, materials, equipment, and tools for the complete installation of all new built-up reroofing and for all incidentals, as indicated on the drawings and/or as specified herein.

1.04 REFERENCE STANDARDS

References in these specifications to standards, test methods, codes, etc., are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout this specification section.

1. ASTM: American Society for Testing and Materials - Philadelphia, PA.

2. FM: Factory Mutual Engineering Research Corp. - Norwood, MA.

3. NRCA: National Roofing Contractors Association - Rosemont, IL.

4. CERTA: Certified Roofing Torch Applicator - Rosemont, IL.

5. OSHA: Occupational Safety and Health Administration - Washington, DC.

6. SMACNA: Sheet Metal and Air Conditioning Contractors Association - Chantilly, VA.

7. UL: Underwriters Laboratories - Northbrook, IL.

1.05 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Provide one, complete submittal package. Compartmentalized submittal packages will not be accepted or reviewed.

C. The Contractor shall submit to the Officer-in-Charge for approval six (6) complete sets of the manufacturer's material and application specifications for the roofing membrane system which the Contractor proposes to use.

D. Submit the following information:
   a. Certification in the form of a letter that the Roof System to be furnished complies with these specifications.

   b. Statement that each product to be furnished is recommended for the application shown for this project.

   c. Complete instructions for handling, storage, priming, installation and protection of the Membrane Roof System.

E. Submit copy of statement, in an approved form, signed by the roofing subcontractor and manufacturer, certifying that the products comply with these specifications and were the proper selections for the applications made, and that the installation methods complied with the manufacturer's printed instructions and their field representatives' verbal instructions and were proper and adequate for the condition of installation and use. Submit copy of roofing manufacturers accepted "notice of award" or equal that confirms that the manufacturer is aware of the project and has reviewed the system to be installed and that it is acceptable to the manufacturer.

F. Shop Drawings: Include scaled drawings showing plans, details and sections.

   a. Plans shall clearly show all adjacent materials for proper coordination including but not limited to plans, elevations, sections, details and attachments to other work.

   b. Tapered insulation noting all slopes and elevations shall be incorporated into the overall shop drawings. R-values, materials and attachments shall be clearly noted.

   c. Details of drains, units, vent pipes and all other project specific detail items shall be included.

d. Associated sheet metal flashing systems shall be included in shop drawings and clearly detailed in coordination with adjacent exterior finish materials. Sheet metal items shall be clearly noted regarding gauge, profile, fastening and compliance with applicable anticipated project specific wind uplift forces.

   Provide a system review letter from the manufacturer's technical department and that describes the complete system, installation methods, wind uplift ratings, pressures, wind speed warranty and all other aspects of the roofing system. Wind pressures shall be noted and confirming project specific wind uplift conditions and associated attachment methods and materials, as required to comply within this section, shall also be noted on the shop drawings and/or submitted separately.

e. Provide signed and sealed calculations from a Licensed Engineer in the State of Hawaii to confirm system compliance with the wind uplift requirements.

G. Installer Certificates: Signed by roofing manufacturer certifying that Installer is approved, authorized or licensed by manufacturer to install roofing system.

H. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing system.

I. Research/Evaluation Reports: For components of membrane roofing system.

J. Maintenance Data: For roofing system to include in maintenance manuals.

K. Warranty: Special warranty specified in this section.

L. Inspection Report: Copy of roofing system manufacturer's inspection report(s) of completed roof installation.

## 1.06 QUALITY ASSURANCE

A. Coordinate as required and be totally responsible for the full and satisfactory compatibility and performance between all Membrane Roofing materials used under this section with all other applicable and related sections which may be in direct contact with work of this section.

B. A project specific QA/QC manual shall be submitted by the Installer before any work has begun. This manual shall be reviewed at the pre-installation meeting and copies shall be kept at roof level in the possession of the Installer's

supervisory personnel. Approved shop drawings and all other pertinent submittal materials shall be kept at roof level in the possession of the Installer's supervisory personnel.

C. Take required steps and precautions to properly isolate and prevent of incompatibility between this system and adjacent work, in accordance with manufacturer's specifications, recommendations and instructions.

D. Installer Qualifications: Engage a single firm to assume undivided responsibility for installing all components of the Roofing System including all related sheet metal flashings and all other components. A qualified firm that is approved, authorized or licensed by roofing system manufacturer to install manufacturer's products and that is eligible to receive manufacturer's warranty. Installer shall provide evidence of at least 3 similar and successful installations including contact names and numbers regarding those projects.

E. Manufacturer Qualifications: Roofing membrane and all accessory products shall be provided by a single manufacturer with a minimum of 20 years experience in the direct production and sales of roofing systems. Manufacturer shall be capable of providing field service representation during construction and recommending appropriate installation methods.

F. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing as indicated and as documented per ASTM E548.

G. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.

H. Fire-Test Response Characteristics: Provide membrane roofing materials with the fire tested response characteristics indicated as determined by testing identical products per test method below by UL, FMG or another testing and inspection agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate marking of applicable testing and inspection agency.

    a. Exterior Fire Test Exposure: Class A; ASTM E108, for application and roof slopes indicated.

    b. Fire Resistance Ratings: ASTM E119; for fire resistance rated roof assemblies which roofing system is a part.

I. Pre-Installation Meeting: Hold a pre-installation meeting prior to application of this system to ensure proper substrate and installation conditions; require attendance of the Contractor, the roofing sub-contractor and manufacturer's

representative. Subcontractors whose work is on or adjacent to work of this section shall also be required to attend. The meeting shall, at a minimum, address the following:

a. Meeting with the City, testing and agency representative, roof installer, roof system manufacturer, deck installer and installers whose work interfaces with or affects the roofing system.

b. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

c. Review and finalize construction schedule and verify availability of materials, installer's personnel and equipment.

d. Examine deck substrate conditions and finishes for compliance with requirements including flatness and fastening.

e. Review structural loading limitations of roof deck during and after roofing.

f. Review base flashings, special roofing details, roof penetrations, roof drainage, curbs and other conditions that may affect the roof systems.

g. Review insurance requirements, certificates and governing regulations as applicable.

h. Review temporary protection of roofing system during and after installation.

i. Review roof observation and repair procedures after roofing installation.

J. Manufacturer's technical representative shall make weekly site visits and complete inspection reports that are submitted to the City. At least one visit per roof area not including final inspections. Final inspections by the roofing membrane manufacturer shall be coordinated at least 2 weeks in advance with the Contractor and City/City's consultants so that their attendance can be properly coordinated. Final inspection reports and signed/completed punch list reports by the roofing membrane manufacturer shall be submitted to the City. Submittal of the roofing warranty alone shall not be acceptable.

K. At concrete roof deck areas, test for capillary moisture by plastic sheet method according to ASTM D4263 or other manufactured approved method to properly determine if moisture content of concrete deck will allow for proper installation of roofing system. Waiting 28 days or more before installation over concrete deck areas is not an acceptable moisture test method.

L. The installation of pitch pockets is not acceptable. With proper coordination and planning they shall be avoided. Roof penetrations shall be properly coordinated and installed to meet the roofing manufacturer's requirements and NRCA guidelines. Conduit, vent pipe, supports, davits or similar penetrations shall be round or square tube. Whenever possible, a premanufactured flashing shall be installed over such items before "connections" are made. If "split" flashings are required then they shall be manufacturer's premanufactured type, installed, if possible, before field fabricated flashings are installed.

M. All roofing related sheet metal flashings shall be supplied by the roof system manufacturer as applicable and installed by the Roofing Contractor. Premanufactured coping and edge systems shall be included per the roofing manufacturer in the roofing systems warranty.

## 1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.

B. Storage: Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored on the roof overnight shall be stored on pallets. Rolls of roofing must be stored on ends. Store materials on the roof in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives and asphalt cutback products away from open flames, sparks or excessive heat. Cover all material using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.

C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.

D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, and will require removal and replacement at the Contractor's expense.

## 1.08 PROJECT/SITE CONDITIONS

A. Requirements Prior to Job Start:
   a. Notification: Give a minimum of 5 days' notice to the City and manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.

   b. Safety: Familiarize every member of the application crew with all fire and

safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.

B. Environmental Requirements:

a. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.

b. Temperature Restrictions - Asphalt: At ambient temperatures of 40 degrees Fahrenheit and below, special precautions must be taken to ensure that the specified Type IV asphalt maintains a minimum acceptable 400 degrees Fahrenheit at the point of sheet application. Do not overheat asphalt to compensate for cold conditions. The use of insulated handling equipment is strongly recommended. Use insulated hot luggers, mop carts, and kettle-to-roof supply lines. Use hand mops constructed with a smaller yarn head to facilitate short moppings. Do not fill luggers and mop carts to more than half their capacity at all times.

c. Temperature Restrictions - Cold Adhesive: At low temperatures, the specified cold adhesive becomes more viscous, making even distribution more difficult. The optimal temperature of the adhesive at point of application is 70 degrees to 100 degrees Fahrenheit. To facilitate application when ambient temperatures are below 50 degrees Fahrenheit, store the adhesive and roll goods in a warm place immediately prior to use. Bulk warmers, inline heaters, or other pre-heating equipment should be used to maintain the proper viscosity of the adhesive when using mechanical application equipment. Consider "flying in" the pre-cut roofing sheets in by placing them into the adhesive rather than rolling them into position. Roll or broom the sheets to ensure contact with the underlying adhesive. Suspend application in situations where the adhesive cannot be kept at temperatures allowing for even distribution.

d. Temperature Restrictions - Self-Adhesive Sheets: The minimum required substrate temperature at point of application is 40 degrees Fahrenheit. Maintain a minimum roof membrane material temperature above 60 degrees Fahrenheit. In low temperature conditions, keep materials warm prior to application. Suspend application in situations where the self-adhered base ply cannot be kept at temperatures allowing for proper adhesion.

C. Protection Requirements:

a. Membrane Protection: Provide protection against staining and

mechanical damage for newly applied roofing and adjacent surfaces throughout this project.

b. Torch Safety: Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractors Association (NRCA), and follow torch safety practices as required by the Contractor's insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew member shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.

c. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.

d. Site Condition: Complete, to the City's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

1.09 WARRANTY

Manufacturer's Warranty: Manufacturers standard form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roof system that fail in materials or workmanship within specified warranty period. Failure shall include roof leaks.

A. Special Warranty shall include roof membrane, base flashings, roof membrane accessories, roof insulation, fasteners, cover board, substrate board, vapor retarder, walkway products and other components of membrane roofing system.

B. Warranty Period: 30 years from the Date of Project Acceptance.

C. Wind Speed: Minimum 138 mph, Exposure B or greater if greater per structural drawings or wind study. Note: All manufacturer material and installation requirements to obtain wind speed warranty shall be included by the installer.

1.10 PRODUCT HANDLING:

A. Delivery of Materials: All roofing materials shall be delivered to the site in the original unbroken manufacturer's wrapping material and containers with the original labels thereon intact. If any bulk or unlabeled materials are to be used, a properly attested certificate from the manufacturer stating that such

materials comply with the requirements of the contract documents shall be furnished to the Officer-in-Charge prior to installation.

B. Storage of Materials at the Job Site

1. Roofing materials in storage shall be raised above the supporting surfaces, such as on pallets. Roll goods, insulation, and any other materials which absorb or are adversely affected by moisture shall be kept dry. Wet materials and/or materials which appear to have been deteriorated after getting wet shall not be permitted to be used on the job and shall be removed promptly.

2. Materials containing solvents shall be stored in a dry, cool area with proper fire and safety precautions.

3. If stored on other than the ground, all materials shall be distributed so that their resultant weight does not exceed the design live load on the deck (normally 20 lbs. per square foot on roofs and 40 lbs. per square foot on floors).

1.12 GUARANTEE

A. The Contractor shall furnish to the Officer-in-Charge a written guarantee on the roofing and flashing for a 2-year period after Project Acceptance Date. The guarantee shall be signed jointly by the Roofer and the Contractor and shall provide the following at no cost to the City:

1. Repair of roofing and flashing as necessary to seal leaks which are attributable to faulty materials and/or workmanship;

2. Repair or replacement of damage to the building and/or its furnishings when occasioned by such leaks; and

3. Inspection of the roofing together with the Officer-in-Charge or his designated representative, on or about the 1st and 2nd anniversaries of the Project Acceptance Date, and repair or replacement of roofing as necessary to eliminate interply blisters exceeding 12" in any dimension or to re-adhere felts which have separated at the joints to a depth of one inch or more from the edge.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Siplast

B. Polyglass (Basis of Design)
C. Soprema
D. Or approved substitute.

## 2.02 ROOFING SYSTEM ASSEMBLY/PRODUCTS

A. Base Sheet
   1. Base Sheet: A fiberglass reinforced, asphalt coated sheet with a polyolefin film backing, having a minimum weight of 20 lb/sq. The sheet shall conform to ASTM D 4601, Type II requirements. Paradiene 20 TG.

   2. Modified Base Sheet: A fiberglass reinforced, Styrene-Butadiene-Styrene (SBS) modified asphalt coated sheet having a minimum weight of 30 lb/sq. Paradiene 30 FR TG.

Temp Roofing Membrane: A high-melt, glass mat-reinforced modified asphalt sheet. Irex 40.

## 2.03 DESCRIPTION OF SYSTEMS

A. Roofing Membrane Assembly: A roof membrane assembly consisting of 2 plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Reinforcement mats shall be impregnated/saturated and coated each side with SBS modified bitumen blend and coated one side with a torch grade SBS bitumen blend adhesive layer. The adhesive layer shall be manufactured using a process that embosses the surface with a grooved pattern to provide optimum burn off of the plastic film and to maximize application rates. The cross sectional area of the sheet material shall contain no oxidized or non-SBS modified bitumen. The roof system shall pass 500 cycles of ASTM D5849 Resistance to Cyclic Joint Displacement (fatigue) at 14 degrees Fahrenheit. Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D5849 after heat conditioning performed in accordance with ASTM D5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.

   1. Modified Bitumen Base and Stripping Ply:
      a. Thickness (Minimum): 110 mils (ASTM D5147).
      b. Weight (Minimum per 100 Square Feet of Coverage): 76 lb.
      c. Maximum Filler Content in Elastomeric Blend: 35 percent by weight.
      d. Low Temperature Flexibility at -15 degrees Fahrenheit: PASS

(ASTM D5147).
e. Peak Load (Average) at 73 degrees Fahrenheit: 30 lbf/inch (ASTM D5147).
f. Peak Load (Average) at 0 degrees Fahrenheit: 75 lbf/inch (ASTM D5147).
g. Ultimate Elongation (Average) at 73 degrees Fahrenheit: 50 percent (ASTM D5147).
h. Dimensional Stability (Maximum): 0.1 percent (ASTM D5147).
i. Compound Stability (Minimum): 250 degrees Fahrenheit (ASTM D5147).
j. Approvals: UL Class listed, FM Approved (products shall bear seals of approval).
k. Reinforcement: Fiberglass mat or other meeting the performance and dimensional stability criteria.

2. Modified Bitumen Finish Ply:
a. Thickness (Average): 138 mils (ASTM D5147).
b. Thickness at Selvage (Coating Thickness) (Average): 118 mils (ASTM D5147).
c. Thickness at Selvage (Coating Thickness) (Minimum): 114 mils (ASTM D5147).
d. Weight (Minimum per 100 Square Feet of Coverage): 112 lb.
e. Maximum Filler Content in Elastomeric Blend: 35 percent by weight.
f. Low Temperature Flexibility at -15 degrees Fahrenheit: PASS (ASTM D5147).
g. Peak Load (Average) at 73 degrees Fahrenheit: 30 lbf/inch (ASTM D5147).
h. Peak Load (Average) at 0 degrees Fahrenheit: 75 lbf/inch (ASTM D5147).
i. Ultimate Elongation (Average) at 73 degrees Fahrenheit: 55 percent (ASTM D5147).
j. Dimensional Stability (Maximum): 0.1 percent (ASTM D5147).
k. Compound Stability (Minimum): 250 degrees Fahrenheit (ASTM D5147).
l. Granule Embedment (Maximum Individual Loss): 2.0 grams per sample (ASTM D5147).
m. Approvals: UL Class listed, FM Approved (products shall bear seals of approval).
n. Reinforcement: Fiberglass mat or other meeting the performance and dimensional stability criteria.
o. Surfacing: Ceramic granules.

B. Catalyzed Acrylic Resin Flashing System: A specialty flashing system consisting of a PMMA-based, fully reinforced membrane installed over a

prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application. Parapro 123.

2.04 ROOFING ACCESSORIES:

A. Roofing Adhesives

1. Mopping Asphalt: Type IV asphalt certified for full compliance with the requirements listed in Table I, ASTM D312. Each container or bulk shipping ticket shall indicate the equiviscous temperature, EVT, the finished blowing temperature, FBT, and the flash point, FP. Mopping asphalt shall be approved in writing by the roof membrane manufacturer.

2. Membrane Cold Adhesive: An asphalt, solvent blend conforming to ASTM D4479, Type II requirements.

3. Mastic: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D4586 Type II requirements.

4. Membrane Adhesive: A single component, modified asphalt adhesive designed for application of the specified roof membrane system.

B. Primers

1. Primer: An asphalt/solvent blend meeting ASTM D41, South Coast Air Quality District and Ozone Transport Commission requirements.

2. Primer: An asphalt, solvent blend conforming to ASTM D41 requirements.

3. Primer for Self-Adhesive Sheets: A quick drying, low-VOC, water-based, high-tack primer specifically designed to promote adhesion of roofing and waterproofing sheets to approved substrates. Primer shall meet South Coast Air Quality District and Ozone Transport Commission requirements.

4. Conductive Primer/Conductive Layer: Provide roofing manufacturer-approved conductive primer or conductive layer required for electronic leak detection testing. Conductive primer/conductive layer shall be compatible with the substrate, roofing membrane, vapor retarder/temp roof, cover board, insulation assembly, and related roofing components. Provide written confirmation from the roofing manufacturer that the conductive primer/conductive layer is acceptable for use within the

specified roofing assembly and will not affect the specified roofing warranty.

C. Sealant: A moisture-curing, elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials.

D. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.

E. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4-inch dimension.

F. Fasteners:
   1. Base Sheet Fasteners: Base sheet fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable base sheet fasteners for specific substrate types are listed below.

      a. Plywood Decks: A 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum one-inch metallic head.

      b. Wood/Plywood Decks: Insulation mechanical fasteners for wood/plywood decks shall be factory coated for corrosion resistance. The fastener shall conform meet or exceed Factory Mutual Standard 4470 and when subjected to 30 Kesternich cycles, show less than 15 percent red rust. Acceptable insulation fastener types for wood/plywood decks are listed below.

         1. A fluorocarbon coated screw type roofing fastener having a minimum 0.220-inch thread diameter. Plates used in conjunction with the fastener shall be a metal type having a minimum 3-inch diameter, as supplied by the fastener manufacturer.

      c. Standard RoofGrip Drill Point Fastener by OMG; Agawam, MA or approved substitute.

   2. Flashing Reinforcing Sheet Fasteners for Wood/Plywood Substrates to Receive Flashing Coverage: Fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable fasteners for specific substrate types are listed below.

a. Wood/Plywood Substrates: A 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum one-inch head.

1. Square Cap by Maze Nails; Peru, IL.

2. Simplex Cap Nail by Simplex Nails, Inc., Americus, GA.

3. Or approved substitute.

G. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.

1. Thickness: 0.217-inch.

2. Weight: 1.8 lb/square feet.

3. Width: 30-inches. Paratread or approved substitute.

PART 3 - EXECUTION:

3.01 Applicator and Manufacturer:

A. Roofing Contractor shall be approved by the roofing materials manufacturer or his authorized supplier.

B. The manufacturer or his authorized supplier is to be notified one (1) week before the roofing work is started. The manufacturer's representative shall inspect and see that the surface has been properly prepared and that sufficient materials are delivered to the site to complete the contract in accordance with the specifications and to keep check on the materials and inspect the job at least two times during the progress of the roofing work.

C. Temperature Checking Instrument: Provide for use by the Officer-in-Charge a suitable and accurate instrument for his use in checking the temperature of the asphalt (which shall not be heated above 375°F.) for the hot process roof system.

3.02 PREPARATION OF SURFACES:

A. Sweep or vacuum all surfaces, removing all loose aggregate and foreign substances prior to commencement of roofing.

B. All surfaces on which or against which this work is to be applied shall be smooth, dry, free from foreign materials, and from defects which may affect this work. Notify Officer-in-Charge of any defective condition which shall be corrected before commencing work. The laying of materials by this Contractor shall be considered indication of the acceptance by him of the basic surface.

C. Repair defective surfaces such as blisters (slit and let dry), splits, cracks, etc., in accordance with good roofing practice. Notify the Officer-in-Charge of such findings before commencing with any repair work.

D. Primer for Self-Adhesive Sheets: Apply the specified high-tack primer by roller or spray in an even film. Refer to manufacturer's literature for the approved rate of application over various substrate types. Allow the primer to dry until it leaves a slightly sticky surface without transfer when touched.

E. Asphaltic Primer: Prime metal and concrete and masony surfaces with a uniform coating of the specified asphalt primer.

3.03 SUBSTRATE PREPARATION:

A. Base Sheet Securement to Prepared Substrate: Lay the base sheet over entire area to be roofed, lapping sides 3-inches and ends 6-inches. Using the specified fasteners, fasten each sheet every 9-inches through laps and stagger fasten the remainder of the sheet in 2 rows on nominal 12-inch centers with fasteners in each row on 12-inch centers. Increase the fastening pattern by 70 percent at the perimeter of the roof and 160 percent at the corners.

B. Base Sheet Securement to Prepared Substrate: Lay the base sheet over entire area to be roofed, lapping sides 3-inches and ends 6-inches. Using the specified fasteners, fasten each sheet every 7-1/2 inches through laps and stagger fasten the remainder of the sheet in 2 rows on nominal 12-inch centers with fasteners in each row on 10-inch centers. Increase the fastening pattern by 70 percent at the perimeter of the roof and 160 percent at the corners.

3.04 ROOF MEMBRANE INSTALLATION:

A. Membrane Application: Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of roofing membrane components shall immediately follow application of base sheet and/or insulation as a continuous operation.

B. Aesthetic Considerations: Construction of an aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules, and exercise care

in ensuring that the finished application is acceptable to the Owner.

C. Kettles and Tankers: Kettles and tankers shall be equipped with accurate, fully readable thermometers. Do not heat asphalt to or above its flash point. Avoid heating at or above the FBT, should conditions make this impractical, heating must be no more than 25 degrees Fahrenheit below the EVT and no more than 25 degrees Fahrenheit above EVT.

D. Asphalt Temperatures: If the EVT information is not provided, the following asphalt temperature shall be observed. Maximum heating temperature shall be 525 degrees Fahrenheit. Minimum application temperature shall be 400 degrees Fahrenheit.

E. Asphalt Moppings: Ensure that all moppings do not exceed a maximum of 25 lb/sq. Mopping shall be total in coverage, leaving no breaks or voids.

F. Membrane Adhesive Application: Membrane adhesive can be applied by roller, squeegee or spray unit. Apply cold adhesive in a smooth, even, continuous layer without breaks or voids. Utilize an application rate of 2 to 2-1/2 gal/sq over irregular or porous substrates. Utilize an application rate of 1-1/2 to 2 gal/sq for interply applications. Double the adhesive application rate at the end laps of granule surfaced sheets. Refer to the manufacturer's inter-ply flashing detail at the locations that are to receive the specified catalyzed acrylic resin primer/flashing system.

G. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.

H. Roofing Application: Apply all layers of roofing free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets.

1. Apply all layers of roofing perpendicular to the slope of the deck.

2. Fully bond the base ply to the prepared substrate, utilizing minimum 3-inch side and end laps. Apply each sheet directly behind the asphalt/torch/cold adhesive applicator. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3-feet.

3. Fully bond the finish ply to the base ply, utilizing minimum 3-inch side and end laps. Apply each sheet directly behind the asphalt/torch/cold adhesive applicator. Stagger end laps of the finish ply a minimum 3-feet. Cut a dog ear angle at the end laps on overlapping selvage edges. Using

a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger side laps of the finish ply a minimum 12-inches from side laps in the underlying base ply. Stagger end laps of the finish ply a minimum 3-feet from end laps in the underlying base ply.

4. Maximum sheet lengths and special fastening of the specified roof membrane system may be required at various slope increments where the roof deck slope exceeds 1/2-inch per foot. The manufacturer shall provide acceptable sheet lengths and the required fastening schedule for all roofing sheet applications to applicable roof slopes.

I. Granule Embedment: Broadcast mineral granules over all bitumen overruns on the finish ply surface, while the bitumen is still hot or the adhesive is soft, to ensure a monolithic surface color.

J. Torch-Applied Flashing Application (Foil-Surfaced): Cut the cant backing sheet into 12-inch widths and peel the release film from the back of the sheet. Set the sheet into place over the primed substrate extending 6-inches onto the field of the roof area and 6-inches up the vertical surface utilizing minimum 3-inch laps. Set the non-combustible cant into place dry prior to installation of the roof membrane base ply. Flash walls and curbs using the reinforcing sheet and the metal foil flashing membrane. After the base ply has been applied to the top of the cant, prime the base ply surfaces to receive the reinforcing sheet. Fully adhere the reinforcing sheet, utilizing minimum 3-inch side laps onto the primed base ply surface and up the primed wall or curb to the desired flashing height. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using 3-foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the metal foil flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4-inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall or curb to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9-inch centers. (See manufacturer's schematic for visual interpretation).

K. Torch-Applied Flashing Application (Granule-Surfaced): Cut the cant backing sheet into 12-inch widths and peel the release film from the back of the sheet. Set the sheet into place over the primed substrate extending 6-inches onto the field of the roof area and 6-inches up the vertical surface utilizing minimum 3-inch laps. Set the non-combustible cant into place dry prior to installation of

the roof membrane base ply. Flash walls and curbs using the reinforcing sheet and the granule-surfaced flashing membrane. After the base ply has been applied to the top of the cant, prime the base ply surfaces to receive the reinforcing sheet. Fully adhere the reinforcing sheet, utilizing minimum 3-inch side laps onto the primed base ply surface and up the primed wall or curb to the desired flashing height. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the granule-surfaced flashing into place using 3-foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4-inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall or curb to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9-inch centers. (See manufacturer's schematic for visual interpretation).

L. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the manufacturer.

M. Sealant: Apply a smooth continuous bead of the specified sealant at the exposed finish ply edge transition to metal flashings incorporated into the roof system.

## 3.05 FIELD QUALITY CONTROL AND INSPECTIONS

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

B. Notification of Completion: Notify the manufacturer by means of manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

C. Final Inspection/Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.

D. Issuance of the Guarantee: Complete all post installation procedures and meet the manufacturer's final endorsement for issuance of the specified

guarantee.

E. Electronic Leak Detection Testing:

1. Provide electronic leak detection testing of the completed SBS modified bituminous membrane roofing system and associated membrane flashing areas by a qualified independent testing agency.

2. Testing shall be performed in accordance with ASTM D7877 and ASTM D8231, as applicable to the selected testing method.

3. Test the SBS modified bituminous membrane roofing areas and associated membrane flashing areas that are accessible and suitable for the selected electronic leak detection testing method.

4. Perform testing after membrane installation and before placement of overlying materials, walkway pads, equipment supports, protection materials, or other work that may obstruct testing. Perform final testing at 100 percent completion of the modified bituminous membrane roofing areas unless otherwise accepted by the Officer-in-Charge.

5. Testing criterion: no breaches in membrane reported.

6. Mark reported breach locations, protect surrounding work, and repair reported breaches in accordance with the roofing manufacturer's written requirements.

7. Retest repaired areas until no breaches are reported.

8. Submit final electronic leak detection testing report including test date, testing standard/method, weather and roof conditions, test equipment used, test limits, reported breach locations if any, repair documentation, retest results, and testing limitations.

3.06 WORKMANSHIP: All work shall be done in a first-class workmanlike manner by skilled and experienced roofers, and in a manner that will not mar or injure the work of other trades. Asphalt daubed or splashed onto adjoining work shall be removed and the surface restored to its original appearance. Asphalt runs, sags and streaks over sheet metal surfaces shall be carefully removed without scratching the metal.

3.07 APPLICATION: The following manufacturer's specifications for installation are to be used for standard and quality only; other manufacturer's methods may be used subject to the approval of the Officer-in-Charge provided all other requirements of this specification are complied with. Exposed plies at end of day's work shall be glazed with hot bitumen to protect against moisture penetration before work is

resumed.

A. Installation Method of Adjunctive Work:

1. Vent Pipe Flashing: Construct a collar of base sheets to fit around vents and overlap the flanges 6" on all sides, applied in asphalt. After base sheets are applied, form cant of plastic cement around base of vent.

2. Flashing Pan: Where column stubs, sign anchors, railing posts, tank supports, or other projections extend through the roof surface, install a minimum 4" high flashing collar with 6" flange. Install flange on top layer of base sheet in flashing compound. Seal flange with 6" wide strip of fiberglass fabric set in asphalt. Cut 2 collars of base sheet to fit snugly around collar and extend 6" and 12" beyond edge of flange, applied in asphalt. Fill the inside of collar with flashing compound. Cant the flashing compound around projection above the level of outside rim.

3.05 PROTECTION AND CLEANING:

A. Protection

1. Any work or materials damaged during the handling of bitumens and roofing materials shall be restored to their original (undamaged) condition or replaced.

2. Protective coverings shall be installed at all paving and exposed building walls adjacent to hoist and kettles prior to the start of work.

3. Where the building has no eaves, protection shall consist of at least 2 full widths of 30 lb. felt lapped not less than 6" and extending from ground level up to and over the walls onto the deck.

4. Protection shall remain in place for the duration of the roofing work.

B. Cleaning

1. Debris from roofing work shall be removed from the premises and disposed of upon completion and the roof left in good, clean condition.

2. Bitumen shall be removed immediately from surfaces other than those requiring bituminous roof coatings. Flashings other than those embedded in roofing surfaces shall not be mopped.

3.06 CLEANUP:

A. Precautionary Measure: See that no injury occurs to installed roofing, and no excess material is left on other portions of work or grounds. Clean up same to satisfaction of Officer-in-Charge. Take extreme care in mopping during windy weather to prevent asphalt damaging other portions of the work. Do not mop flashings or counter flashings other than those embedded in roofing surfaces.

B. Cleaning: All asphalt drips shall be cleaned from affected surfaces immediately. Debris from roofing work shall be removed and disposed of from the premises upon completion, and the roof left in good, clean condition.

END OF SECTION

DIVISION 7 -– THERMAL AND MOISTURE CONTROL

SECTION 07620 – METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY:

A. This Section includes, but is not limited to, the following sheet metal flashing and trim:

1. counterflashing and counterflashing extensions.

2. Scuppers

3. Metal flashings and counter flashings required in coordination with waterproofing and roofing systems.

4. Misc. Sheet metal flashings

B. Related work:

1. Section 07510 – SBS Modified Bituminous Membrane Roofing

2. Section 07711 – Premanufactured Coping and Edge Systems

1.03 PERFORMANCE REQUIREMENTS:

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

C. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.04 SUBMITTALS:

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Provide one, complete submittal package. Compartmentalized packages will not be reviewed or accepted.

C. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

D. Shop Drawings: Show profiles, joining method, accessory location, anchorage and flashing details, adjacent construction interface, and dimensions.

E. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Sheet Metal Flashing: 12 inches (300 mm) long. Include specified joints, fasteners, cleats, clips, closures, and other attachments.

2. Trim: 12 inches (300 mm) long. Include fasteners and other exposed accessories.

3. Accessories: Full-size Sample.

1.05 QUALITY ASSURANCE:

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" and the NRCA’s Roofing and Waterproofing Manual in coordination with requirements of roofing and waterproofing systems (the more stringent shall apply). Conform to dimensions and profiles shown unless more stringent requirements are indicated.

B. Warranties:

1. Warranty flashing and sheet metal work to be free of defects in materials and workmanship. Warranty period shall be two years beginning at Date of Substantial Completion. Flashings integral to roofing / waterproofing systems shall be combined with those warranties.

2. Finish Warranty: Warranty fluoropolymer coating to remain free of checking, crazing, peeling, chalking or fading for a period of twenty years, beginning at Date of Substantial Completion.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section.

1. Meet with Owner, Architect, Engineer, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials and roof-mounted equipment.

2. Review methods and procedures related to sheet metal flashing and trim.

3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.06 DELIVERY, STORAGE, AND HANDLING:

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.07 COORDINATION:

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation. Fabricate flashings from materials noted below as most

appropriate in regards to the system that the flashing is being integrated with and / or adjacent to and in coordination with the drawings and finish schedules. Concealed flashings may be mill finish.

1.08 GUARANTEE: This Contractor shall give to the Officer-in-Charge a written guarantee which shall guarantee for a period of two (2) years from the date of acceptance of the contract. All sheetmetal work to be absolutely watertight and agreeing to repair any and all leaks at his own expense, provided such leaks are due to faulty materials or workmanship installed by him.

## PART 2 - PRODUCTS

### 2.01 SHEET METAL MATERIALS

A. Copper: ASTM B370, cold rolled copper sheet, H00 or H01 temper.

1. Thickness: 20 oz/sq. ft.

2. Prepatinated Copper-Sheet Finish: Dark Brown, prepatinated in accordance with ASTM 882.

B. Stainless-Steel Sheet: Minimum 24 ga., AISI Type 316. Concealed but not coated or exposed counter flashings.

C. Pre-finished steel: 22-24 ga. G-90 galvanized, commercial steel, extra smooth, primed and finished on one side with Kynar/Hylar based fluoropolymer coating of 1.0 mil total dry film thickness, and on the reverse side, with a wash coat of .03 to .4 mil dry film thickness. A strippable plastic film should protect the finish during fabrication and installation.

1. Color to be selected by owner from standard color chart.

2. Collector Head, 22ga min.

3. Downspouts, 22 ga min.

### 2.02 UNDERLAYMENT MATERIALS

A. Self-adhered membrane: GCP Ultra or approved substitute membrane with similar adhesive (not asphaltic based adhesive), ASTM D 1970.

### 2.03 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Fasteners: Provide stainless (where applicable) steel wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads. Coordinate fastener type and material with metal flashing material.

1. Exposed Fasteners: Self-drilling screws (sheet metal to sheet metal) or wood screws (sheet metal to wood) with hex heads and neoprene washers.

2. Blind Fasteners: Stainless-steel rivets.

3. Solder for Copper: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead.

4. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.

5. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

6. Silicone Sealant: Type S, Grande NS, Class 25. DOW 795 or approved substitute.

7. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.

8. Bituminous Coating: For separation of dissimilar materials. Cold-applied asphalt mastic, SSPC-Paint 12, compounded for minimum 30-mil dry film thickness. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

9. Solder: ASTM B 32; Provide 50-50 tin/lead or lead free alternative of similar or greater strength.

10. Flux: Muriatic acid neutralized with zinc or approved brand of soldering flux.

## 2.04 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" and the NRCA's Roofing and Waterproofing Manual that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

1. Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.

F. Solder and seal copper metal joints except those indicated or required to be expansive type joints. Tin edges of copper sheets and cleats at soldered joints. After soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing clear water rinse. Wipe and wash solder joints clean.

G. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

H. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" and NRCA's Roofing and Waterproofing Manual for application but not less than thickness of metal being secured.

I. Counterflashing and Counterflashing Extensions: Fabricate with length sufficient to lap base flashing fasteners 3 inches minimum. Fry Reglet, Co, SM and ST Type as applicable, or approved subsitute.

J. Flashing Receivers: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Lap, rivet and solder joints. Turn up back edge of reglet-mounter receivers 1/2 inch. Turn up end dams 4 inches. Form receiver for counterflashing along front edge.

K. Expansion Joint Cover: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Provide one inch high standing seams at joints, with 3 inch laps on vertical face. Provide drive cleat joints, filled with butyl sealant, 30 feet on center. Provide mitered, riveted and soldered corners. Solder end caps or flat plates with 4 inch flanges at end terminations. Fabricate continuous cleats with 3 inch laps.

L. Curb Covers/ Cap Flashings: Fabricate with length sufficient to lap base flashing fasteners 2 inches minimum. Solder all joints.

2.05 FINISHES:

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Minimum two coat fluoropolymer finish for all exposed metals. Metals not exposed and not coated shall be 316 stainless steel.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.01 WORKMANSHIP: All workmanship shall be equal to the best standard of practice, work accurately form to sizes, shapes and dimensions as detailed on drawings, with all lines, angles, in true alignment, and installed true to plumb or to required planes, without defects, sags, bulges, and wages; intersections coped or flanged to accurate fit and rigidly secured; also work shall be so formed, fabricated, and installed as to adequately provide for all possible expansion and contraction in the completed work as well as to ensure a weather and watertight installation. All exposed edges shall be beaded or returned, and all sheetmetal work closely fitted over base work with all necessary stiffeners, anchors, straps, etc., as necessary.

3.02 Sheet metal work shall be in minimum of 10-foot sections. Joints shall have a

minimum of 6-inch laps.

3.03 PAINTING: Sheet metal shall receive one coat of 221-12 zinc dust primer and two (2) coats of 312-XX Alkyd High Gloss Enamel Finish by W. P. Fuller or approved substitute before installation. Color shall match existing building surface.

3.04 FLASHING PAN: Where column stubs, sign anchors, railing posts, pipe supports, or other projects extend through the roof surface, install a minimum 4" high flashing collar with 6" flange. Install flange on top layer of base sheet in flashing compound. Seal flange with 6" wide strip of fiberglass fabric set in asphalt. Cut 2 collars of base sheet to fit snugly around collar and extend 6" and 12" beyond edge of flange, applied in asphalt. Fill the inside of collar with flashing compound. Cant the flashing compound around projection above the level of outside rim. Provide sheet metal cover flashing over flashing pan.

3.05 EXAMINATION: Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.

A. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. All reroofing work shall be subject to inspection at any time to insure strict compliance with plans and specifications. Test areas shall be cut whenever requested by the Officer-in-Charge to verify conformance to the specifications. Any unsatisfactory areas shall be remedied by the installer.

3.06 INSTALLATION, GENERAL:

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
   1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

1. Coat side of stainless-steel and lead sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.

2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.

3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and butyl sealant.

E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for screws.
   1. Stainless Steel: Use stainless-steel fasteners.

H. Seal non-soldered joints with butyl sealant as required for watertight construction.
   1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).

   2. Prepare joints and apply sealants to comply with requirements in Division 7 Section 07920 "Sealants."

I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm) except where pretinned surface would show in finished Work.

1. Do not solder prepainted, metallic-coated steel sheet.

2. Pretinning is not required for zinc-tin alloy-coated stainless steel and lead.

3. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

3.07 ROOFING & WATERPROOFING FLASHING INSTALLATION:

A. General: Install sheet metal roof flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual" and the NRCA's Roofing and Waterproofing Manual. Provide concealed fasteners unless otherwise indicated, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Curb-Mounted Receivers: Coordinate installation of receivers with installation of equipment curbs and equipment. Install receivers over tops of curbs and secure with stainless steel nails 12-inches (300-mm) on center. Lap, rivet and solder receiver joints.

C. Reglet-Mounted Receivers: Carefully saw cut 1/4 inch high wide by 1-1/2 inch deep reglet into masonry joint below existing through-wall flashing. Insert receiver, with 1/4 inch upturned lip, so flange extends 1-1/4 inch into reglet. Lap, rivet and solder all joints, except provide drive cleat expansion joints 30 feet on center. Repoint reglet with mortar. Install all other reglets at EIFS / Stucco area in coordination with those systems and per the manufacture's recommended applications.

D. Counterflashing Extensions: Fasten counterflashing extensions to through-wall flashing, receivers and integral equipment caps/ counter flashings with stainless steel screws with neoprene washers, 24 inches on center, minimum 3 per side of curbs. Lap joints a minimum of 4 inches and bed with butyl sealant.
1. Secure in a waterproof manner by means of stainless steel screws with neoprene washers 24-inches on center.

E. Pipe/ Conduit Enclosures: Where mechanical, electrical or other grouped piping/ conduits penetrate the roofing system, install wood curbs constructed to provide 8 inches of vertical clearance above the roof insulation surface. Reroute existing or install new pipes/ conduits to configuration shown on the Drawing so pipes/ conduits slope away from curb. Field verify dimensions and fabricate enclosure

as shown on Drawings. Solder all joints, except as noted. Reconnect mechanical equipment, and verify units function properly. Fill enclosure with insulation.

3.08 MISCELLANEOUS FLASHING INSTALLATION:

A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment.

3.09 CLEANING AND PROTECTION:

A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

B. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

C. Upon completion of the work, this Contractor shall remove all rubbish, waste materials, and equipment from the premises, and leave same in clean acceptable condition, satisfactory to the Officer-in-Charge.

END OF SECTION

DIVISION 7 -– THERMAL AND MOISTURE CONTROL

SECTION 07711 – PREMANUFACTURED COPING AND EDGE SYSTEMS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY:

A. Work included: Factory fabricated and finished coping and edge system.

B. Work shall be performed by roofing contractor as integral part of roofing system assembly and warranty.

C. Systems shall be supplied by the roofing manufacturer.

D. Related work:

1. Section 07510 – SBS Mod Bituminous Membrane Roofing

2. Section 07620 – Metal Flashing and Trim

1.03 CODES AND REFERENCES:

A. ANSI / SPRI ES-1 (most current version of ES-1 shall apply)

B. IBC Including Local Amendments

1.04 SUBMITTALS:

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Provide one complete submittal package. Compartmentalized packages will not be reviewed or accepted.

C. Product Data: Provide manufacturer’s product and complete installation data for all materials in this specification.

D. Shop Drawings: Show profiles, joining method, accessory location, anchorage and flashing details, adjacent construction interface, and dimensions.

E. Samples: Provide Color Charts of standard available colors

F. Installation Guide: The product manufacturer shall provide a written installation guide.

1.05 QUALITY ASSURANCE:

A. ANSI/SPRI ES-1 Use the current edition of ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems. All configurations, gauges, attachments and other items shall meet or exceed testing and design criteria related to ES-1.

1.06 PRODUCT HANDLING:

A. All material shall arrive in the manufacturer's original sealed, labeled containers.

B. Store materials in a dry, protected, well-vented area. The contractor shall report damaged material immediately to the delivering carrier and note such damage on the carrier's freight bill of lading.

C. Remove protective plastic surface film immediately after installation.

1.07 JOB CONDITIONS:

A. Verify that other trades with related work are complete before mounting coping covers.

B. Mounting surfaces shall be straight and secure; substrates shall be of proper width.

C. Refer to the construction documents, shop drawings and manufacturer's installation instructions.

D. Coordinate installation with roof membrane manufacturer's installation instructions before starting.

1.08 WARRANTY:

A. The system shall be warranted to perform over the term of the specified roofing system warranty and shall be warranted to not blow off or cause membrane failure, even in wind conditions up to 130 mph or the manufacturer shall replace or repair their materials. A 20 year standard Kynar finish warranty shall also be included. Supplied and installed by roofing contractor as part of overall roofing system warranty.

1.09 GUARANTEE: This Contractor shall give to the Officer-in-Charge a written guarantee

which shall guarantee for a period of two (2) years from the date of acceptance of the contract. All sheet metal work to be absolutely watertight and agreeing to repair any and all leaks at his own expense, provided such leaks are due to faulty materials or workmanship installed by him.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS:

A. Carlisle or approved substitute to be provided by the roofing system manufacturer.

### 2.02 MATERIALS:

A. Aluminum: 3003-H14 alloy, meeting ASTM B209-02a. Minimum 0.032" thickness.

B. Finish: Three Coat Opaque Finish: Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat with the top coat being a clear coat.

### 2.03 PARAPET COPING SYSTEM:

A. Coping: Metal coping cap with anchor/support cleats for capping any parapet wall. The system shall be maintenance free and does not require exposed fasteners. Joints shall be a butt type with concealed splice plates.

B. Performance Characteristics:

1. Coping sections shall expand and contract freely while locked in place on anchor cleats.

2. Coping sections shall lock to anchor cleats by mechanical pressure from hardened stainless steel springs factory attached to anchor cleats.

3. Splice plates include factory applied dual non-curing sealant strips capable of providing a watertight seal.

C. Metal: Type of metal and gauge to be installed that will perform per local wind zone conditions and that is recommended for use by the manufacturer for this project.

D. Coping cap: Max. Length of 12'-0", widths to 24" manufactured to job requirements.

E. Coping vertical face and back leg: 2-1/2" to 12-1/2" manufactured to job requirements.

F. Concealed splice plates: Finished to match finish of coping cap with factory applied dual non-curing sealant strips.

G. Anchor/Support Cleat: Cleat with stainless steel spring mechanically locked to cleat normally 12" wide @ 6'-0" on center. Mechanically fastened as indicated and detailed.

H. Fasteners: Shall provide a minimum pull out resistance of 240# (109 kg) per substrate application. No exposed fasteners shall be permitted. Fasteners shall be electrolytically compatible.

I. Finishes: Coordinate with finish schedule and from manufacturer's full catalogue.

2.04 ROOF EDGING SYSTEM:

A. Decorative metal fascia with continuous aluminum waterdam to terminate roofing at perimeter. The system shall be watertight with concealed splice plates and no exposed fasteners.

1. For standard sizes with 2" waterdam cant for all membrane attachments.

B. PERFORMANCE CHARACTERISTICS

1. Roof edging shall lock membranes, preventing wind pull-back.

2. Fascia shall freely thermal cycle on waterdam, preventing periodic maintenance.

3. Fascia may be factory modified for true radius application.

C. Fascia metal gauge: Type of metal and gauge to be installed that will perform per local wind zone conditions and that is recommended for use by the manufacturer for this project.

D. Fascia: standard 12'-0" long with matching concealed joint splice plates.

E. Waterdam: Coordinate type and gauge with fascia material. 12'-0" long.

F. Fasteners: As recommended by the manufacturer per substrate application. No exposed fasteners permitted.

G. Exterior fascia finishes: To be approved by Owner.

2.05 ACCESSORIES:

A. Corners, end caps, pier caps, etc. shall be fabricated by the coping manufacturer.

B. Welded or quick lock assembly shall be used to maintain watertight integrity.

PART 3 - EXECUTION

3.01 WORKMANSHIP: All workmanship shall be equal to the best standard of practice, work accurately form to sizes, shapes and dimensions as detailed on drawings, with all lines, angles, in true alignment, and installed true to plumb or to required planes, without defects, sags, bulges, and wages; intersections coped or flanged to accurate fit and rigidly secured; also work shall be so formed, fabricated, and installed as to adequately provide for all possible expansion and contraction in the completed work as well as to ensure a weather and watertight installation. All exposed edges shall be beaded or returned, and all sheet metal work closely fitted over base work with all necessary stiffeners, anchors, straps, etc., as necessary.

3.02 Sheet metal work shall be in minimum of 10-foot sections. Joints shall have a minimum of 6-inch laps.

3.03 PAINTING: Sheet metal shall receive one coat of 221-12 zinc dust primer and two (2) coats of 312-XX Alkyd High Gloss Enamel Finish by W. P. Fuller or approved substitute before installation. Color shall match existing building surface.

3.04 INSTALLATION:

A. Verify as-built conditions the manufacturer’s coping and edge details for accuracy to fit the wall assembly prior to fabrication. Comply with the coping manufacturer’s installation guide when setting copings.

B. Use mechanical fasteners with minimum 240# pull out resistance for parapet substrates.

3.05 FLASHING PAN: Where column stubs, sign anchors, railing posts, pipe supports, or other projects extend through the roof surface, install a minimum 4" high flashing collar with 6" flange. Install flange on top layer of base sheet in flashing compound. Seal flange with 6" wide strip of fiberglass fabric set in asphalt. Cut 2 collars of base sheet to fit snugly around collar and extend 6" and 12" beyond edge of flange, applied in asphalt. Fill the inside of collar with flashing compound. Cant the flashing compound around projection above the level of outside rim. Provide sheet metal cover flashing over flashing pan.

3.06 EXAMINATION:

A. Verify that coping and edge installation will not disrupt other trades. Verify that substrate is dry, clean and free of foreign matter.

B. Fully coordinate installation with roofing system manufacturer's requirements and recommendations.

C. Correct defects prior to any installation.

D. All reroofing work shall be subject to inspection at any time to insure strict compliance with plans and specifications. Test areas shall be cut whenever requested by the Officer-in-Charge to verify conformance to the specifications. Any unsatisfactory areas shall be remedied by the installer.

3.07 CLEANING:

A. Clean materials.

B. Remove temporary masking materials, factory applied temporary coverings and other similar items. Touch-up paint on damaged surfaces.

END OF SECTION

# DIVISION 7 –– THERMAL AND MOISTURE CONTROL

## SECTION 07920 – SEALANTS

## PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 DESCRIPTION OF WORK: Completely close with sealant all joints indicated or specified to be sealed to a watertight condition.

1.03 SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Manufacturer's Data: Submit copies of manufacturer's product data and specifications for type of sealant required to the Officer-in-Charge for acceptance.

C. Material Safety Data Sheets (MSDS): Submit MSDS for each sealant product.

D. Color Samples: Submit three (3) sets each of color finish samples of sealants.

1.04 JOB CONDITIONS

A. Examine joint surfaces and backing, and their anchorage to the structure and conditions 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 weather conditions are favorable for proper cure and development of high early bond strength.

1.05 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: Carefully handle and store all materials to prevent inclusion of foreign materials. Remove from project site all damaged and deteriorated materials and materials exceeding their life.

C. All sealant materials shall be installed prior to expiration of shelf life.

1.06 WARRANTY: The Contractor shall execute to the City a 2-year written warranty after the Project Acceptance Date that the installation will be watertight and that any leaks which develop during that period which are not due to improper use or willful damage will be repaired at no cost to the City. The warranty shall provide the following at no additional cost to the City:

1. Repair of sealants as necessary to seal leaks which are attributable to faulty materials and/or workmanship.

2. Repair or replacement of damage to the building and/or its finishes, equipment and/or furniture when occasioned by such leaks.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Sealants shall contain no asbestos.

B. 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 impressible backer which will minimize the possibility of sealant extrusion when joint is compressed. Do not use oakum or other types of absorptive materials as backstops.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer.

D. Masking Tape: Non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

E. Primer for Sealants: Non-staining, as recommended by the sealant manufacturer.

F. Sealants:

1. At Vertical and Overhead Joints: One-part polyurethane-based sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Class 25, Use NT. Provide one of the following or an approved substitute.

a. Dymonic: Tremco, Inc.

b. Chem-Calk 900: Bostick Construction Products Division

c. Sikaflex 1a: Sika Corporation

d. Dynatrol I: Pecora Corporation

e. NP-1: Sonneborn

2. At Horizontal Traffic-Bearing Joints: Two-part polyurethane based sealant, conforming to ASTM C920, Type M, Grade P, Class 25, Use T. Provide one of the following or an approved substitute.

a. Sikaflex 2c SL: Sika Corporation

b. THC-900: Tremco, Inc.

c. Urespan NE-300: Type HM: Pecora Corporation

d. SL-2: Sonneborn

3. Bedding Compound: For installation of thresholds and similar items indicated to be bedded in sealant, use a preformed butyl-polyisobutylene sealant tape. Size of tape as required for the specific application. Provide one of the following or an approved substitute.

a. Extru-Seal: Pecora Corporation

b. 440 Tape: Tremco, Inc.

c. Chem-Tape 40: Bostik Construction Products Division

4. At (Polycarbonate) Security Glazing: One-component, neutral-cure silicone, or silyl-modified polymer (MS polymer) conforming to ASTM C920, Type S, Grade NS, Class 50, Use NT, M, G, A, O and specifically recommended by the manufacturer for use with polycarbonate glazing and wood substrates. Sealant shall be compatible with polycarbonate glazing without causing stress cracking or crazing; UV resistant and suitable for continuous exterior exposure; permanently flexible with ±25% joint movement capability minimum; non-staining and non-corrosive; resistant to rain and moisture. Provide one of the following or an approved substitute.

a. SikaFlex WS 295: Sika Corporation

b. DOWSIL 832 Sealant: DOWSIL Corporation

c. SilPruf SCS2000 Sealant: GE Silicones

## PART 3 – EXECUTION

3.01 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.

3.02 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.

3.03 JOINT 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 repellants; water; and surface dirt.

2. Clean concrete, masonry, and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, 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. Steel Surfaces in Contact with Sealant: Scrape and wire brush to remove loose mill scale. Remove dirt, oil, or grease by solvent cleaning, and wipe surfaces with clean cloths.

5. Clean metal, glass, 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.

## 3.04 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealer manufacturer's printed installation instructions applicable to Products and applications indicated, except where more stringent requirements apply. Do not apply sealant on wet surfaces or when the surface temperature exceeds 130 degrees F.

B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions indicated.

C. 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.

D. 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.

E. 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.

F. Tooling of Nonsaz 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.

3.05 CLEAN UP: 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.

3.06 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 Substantial Completion. 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.

END OF SECTION

# DIVISION 8 - OPENINGS

## SECTION 08870 – SECURITY GLAZING

## PART 1 GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. Section Includes:
   1. Non-load-ballistic, forced-entry resistant security glazing for exterior openings, including frames stops, gaskets and sealants compatible with polycarbonate laminates.

   2. Related Sections:
      Section 07920 – Sealants
      Section 06202 – Interior Finish Carpentry

1.03 REFERENCES

CPSC 16 CFR 1201 – Safety Standard for Architectural Glazing Materials

ANSI Z97.1 – Safety Glazing Materials Used in Buildings

UL 972 – Burglary Resisting Glazing Material

ASTM F1916 – Glazing for Detention Facilities, repeated impact

ASTM C1193 – Standard Guide for Use of Joint Sealants

GANA (SM) – Glass Association of North America, Sealant Manual

1.04 PERFORMANCE INTENT

A. Provide glazing assemblies designed to resist repeated blunt impact forces.

1.04 ACTION SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product Data: Manufacturer’s data sheets on each product to be used.

C. Preparation instructions and recommendations.

D. Storage and handling requirements and recommendations.

E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Delivery polycarbonate sheets on enclosed pallets.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store in dry, well-ventilated and covered areas at temperature below 80 degrees F.

D. Handle polycarbonate sheets carefully to prevent damage; do no drop, slide or drag.

1.06 WARRANTY

A. Provide manufacturer's written warranty covering breakage, abrasion resistance, coating failure, loss of light transmission and yellowing.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: ArmorPlast AP25 – RiotGlass
Acceptable Manufacturers: Palshield, Plaskolite Hygard or Tuffak or approved substitute.

2.02 SYSTEM DESCRIPTION

A. Non-ballistic, forced entry resistant, clear polycarbonate-based laminate, with abrasion, UV-resistant hardcoat, nominal 1/2" thick.

2.03 PERFORMANCE REQUIREMENTS

A. Safety glazing compliance, forced entry resistance, optical clarity, UV resistance, abrasion resistance.

Miami-Dade TAS 201, 202, 203
ANSI Z97.1 Safety Glazing
CPSC 16 CFR 1201 CAT I and II
UL 746C: Sustainability for Outdoor Use
UL 94: Flammability

UL 94: Propane Torch Test

2.04 MATERIALS

A. Clear polycarbonate laminate with abrasion resistant hard coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are plumb, level and square. Contractor to verify existing conditions, and glazing openings and that they comply with dimension tolerances.

3.02 INSTALLATION

A. Install per manufacturer's recommendations; allow for thermal expansion; avoid point loads.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM) and manufacturer's instructions.

C. Prevent polycarbonate from contact with contaminating substances resulting from construction operations, including paint.

3.03 CLEANING AND PROTECTION

A. Use approved non-ammoniated cleaners; protect glazing from construction damage.

B. Clean glazing and adjacent surfaces after sealants are fully cured.

END OF SECTION

# DIVISION 9 - FINISHES

## SECTION 09200 – GYPSUM BOARD

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 ACTION SUBMITTALS

A. Submit under provisions of Division 1, Section 01300 – SUBMITTALS.

B. Product data.

## PART 2 - PRODUCTS

2.01 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

B. Manufacturers: USG Corp., Georgia Pacific, National Gypsum or approved substitute.

2.02 EXTERIOR GYPSUM BOARD

A. Glass Mat Gypsum sheathing Board: ASTM C1177/C1177M with fiberglass mat laminated to both sides and with manufacturer's standard edges.

1. Thickness: 1/2 inch.

2. Long Edges: Tapered.

2.03 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M.

B. Joint Tape:

1. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.

C. Joint Compound for Exterior Applications:

1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.

## 2.04 AUXILIARY MATERIALS

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.

1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

# PART 3 - EXECUTION

## 3.01 INSTALLATION OF PANELS

A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

B. Comply with ASTM C840.

## 3.02 FINISHING OF GYPSUM BOARD

A. Prefill open joints, and damaged surface areas.

B. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

C. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer’s written instructions for use as exposed board.

D. Glass-Mat Faced Panels: Finish according to manufacturer’s written instructions.

## 3.03 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION

# DIVISION 9 - FINISHES

## SECTION 09900 – PAINTING

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions, City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Officer-in-Charge will select from standard colors and finishes available. Paint surfaces including but not limited to the following:

1. Surfaces exposed during this work.

2. Surfaces damaged during this work.

3. Surfaces requiring touch-up painting.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

1.03 REFERENCES

A. ASTM D 16 - Definition of terms relating to Paint, Varnish, Lacquer and Related Products.

B. ASTM D 2016 - Test Method for Moisture Content of Wood.

C. MPI (Master Painter's Institute) - Approved Product List.

D. PCDA (Painting and Decorating Contractors of America - Painting - Architectural Specification Manual.

E. SSPC (Steel Structures Painting Council - Steel Structures Painting Manual).

## 1.04 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

## 1.05 SUBMITTALS

A. Submit in accordance with DIVISION 1, SECTION 1300 - SUBMITTALS.

B. Product Data:

1. Materials List: Provide an inclusive list of required patching and coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.

2.
   a. For products with premixed colors, provide manufacturer's standard color chips for selection by Officer-in-Charge.

3. Manufacturer's Information: Provide data on all listed materials, including:

   a. Thinning and mixing instructions.

   b. Application instructions and required mil film thicknesses.

   c. Manufacturer's Material Safety Data Sheets (MSDS).

C. Certifications: Provide a letter certifying paints and coatings are free of asbestos, lead, zinc-chromate, strontium chromate, cadmium, mercury, crystalline silica, and other EPA regulated and hazardous materials. Provide a letter certifying the amounts of mildewcide added by both the paint manufacturer and paint supplier.

D. Schedule of Finishes: Provide finish schedule including paint spread rates required to achieve final dry film thickness.

E. Schedule of Operations: Provide a work schedule showing sequence of operation and installation dates.

F. Samples:

1. Submit color and finish samples, at manufacturers normal paint chip size illustrating range of colors and textures available for each surface finishing product scheduled.

2. After color and finish sample are returned, submit paint finish samples, 8.5” x 11” in size illustrating selected colors and textures for each selection. Divide sample in horizontal strips showing prime and overlapping second and finish coats. Show coat tinting. Prepare transparent finish samples on same material as that on which coating will be applied. Identify each sample.

G. Manufacturer’s Instructions: Indicate special surface preparation procedures, and substrate conditions requiring special attention. Refer to Article 3.02 PREPARATION.

H. Qualification Data: For Applicator

I. Delivery Receipts: Provide 3 copies of the delivery receipt, signed by the user’s representative, attesting to delivery of extra paint as required under Article 3.07 EXTRA PAINT.

J. Warranty: Submit warranty as noted under item entitled “WARRANTY” hereinbelow.

## 1.06 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

1. Exception: Alkali resistant primers if compatible with the intermediate coat paint products.

## 1.07 REGULATORY REQUIREMENTS

A. Comply with State OSHL (Occupational Safety and Health Law) and pollution control regulations of the State Department of Health and EPA.

## 1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer’s original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.

2. Product description (generic classification or binder type).

3. Manufacturer's brand name and lot number and date of manufacture.

4. Contents by volume, for pigment and vehicle constituents.

5. Thinning instructions.

6. Application instructions and coverage.

7. Color name and number.

8. VOC content.

B. Storage:

1. Non-flammable Materials: Store materials not in use in tightly covered containers in a well-ventilated area. Maintain storage containers in a clean condition, free of foreign materials and residue.

2. Flammable Materials:

a. Store in such a manner as to prevent damage. No paint material, empty cans, paint brushes and rollers may be stored in the building(s). Store these items in separate storage facilities away from the building(s). Contractor may furnish a separate job site storage structure, if the structure complies with the requirements of the local Fire Department. Keep the storage area shall clean. Lock any storage structures when not in use or when no visual supervision is possible.

b. All rejected materials shall be removed from the job site immediately.

## 1.09 PROJECT CONDITIONS

A. Do not apply materials when surfaces and ambient temperatures are outside the ranges required by the paint product manufacturer. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

B. Protect public, pedestrians and tenants from injury. Provided, erect and maintain safety barricades around scaffolds, hoists and where constriction operations create hazardous conditions.

C. Completed Work: Provide necessary protection for wet paint surfaces

D. Protective Covering and Enclosures: Provide and install clean sanitary drop cloth or plastic sheets to protect furniture, equipment, floor and other areas that are not scheduled for treatment. Remove any paint applied to surfaces not scheduled for treatment.

E. Fire Safety: Contractor and its employees shall not smoke in the vicinity of the paint storage area. Exercise precautions against fire at all times and remove waste rags, plastic (polyester sheets), empty cans, etc. from the site at the end of each day.

F. Safeguarding Property: Safeguard the work and also the property of the State and other individuals in the vicinity of Contractor's work. Make good on any damages and for losses to work or property caused by Contractor or its employee's negligence. Where damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) replace it with a new product of equal quality. No prorating or use of "used" products will be permitted.

## 1.10 WARRANTY

A. Provide a two (2) year guarantee that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship.

B. The Surety shall not be liable beyond two (2) years from the project acceptance date.

# PART 2 - PRODUCTS

## 2.01 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Mildewcide: Except for metal primers, provide primer and finish coats with suitable chemical mildewcide to the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint, but not less than one ounce per gallon.

C. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

1. Proprietary Names: Use of manufacturer's proprietary product names in the Paint Systems Schedule in Part 3 below to designate colors or materials, is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed products to be used.

2. Equivalent products to the specified products are listed in the Master Painter's Institute's "Architectural Painting Specification Manual."

3. Substitution: Requests for substitution of a product or product if a manufacturer is not on the "Approved Product List" will be evaluated for equivalency based on product test results per the test criteria of the Master Painter's Institute.

D. Colors: Paint colors as indicated in the contract documents are for bid purposes only. Contractor shall coordinate with the Users and the Officer-in-Charge for final approval on color selection from the manufacturer's full range.

E. EPA Regulated and Hazard Materials: Do not use paint or paint products containing asbestos, lead, mercury, zinc chromates, strontium-chromate, cadmium, crystalline silica, or the EPA regulated or hazardous materials. Select paint from the Master Painter's Institute's Approved Product List.

## 2.02 MISCELLANEOUS MATERIALS

A. Provide patching and repair materials. Compatible with paint finishes and substrates. Use weather resistant materials for exterior surfaces and surfaces exposed to moisture.

B. Accessories
1. General: Provide other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2. Thinners: Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's requirements. Do not use compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline for thinning.

## 2.03 EXTERIOR PAINT SCHEDULE

A. Wood Substrates: Exposed framing: Provide the following finish systems over exterior wood exposed framing.

1. Latex over Latex Alkyd System (MPI EXT 6.2A): Two finish coats over a primer.

a. Primer: Primer, Alkyd for exterior wood. MPI 5.

b. Intermediate Coat: Latex, Exterior, matching finish coat.

c. Finish Coats: Exterior acrylic paint. MPI 11.

d. Finish Coat Gloss Level: Semi-gloss or match existing adjacent surface.

e. System DFT: 5 mils.

B. Wood Substrates: Wood-based panel products: Provide the following finish systems over exterior wood based panel products.

1. Latex over Latex Alkyd System (MPI EXT 6.4G): Two finish coats over a primer.

a. Primer: Primer, Alkyd for exterior wood. MPI 5.

b. Intermediate Coat: Latex, Exterior, matching finish coat.

c. Finish Coats: Exterior acrylic paint. MPI 11.

d. Finish Coat Gloss Level: Semi-gloss or match existing adjacent surface.

e. System DFT: 5 mils.

C. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.

1. Alkyd Finish: Two finish coats over a primer.

a. Primer: Exterior ferrous-metal primer. MPI 23.

b. Finish Coats: Exterior acrylic paint. MP194.

c. Finish Coat Gloss Level: Semi-gloss or match existing adjacent surface.

d. System DFT: 5.25 mils.

D. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:

1. Acrylic Finish: Two finish coats over a galvanized metal primer.

a. Primer: Exterior galvanized metal primer. MPI 134.

b. Finish Coats: Exterior acrylic paint. MPI 11 Q-G5.

c. Finish Coat Gloss Level: Semi-gloss or match existing adjacent surface.

d. System DFT: 4.5 mils.

## 2.04 INTERIOR PAINT SCHEDULE

A. Wood: Provide the following paint finish systems over new interior wood surfaces:

1. Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd-enamel finishes. MPI 39.

b. Finish Coats: Interior acrylic enamel. MPI 141.

c. Finish Coat Gloss Level: Semi-gloss or match existing adjacent surface.

d. System DFT: 4.5 mils.

# PART 3 - EXECUTION

## 3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.

1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

    a. Ensure that concrete and masonry surfaces are cured and dried to meet paint manufacturer's recommendations.

2. Start of painting will be construed as Applicator’s acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

    1. Notify Officer-In-Charge about anticipated problems when using the materials specified over substrates primed by others.

## 3.02 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

    1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove dust, oil and grease before cleaning.

    1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer’s written instructions for each particular substrate condition and as specified.

    1. Provide barrier coats over incompatible primers or remove and re-prime.

D. Surface Preparation Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

1. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

2. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.

3. If transparent finish is required, back prime with spar varnish.

4. Back prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.

5. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

E. Surface Preparation Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.

1. If mill scale or mild surface rust cannot be removed with solvent, then blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3 and SSPC-SP 10/NACE No. 2.

2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

3. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat. Spot priming specified here shall be in addition to full prime painting scheduled in Part 3 below.

F. Surface Preparation Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods

G. Surface Preparation - Repainting: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

1. General: Correct defects and clean surfaces which affect work of this section. Remove existing coatings that exhibit loose surface defects.

    a. Provide barrier coats over marks, patches, and other imperfections which may bleed through surface finish.

    b. Remove from surfaces to be repainted all foreign matter such as nails, screws, staples, tape and gum.

    c. Remove all loose, blistered, scaled, crazed or chalky finish to an existing tight and firm finish.

    d. Remove mildew as noted in PREPARATION Article.

    e. Spot prime areas where bare wood, concrete, masonry, plaster, fill, seal or patched material is exposed with the specified primer and feather out onto adjacent paint.

    f. Patch existing holes larger than 1/4”x1/4”.

    g. Inspect existing sealant joints and remove failing sealant and re-seal joint prior to painting.

2. Wash all surfaces with a solution of tri-sodium phosphate and water or other appropriate solution to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalking or other foreign matter which would impair the bond of, or bleed through the new paint finish. After washing, rinse the surface with potable water and allow to thoroughly dry. Rinsing may be performed by high pressure water washing as noted in PREPARATION Article.

    a. Surfaces shall dry a minimum of 24 hours before the application of primers. For wood surfaces drying shall continue until the moisture content of the wood is less than 15 percent. For concrete and concrete masonry surfaces test for alkali and moisture.

3. Lightly sand the surface where existing finish remains tight and firm. Where the paint has been removed, sand the edges of scarred areas to a smooth feathered edge.

4. Fill holes (nail, tack, staple, and other similar items), cracks, open joints and other imperfections with appropriate compound and allow to set (door and trim included). Seal all openings which will permit the entrance of water. Sealing compounds shall be compatible with the substrate, primer and paint. Apply

and allow sealants to set in accordance with the manufacturer's recommendations.

5. Plaster Surfaces: Scarred plaster areas shall be patched with appropriate plaster materials. Fill holes, cracks, open joints and damaged areas with vinyl base or latex modified patching system. Apply texture, if required, to match existing textured surfaces.

6. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

7. Wood:

   a. Interior: Wipe off dust and grit prior to sealing.

   b. Exterior: Wash glu-laminated wood with solvent to remove grease and dirt prior to sealing.

   c. Seal knots, pitch streaks, and sappy sections with sealer. Fill fastener holes and cracks after priming has dried; sand between coats.

8. Ferrous and Galvanized Metal Surfaces:

   a. Comply with preparation requirements of the Steel Structures Painting Council (SSPC) Standard SP3.

   b. Remove rust, loose mill scale and blistering / loose paint by power tool chipping, de-scaling, sanding, wire brushing and grinding down to bare metal. Only tightly adhering surface rust, mill scale and paint which cannot be removed with a dull putty knife may remaining. Do not burnish the surfaces during cleaning.

   c. Completely wipe surfaces with mineral spirits or other appropriate solution to remove accumulated film of wax, oil, grease, smoke, dust, dirt, chalky or other foreign matter which would impair the bond of, or bleed through the new paint finish. Patch imperfections, holes, dents to form a smooth surface.

   d. Lightly sand the surface where existing finish remains tight and firm. Where the paint has been removed, sand the edges of scarred areas to a smooth feathered edge. Allow the surfaces to thoroughly dry and immediately spot prime bare metal areas with the specified primer and feather out onto adjacent paint.

H. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

3. Use only thinners approved by paint manufacturer and only within recommended limits.

I. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat and provide sufficient differences in shade of undercoats to distinguish each separate coat.

## 3.03 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.

2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

3. Provide finish coats that are compatible with primers used.

4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only unless otherwise noted.

6. Paint interior surfaces of ducts with a flat, non-specular black paint where visible through registers or grilles.

7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.

8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

9. Sand lightly between each succeeding enamel or varnish coat.

10. Ensure primers are top coated within the times required by the paint manufacturers. Top coats not applied within the recoating window may be rejected.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications

2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller.

1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.

2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film

thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

E. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

## 3.04 FIELD QUALITY CONTROL TESTING

A. Inspection and Approvals: Obtain written approval 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. For any particular area of work that deviates from the submitted work schedule, notify the Officer-In-Charge one day (24 hours minimum) in advance when completing any phase of work. Provide access to areas to be inspected.

1. 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.

2. Right of Rejection: Non conforming work will be rejected by the Officer-in-Charge. Remove rejected material from the job site immediately. Redo rejected work at no cost to the State.

B. Thickness Testing: The Officer-In-Charge will require all paints and their applied thickness tested determine compliance with the Contract Documents. The cost of testing shall be borne by the Contractor.

1. Where the required paint thickness is deficient, provide additional coats to the affected surface(s) to meet the required paint thickness.

2. Test schedule: One (1) test per each surface painted, unless otherwise directed by Officer-In-Charge.

3. Tests shall be paid by Contractor and performed by Contractor.

C. Moisture Testing: Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.

D. Alkalinity Testing: Measure pH Level of surface to be painted. Notify Officer-In-Charge if alkalinity level is below the maximum permitted by the paint or primer manufacturer.

1. Test schedule: One (1) test per each surface type, unless otherwise directed by Officer-In-Charge.

2. Tests shall be paid by Contractor and performed by Contractor.

E. Adhesion Testing:

1. Provide adhesion testing per ASTM D3759 Test 8 (x scratch peel test):

a. Test after each scheduled paint coat.

b. Should test fail, remove paint, prepare surface, then recoat and test again.

2. Testing shall be performed by a NACE certified inspector selected by the State. Cost of testing shall be borne by Contractor.

3. Test schedule: One (1) test per each surface type, unless otherwise directed by Officer-In-Charge.

4. Tests shall be paid by Contractor and performed by Contractor.

F. Manufacturer's Field Services: The Painting Contractor shall be responsible to assure the presence of a qualified Technical Representative (approved by a responsible officer of the Material Manufacturer) at the job site prior to starting of the work and as require while the work is in progress. The Technical Representative shall provide assistance to the Painting Contractor in physical demonstrations on the use of the materials and methods or techniques required to accomplish all of the work as specified herein.

1. A minimum two (2) visits will be required. The Technical Representative shall submit a detailed report simultaneously to the Officer-in-Charge and a Responsible Officer of the Painting

Contractor and not to the on-site project manager or foremen. This report shall contain in detail the findings, conclusions and recommendations and shall be submitted during each visit. It is the intent of this provision to ensure that the on-site project manager or foreman does not have supervisory rights over the Technical Representative

## 3.05 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

## 3.06 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Officer-In-Charge.

B. Provide “Wet Paint” signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

## 3.07 EXTRA PAINT

A. The Contractor shall provide extra paint in each of the different colors of exterior and interior paint used for walls, eaves and trim to the facility 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 over large areas, such as the exterior of the building - 5 gallons of each color and each type used (alkyd, latex, gloss, semi-gloss, flat, etc.).

2. Paint used in single room areas and in small areas, such as bathrooms and doors - 1 gallon of each color and each type used (alkyd, latex, gloss, semi-gloss, flat, etc.)

END OF SECTION

# DIVISION 13 - SPECIAL CONSTRUCTION

## SECTION 13283 - DISTURBANCE OF LEAD-CONTAINING MATERIAL

## PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions of the City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 DESCRIPTION OF WORK

A. All paint shall be presumed to contain lead until proven otherwise.

B. Whenever paint containing lead is being disturbed, this section shall take precedence over others.

C. The preparation and treatment of existing paint with lead material on various surfaces. Lead paint removal work shall be selective and only where existing paint is peeling, blistering, flaking, delaminating, chalky, in poor condition, not adhering to the existing substrate and/or going to be disturbed. In addition, Contractor shall coordinate work in this Section with contract drawings and documents to determine where painted surfaces, regardless of condition, are going to be disturbed and are required to be completely removed (deleading) to structural substrate to complete work required. This section is being implemented so that the planned work can be accomplished in a safe manner.

D. All preparation of paint with lead (lead-containing paint and lead-based paint) shall be identified in advance so that the preparation/treatment of surfaces will be one continuous operation.

E. Demolition of surfaces and components containing paint with lead (lead-containing paint and lead-based paint).

F. Contractor is responsible for coordinating all work within this Section with contract drawings, contract specifications, and contract documents.

1.03 WORK SPECIFIED IN THIS SECTION: Furnish all labor, materials and equipment necessary to carry out the safe preparation and treatment of paint with lead in compliance with all applicable laws and regulations from all surfaces, including all incidental and pertinent operations to safely complete this project.

Furnish all labor, materials and equipment necessary to carry out the safe demolition of surfaces and components with paint with lead in compliance with all applicable laws and regulations from all surfaces, including all incidental and pertinent operations to safely complete this project.

1.04 COORDINATION WITH OTHER SECTIONS: It will be the Contractor's responsibility to repair and/or replace, to the Officer-in-Charge's satisfaction, all items identified as damaged and/or missing in connection with this work that cannot be proven to have been in this condition prior to the commencement of this project. It is the Contractor's responsibility to bring to the attention of the Officer-in-Charge, any discrepancies in the plans and specifications prior to starting any work.

1.05 CONTRACTOR USE OF PREMISES

A. General: The Contractor shall cooperate fully with the Officer-in-Charge, during the project execution to minimize conflicts.

B. Pollution Control: The Contractor shall not contaminate the air, water, soil or other items with hazardous materials such as cleaning solutions, lead paint debris and waste, etc. The Contractor shall immediately clean the contaminated area and dispose of the waste at his own expense if determined by the Officer-in-Charge to be contaminated. The Officer-in-Charge shall have the authority to immediately stop the work and order the Contractor to clean the contaminated site.

C. Use of the Site:

1. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while at the project site.

2. Do not unreasonably encumber the site with materials or equipment. Confine stock-piling of materials and location of storage to the areas authorized by the Officer-in-Charge.

1.06 COMMENCEMENT OF WORK

A. The Contractor shall not commence work unless the following requirements have been met. These requirements must be met each time work that calls for the disturbance paint with lead is to begin in a new work area.

B. Submittals: All pre-treatment submittals, notifications, posting and permits have been provided and are satisfactory to the Officer-in-Charge.

C. Equipment: All equipment for preparation, clean-up and disposal are on hand.

1.07 SUBMITTALS: Submit in accordance with SECTION 01300 - SUBMITTALS and the following requirements. Submittals shall be submitted in the order listed herein. Failure to do so will result in automatic rejection of submittals.

A. General: All submittals shall be made to the Officer-in-Charge no later than ten (10) consecutive calendar days from award date unless specified otherwise.

B. Detailed Paint with Lead Disturbance Schedule: The Contractor shall submit a project schedule indicating the actual start and completion dates for each phase of the work. The Contractor shall also provide detailed information concerning:

1. Name of Contractor's onsite Competent Person responsible for compliance with all Federal, State and Local regulations and plans and specifications.

2. Preparation of the work area.

3. Any personal protective equipment including respiratory protection and protective clothing acceptable by the Officer-in-Charge.

4. Employees who will participate in the project, including delineation of experience, training, and assigned responsibilities during the project.

5. Decontamination procedures for the personnel, work area and equipment.

6. Work methods and procedures to be used during the removal of loose, peeling, flaking and/or blistering paint and during demolition of surfaces and components containing lead paint including methods to suppress dust emissions during the disturbance of paint with lead.

7. Required air monitoring procedures and sampling protocols when the likelihood of airborne exposure of lead-containing dust and fumes are probable.

8. Procedures for handling and transporting waste materials.

9. Procedures for final decontamination and clean-up.

10. A sequence of work and performance schedule in coordination with other trades.

11. Emergency procedures.

C. Samples: The Contractor shall submit samples for approval prior to ordering materials.

1. Submit six (6) copies and samples for each manufacturer supplied items shall include manufacturer's name, trade name, catalog number, size, specification reference, applicable federal regulations, and all other information necessary to establish contract compliance.

2. Liquid sanders, encapsulants and any other materials brought on-site that are considered as hazardous materials under 29 CFR 1910.1200, shall include Safety Data Sheets.

D. The Officer-in-Charge with the Contractor may inspect the work area wherein all associated activities will occur and submit a statement signed by both, agreeing on building and fixture condition prior to the commencement of work.

E. Documentation for Instructions:

1. Submit to the Officer-in-Charge that the Contractor's employees, including foreman, supervisors and any other company personnel or agents who may be exposed to airborne lead dust or who may be responsible for any aspects of lead paint removal activities certificates of training, in accordance with OSHA lead in construction standard for all workers disturbing lead.

2. Submit to the Officer-in-Charge, a written respiratory protection program meeting the requirements of 29 CFR 1910.134, documentation that all employees using respirators have received the training specified in this Section and documentation of respirator fit-testing for all Contractor employees and agents who must wear negative pressure respirators.

F. Documentation from Physician: The Contractor shall submit documentation from a physician that all employees or agents who may be exposed to airborne lead dust or fumes have been medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, the Contractor shall document that his personnel have received medical monitoring as required in the OSHA 1926.62 standard.

1. Before exposure to lead dust or fumes, the Contractor will provide workers with a comprehensive medical examination as required by Federal Register/Volume 55, No. 189; and 29 CFR 1926.62 or whichever is stricter for the operation being performed. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.

2. The Contractor shall provide information to the examining physician about unusual conditions in the work place environment that may impact on the employee's ability to perform work activities; a copy of 29 CFR 1926.62; Federal Register/Volume 55, No. 189; a description of the affected employee's duties as they relate to the employee' s exposure; the employee's representative exposure level or anticipated exposure level; and description of any personal protective and

respiratory equipment used or to be used; and information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.

1.08 GENERAL REQUIREMENTS

A. The work specified herein shall include the preparation of work area, preparation and/or other special treatment procedures, demolition, and transportation and disposal procedures as required of lead-containing materials by persons trained, knowledgeable and qualified in the techniques of handling and disposing of lead-containing and lead-contaminated materials, and the subsequent cleaning of contaminated areas. This work shall be performed in compliance with all applicable federal, state and local regulations and be performed by workers who are capable of and willing to perform the work of this contract.

B. The Contractor shall submit documentation within ten (10) consecutive calendar days of award, that employees have had instructions on the dangers of lead exposure on respirator use and decontamination.

C. Applicable Standards and Guidelines: All work under this contract, and any other trade work conducted with the project, shall be performed in strict accordance with all applicable federal, state and local regulations, standards and codes governing lead paint preparation, removal, disposal, treatment, transportation and disposal of lead materials.

1. The most recent edition of any relevant regulation, standard, document code shall be in effect.

2. The Contractor shall have copies of all standards, regulations, codes and other applicable documents available at the work site in an area assigned to the Contractor throughout the execution of this project.

D. Specific Statutory and Regulatory Requirements:

1. Title 29 Code of Federal Regulations Part 1926.62, Safety and Health Standards (Lead Exposure in Construction).

2. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.

3. Title 40 Code of Federal Regulations Part 261, Identification and Listing of Hazardous Waste.

4. Title 40 Code of Federal Regulations Part 262, Standards Applicable to Generators of Hazardous Waste.

5. Title 40 Code of Federal Regulations Part 263, Regulations Hazardous Waste Transporters.

6. Federal Register/Vol. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917 and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.

E. Alternative Procedures:

1. Requests for Alternative Procedures: Procedures described in this specification are to be used at all times. However, if specified procedures cannot be used, a request must be made in writing to the Officer-in-Charge providing details of the problem encountered and recommended alternatives.

2. Requirements for Alternative Procedures: Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.

3. Approval of Alternative Procedures: Any alternative procedure must be in writing by the Officer-in-Charge before implementation.

F. The Contractor shall comply with the above requirements and any applicable State and City regulations. Where conflict or any inconsistency among requirements, this specification exists, and acceptable work plan exists the more stringent requirements shall apply. Ignorance of the above requirements and any applicable State and City regulations resulting in additional cost to the Contractor shall not be paid by the City.

G. All regulations shall govern over these specifications, except that any more stringent specification (including acceptable work plan) or specification providing greater protection against asbestos exposure, injury, loss or liability shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between specifications and/or regulations should be directed to the Officer-in-Charge.

H. The Contractor shall give, at a minimum, seven (7) working days notification to the General Contractor's Air Monitoring Consultant and the Officer's-in-Charge Monitoring Consultant prior to the start of any lead paint related work.

I. The Contractor shall not begin with any work without the General's Air Monitoring Consultant and the Officer's-in-Charge Monitoring Consultant present onsite. present onsite.

1.09 DEFINITIONS

A. Abatement: Procedure to control lead dust release from lead-containing paint.

B. Removal: All herein specified procedures necessary to remove peeling, flaking and blistering lead-containing paint in an acceptable manner.

C. 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. Lead: 30 micrograms/cubic meter.

D. Air Monitoring: The process of measuring the content of a specific, known, volume of air in a stated period of time. For this project, NIOSH method 7082 or 7702 for lead monitoring.

E. Authorized Visitor: The Officer-in-Charge, their representatives, air monitoring personnel, or representative of any regulatory or other agency having jurisdiction over the project.

F. Contaminated Area: An area where unwanted toxic or harmful substances have been introduced.

G. Fixed Object: A unit of equipment or furniture in the area which cannot be removed from the work area without dismantling.

H. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of particulate greater than 0.3 micron in length.

I. HEPA Vacuum Equipment: Vacuuming equipment that utilizes a High Efficiency Particulate Absolute (HEPA) filter.

J. Holding Area: A secure area used for the storage of properly contained lead-containing material before removal from the project site to an approved disposal site.

K. Lead: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.

L. Lead Paint: Lead-containing paint, lead-based paint and/or paint containing any amount of lead present.

M. Lead-containing Paint: Lead-containing paint, lead-based paint and/or paint containing any amount of lead.

N. Lead Control Area: An Area where lead-containing paint removal, treatment and preparation operations are performed which is isolated by physical boundaries to prevent unauthorized entry of personnel and to prevent the spread of lead dust, paint chips or debris.

O. Permissible Exposure Limit (PEL): The employer shall ensure that no employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average. Lead: 50 micrograms/cubic meter.

P. Personal Monitoring: Sampling of lead paint dust 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 an employee.

Q. Plasticizing: Procedures necessary to use polyethylene sheeting, adhesives and (or) taping.

1.10 ABBREVIATIONS

A. ANSI - American National Standards Institute, Inc.

B. CFR - Code of Federal Regulations

C. EPA - U.S. Environmental Protection Agency

D. HIOSH - Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii

E. NIOSH - National Institute for Occupational Safety and Health

F. OSHA - Occupational Safety and Health Administration

G. NESHAPS - National Emissions Standards for Hazardous Air Pollutants

H. LBP - Lead-Based Paint

PART 2 - PRODUCTS

2.01 MATERIALS

A. Plastic Sheeting: Minimum thickness is 6-mil polyethylene film.

B. Tapes: Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attaching polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water. Silver cloth duct tape, minimum 2 inches wide; red or NATO orange tape, minimum 2 inches wide for exit arrows; and double-faced foam tapes.

C. Adhesives: Adhesives shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

D. Warning Labels and Signs: As required by applicable OSHA regulations and CFR. 55 No. 189.

E. Protective Clothing: The Contractor shall have all the required sets of coveralls required for this project prior to the start of work. There will be no time extension for the unavailability of coveralls or related equipment.

F. Liquid Sanders: Product shall be specifically designed for the preparation of paint where dry sanding is not allowed or not appropriate. Liquid sanders are not to be used to remove paint.

G. Other Materials: Provide all other materials which may be required to prepare properly and complete this project.

2.02 TOOLS AND EQUIPMENT

A. General: Provide and fabricate suitable tools for the lead treatment/preparation procedures.

B. Other tools and equipment as necessary to accomplish the work.

2.03 PERSONNEL PROTECTION REQUIREMENTS

A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements, and that these specifications provide only a minimum acceptable standard. If other potentially hazardous materials are used, the Contractor shall comply with all applicable regulations that exist for that particular hazardous material and to ensure worker safety and health.

B. Respiratory Protection: The Contractor shall provide all respiratory protection to workers in accordance with the submitted written respiratory protection program, which includes all items in 29CFR1910.134(b)(l-II).

C. Protective Clothing:

1. Clothing: The Contractor shall provide clothing including head, hands, foot and full body protection consisting of material impenetrable by bulk material in sufficient quantities and adequately sized for all workers and Authorized Visitors. Disposable or reusable clothing are acceptable, however, disposable clothing shall be disposed of in accordance with all federal, state and local regulations.

2. Miscellaneous safety equipment: The Contractor shall provide hard hats (meeting the requirements of ANSI Standard Z89.1-1981), protective eyewear (meeting the requirements of ANSI Standard Z87.1-1979), and disposable gloves to all workers. Safety shoes (meeting the requirements of ANSI Standard Z41.1-1987) may be required for some activities.

3. Footwear: The Contractor shall require appropriate footwear for all workers.

## PART 3 EXECUTION

### 3.01 POTENTIAL LEAD HAZARD

A. The disturbance or dislocation of lead-containing materials may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to workmen, building occupants, and neighboring residences. Apprise all workers supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-containing materials, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to respirable airborne lead dust and ingestible lead-containing materials. Such measures shall include at the minimum, the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

### 3.02 LEAD-CONTAINING MATERIALS

A. Lead-containing painted components are known to be present due the age of the facility and based on lead paint testing conducted.

B. This Section applies to lead painted components that will be disturbed during surface preparation and treatment, demolition, and other activities and as described herein. It does not apply to painted components that do not contain lead, nor lead paint that will not be disturbed in any manner during the work to be performed under this contract. The Officer-in-Charge shall have the authority to require special controls described under this Section of any lead painted components that are disturbed.

### 3.03 WORK AREA PREPARATION

A. Posting of Caution Signs: The Contractor shall post caution signs in accordance with OSHA at any location and approaches to a location where airborne concentrations of lead may exceed ambient background levels. The Contractor shall post signs at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place barriers.

B. Isolation Barriers: Isolation barriers shall be installed in accordance with the contractor's accepted work plan wherever it is necessary to protect the public, employees of the facility and non-working personnel from leaded dust. The isolation barriers shall provide sufficient protection from contaminating the exterior of the work area.

C. Inspect the Building Openings: At the beginning of each work day, the Contractor shall inspect and ensure that all doors, windows and other openings of affected building(s) and all surrounding buildings are closed or sealed.

3.04 LEAD PAINT TREATMENT/PREPARATION PROCEDURES

A. General:

1. Provide temporary utilities, security, safety, worker protection, clean-up and disposal of waste materials as described in this Section and elsewhere in these specifications.

2. Cleaning and isolating the work area: Clean the work area first using HEPA vacuum equipment and then wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming equipment on wet surfaces.

3. Handling of lead-containing material: The Contractor shall not drop or throw to the floor, material removed from building structures or components. Material shall be removed as intact sections or components (whenever possible) and carefully lowered to the floor. For materials over 15 feet above the floor, the materials may be containerized at elevated levels, or gently lowered onto inclined chutes or scaffolding for subsequent collection and containerization.

4. Requirements for re-establishment of work area: Re-establishment of the work area shall only occur when clean-up procedures have been completed, all repairs necessitated by paint treatment activities have been performed, no visible lead paint debris is present and all work has been documented to the satisfaction of the General Contractor's Monitoring Consultant. Any variation from this shall be at the Officer-in-Charge's Monitoring Consultant discretion.

5. Ground contamination of lead paint and other paint preparatory materials shall be cleaned before leaving the premises.

B. Paint Removal: Paint removal shall only be allowed in locations where paint is peeling, blistering, cracking and/or flaking, or where otherwise noted on the drawings.

C. Paint Stripping:

1. Work included under this sub-section includes the furnishing of all labor, materials and equipment required to remove lead paint by scraping and/or brushing after the paint has been softened by the application of a chemical stripping agent.

2. Chemical removers shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate to which they are applied. Chemical removers used for interior surfaces shall not raise or discolor the surface being abated.

3. Chemical stripping agent neutralizers may be used on exterior surfaces only. Neutralizers shall be compatible with and not harmful to the substrate that they are applied to. Neutralizers shall be compatible with the stripping agent that has been applied to the surface substrate.

4. Chemical stripping agents and neutralizers shall be applied in accordance with the recommendations of the manufacturer. Care must be taken to adhere to all MSDS, health/safety code and other specification section requirements. Stripping agents shall not be allowed to penetrate wood or other fibrous substrates.

5. Apply paint strippers in accordance with the manufacturer's printed instructions by trowel to a minimum thickness of 1/8 inch. Cover past with fibrous rubbing gently to remove air and pierce remaining air bubbles with knife. Leave on for period of not less than 24 hours or longer according to test patch findings.

6. Neutralize area: Rinse off the residue with water into a collection-filtration system and neutralize the area in accordance with the manufacturer's recommendations.

7. Protective clothing: All workers shall be protected by rubber or polyethylene full body coverage suits, boots, gloves, face shield and protective head gear. Avoid contact with eyes and skin.

8. Ground contamination of lead paint and other paint preparatory materials shall be cleaned before leaving the premises.

D. Abrasive Removers Machine Sander:

1. Work included under this sub-section includes the furnishing of all labor, materials, and equipment required to remove lead paint by machine sanding using a high efficiency particulate air (HEPA) vacuum system, as called out in these specifications.

2. Sanders shall be of the dual action, rotary action, orbital or straight-line system type, capable of being fitted with a HEPA filter system.

3. Air compressors utilized to operate this equipment shall be designed to continuously provide 90 to 110 psi or a recommended by the manufacturer.

4. Wet sanding shall be conducted by hand or pneumatic driven sanders. Electric powered sanders shall not be used for wet sanding.

5. Dry sanding shall only be done on flat surfaces which allow the HEPA dust collection system come into tight contact with the surface being sanded. Surfaces to be sanded shall be wide enough to allow maximum efficiency of the HEPA dust collection system.

6. All lead paint shall be removed down to the bare substrate surface. In cases that some pigment may remain embedded in wood grain and similar porous substrate, care shall be taken to avoid damage to the substrate with the sanding machine. If the pigment cannot be removed without damaging the substrate, the Contractor shall notify the Officer-in-Charge for further instructions.

7. Ground contamination of lead paint and other paint preparatory materials shall be cleaned before leaving the premises.

E. Paint Preparation:

1. Work included under this Sub-Section includes the furnishing of all labor, materials and equipment required to prepare lead painted components by non-abrasive or wet abrasive techniques.

2. Application:

a. Disposable protective clothing shall be worn at all times during the work. Suits or coveralls shall be worn with protective shoes and gloves.

b. Plastic drop cloths shall cover the floor and other areas not being repainted.

c. Remove from surface to be repainted all foreign matter such as tape and gum.

d. Where existing finish remains clean, tight and firm, prepare surface by using a commercial paint preparation solution (liquid sandpaper) or wet sandpaper to remove the glossy coat.

e. Completely wipe or wash all surfaces with mineral spirits, T.S.P. (tri-sodium phosphate), or other appropriate solution as required to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalky or other foreign matter which would impair bond of, or bleed through new finish.

f. Immediately, spot prime with specified primer, areas where bare metal is exposed.

g. Dispose of waste, gloves, suits, plastic, and disposable equipment in accordance with 40 CFR 261 and specifications.

3. Ground contamination of lead paint and other paint preparatory materials shall be cleaned before leaving the premises.

3.05 LEAD PAINT - DEMOLITION PROCEDURES

A. Provide temporary utilities, security, safety, worker protection, clean-up and disposal of waste materials as described in this Section and elsewhere in these specifications.

B. Isolating the work area: The Contractor shall isolate work area, with barricades and signs to prevent un-authorized persons from entering into the work area.

The Contractor shall post signs at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place barriers.

C. The Contractor shall at all times suppress dust emissions while disturbing any material containing lead paint. No visible emission will be permitted.

D. Requirements for re-establishment of work area: Re-establishment of the work area shall only occur when clean-up procedures have been completed, all repairs necessitated by paint treatment activities have been performed, no visible lead paint debris is present, and all work has been documented to the satisfaction of the General Contractor Monitoring Consultant. Any variation from this shall be at the Officer-in-Charge's Monitoring Consultant discretion.

E. Ground contamination of lead paint and other paint preparatory materials shall be cleaned before leaving the premises.

3.06 STORAGE AND DISPOSAL REQUIREMENTS

A. Storage Requirements: The Contractor shall store Non-Hazardous and Hazardous Waste Material within the Contractor's secured storage area.

1. Bagged waste material: If bagged waste material is to be stored, the Contractor shall use dumpsters for this purpose. The dumpsters shall have doors and tops that can be closed and locked to prevent vandalism, wind dispersion of lead dust, or other disturbance of the bagged debris. The Contractor shall not store unbagged lead-containing waste, liquid waste or non-lead-containing waste in these dumpsters. The Contractor also shall ensure that the bags in the dumpsters are not damaged. The Contractor shall post warning signs on the dumpsters as specified in OSHA requirement 29 CFR 1926.62.

2. Drummed waste material: If waste material is to be stored in drums, the Contractor shall use a secured storage area for this purpose. This storage area shall have doors that can be closed and locked to prevent vandalism. The Contractor shall only store waste material contained in drums or dumpsters in the secured area. The Contractor shall ensure that the drums in this secured storage area are not damaged. The Contractor shall post warning signs outside the secured storage area as specified in the OSHA requirement 29 CFR 1926.62.

B. Waste Disposal and Landfill Requirements:

1. Representative sample(s), of paint chip debris and demolition debris, shall be submitted for hazardous waste determination (characterization) as required by the landfill and applicable regulatory requirements. All testing and any other associated costs related to hazardous waste determination shall be paid for by the Contractor. If results are below the EPA limit(s) and characterized as a non-hazardous waste, the materials shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the Officer-in-Charge, documentation that the waste material removed from the work area has been accepted by the landfill owner.

2. If hazardous waste determination (characterization) results are above the EPA limit(s), and the debris is characterized as a hazardous waste, the materials shall be disposed of at an approved facility for receiving hazardous waste materials. The Contractor shall be responsible for all disposal costs including all transportation fees. The Contractor shall submit to the Officer-in-Charge, documentation that the lead waste material removed from the work area has been accepted by the hazardous materials approved landfill owner.

C. Disposal of Non-Hazardous Lead-Containing Waste:

1. Notifying Landfill Operator: If required by the landfill or its agents, the Contractor shall advise the landfill operator with sufficient time prior to transportation of the quantity of material to be delivered.

2. Unloading: Upon reaching the landfill, the Contractor's trucks are to approach the dump location as close as possible for unloading the Lead-Containing Waste Material.

a. The Contractor shall inspect containers as they are unloaded at the disposal site. Material in damaged containers shall be repacked in empty containers, as necessary.

b. The Contractor shall carefully place waste Containers on the ground at the disposal site, not push or throw the containers out of the trucks.

3. Clean-up procedures:

a. If containers are broken or damaged, the Contractor shall leave the containers in the truck and clean the entire truck and its contents using HEPA vacuums and wet cleaning methods, until no visible residue is observed.

b. Following the removal of all contaminated waste, the Contractor shall decontaminate the truck cargo area using HEPA Vacuums and/or wet cleaning methods until no visible residue is observed. Polyethylene sheeting shall be removed and discarded as Lead-Contaminated Waste Material, along with contaminated cleaning materials and protective clothing, in containers at the disposal site.

## 3.07 TESTING/AIR MONITORING

A. Contractor Responsibilities:

1. The Contractor shall provide the personal monitoring and necessary records for all of the Contractor's employees as required by OSHA and all other applicable law.

2. Daily area air monitoring and clearance testing shall be paid by the Contractor.

3. However, any air monitoring and testing which becomes necessary in order to follow up on work by the Contractor that has been rejected as not conforming to the requirements and performed by the City shall be paid by the General Contractor.

B. General Contractor’s Air Monitoring Consultant:

1. The General Contractor’s Air Monitoring Consultant shall ensure that the applicable specifications are being followed using the methods and requirements of the applicable scope of work and to collect daily environmental samples.

2. The General Contractor’s Air Monitoring Consultant shall be present onsite at all times.

END OF SECTION

SECTION 13288 - TESTING/AIR MONITORING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: The General Terms and Conditions of the City and County of Honolulu (not specifically attached), the Special Provisions, and all other applicable documents preceding these specifications shall govern all work specified hereinafter in all DIVISIONS AND SECTIONS.

1.02 SUMMARY: Inspection, testing and air monitoring shall be as follows:

A. General Contractor provided daily inspection (verification of compliance with bid documents and approved work plan), testing and air monitoring shall be supplied by the General Contractor for the purpose of:

1. Verifying compliance with the specifications listed in Section 13283;

2. Insuring that the City's legally required documentation is collected;

3. Providing engineering control during the project.

4. Environmental, regulatory and clearance air (and other) sampling and laboratory analyses.

5. No work shall be conducted unless the General Contractor's Air Monitoring Consultant is onsite.

6. General Contractor's Air Monitoring Consultant shall be a first-tier subcontractor.

B. Officer-in-Charge provided daily inspection (verification of compliance with bid documents and approved work plan), shall be supplied by the Officer-in-Charge for the purpose of:

1. Verifying compliance with the specifications listed in Section 13283;

2. Insuring that the City's legally required documentation is collected;

3. Providing engineering control during the project (when deemed necessary).

4. Environmental and regulatory air sampling and laboratory analyses (when deemed necessary).

5. No work shall be conducted unless Officer-in-Charge's Air Monitoring Consultant is onsite without approval.

6. The Contractor shall give, at a minimum, 7 working days notification to the Officer-in-Charge's Air Monitoring Consultant prior to the start of lead paint related work.

1.03 COORDINATION WITH OTHER SECTIONS: The testing/air monitoring requirements included in the scope of work for any testing/air monitoring consultants or inspectors, and all applicable Federal, State, and local regulations shall be coordinated with this section.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

3.01 CONTRACTOR RESPONSIBILITIES

A. The General Contractor's Air Monitoring Consultant will insure that the applicable specifications are being followed using the methods and requirements of the applicable scope of work.

B. The General Contractor's Air Monitoring Consultant shall have the authority to exercise engineering control during the project.

C. The Contractor shall be responsible for providing the personal monitoring and maintaining necessary records for all of the Contractor's employees as required by OSHA, Hawaii State law and all other applicable law.

D. The General Contractor shall obtain and provide all required and related reports and documentation as part of the contract.

E. Monitoring information developed by the General Contractor's Air Monitoring Consultant's activities while under the contract with the City shall be for the use of the City. The information will be available and offered to the Contractor when developed, but not thereafter, and shall not waive the Contractor's obligations stated elsewhere in this section.

F. Air monitoring and testing which becomes necessary in order to follow up on work by the General Contractor and the Asbestos Contractor which is rejected as not conforming to the requirements shall be the responsibility of the City. However, the full cost of such additional monitoring and testing shall be borne by the General Contractor, and shall be deducted from the final contract payment.

3.02 OFFICER-IN-CHARGE'S OVERSIGHT MONITORING CONSULTANT RESPONSIBILITIES

A. The Officer-in-Charge's Oversight Monitoring Consultant will insure that the applicable specifications are being followed using the methods and requirements of the applicable scope of work.

B. The Officer-in-Charge's Oversight Monitoring Consultant shall have the authority to exercise engineering control during the project, if deemed necessary.

C. The Officer-in-Charge's Oversight Monitoring Consultant shall have the authority to stop work, if deemed necessary.

D. Air monitoring shall be performed to detect airborne lead concentrations inside and outside the work area for the duration or portions of the project, if deemed necessary.

END OF SECTION