HUMAN RESOURCES OFFICE

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
Honolulu, Hawaii

BOARD OF LAND AND NATURAL RESOURCES

Dawn N.S. Chang
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

Job No. J00AO99B
DLNR HUMAN RESOURCES OFFICE IMPROVEMENTS
KALANIMOKU BUILDING ROOM 231
HONOLULU, OAHU, HAWAII

Architect: Omizu Architecture, Inc.

May 2024

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
Honolulu, Hawaii

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Job No. J00AO99B
DLNR HUMAN RESOURCES OFFICE IMPROVEMENTS
KALANIMOKU BUILDING ROOM 231
HONOLULU, OAHU, HAWAII

Approved: _____
ALICE H. SCHUTTE
Administrator
Human Resources Office

Approved: _____
CARTY S. CHANG, P.E.
Chief Engineer
Engineering Division

May 2024

NOTICE TO BIDDERS
(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. **J00AO99B, DLNR Human Resources Office Improvements**, Honolulu, Oahu, Hawaii shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the Hawaii State e-Procurement (HIePRO). HIePRO is accessible through the State Procurement Office website at www.spo.hawaii.gov.

The Department of Land and Natural Resources Interim General Condition, dated October 1994, as amended, and the General Conditions –AG008, latest revision shall be made part of the specifications.

The project is located at Kalanimoku Building Room 231, 1151 Punchbowl Street Honolulu, Oahu, Hawaii.

The work shall generally consist of replacement of flooring and wall base, in the human resources office on the second floor level of the Kalanimoku building. In addition, abatement of hazardous materials, testing and monitoring will be required during removal work. Repainting of existing wall base, remove and dispose existing hardwood service counters / security entry door, six new modular workstations, temporary relocation of office furniture prior to flooring work and reinstallation of office furniture, and installation of new door within the existing entry hallway. Fire alarm work and minor electrical work within the existing hall is in the scope of work.

To be eligible to submit a bid, the Bidder must possess a valid State of Hawaii Contractor's license classification "B".

A voluntary pre-bid conference and site visit will be held at the project site, on the second floor Makai Breezeway near room 231 on May 17, 2024 at 2:00 pm. In order to protect public health and safety, interested bidders must wear a mask and follow social distancing practices by maintaining a distance of 6 feet from each other.

The estimated cost of construction is $350,000.00.

The award of the contract, if it be awarded, will be subject to the availability of funds.

Since the estimated value of the cost of construction is more than $250,000, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall apply.

Should there be any questions, please refer to the HIePRO solicitation.

INFORMATION AND INSTRUCTIONS TO BIDDERS

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INFORMATION AND INSTRUCTIONS TO BIDDERS

A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.

B. PROPOSALS**:** Bidders shall submit their bid, including the completed proposal form, bid bond, and any other documents required by the solicitation as part of their bid through the State of Hawaii e-Procurement System (HIePRO). See Item D, PROPOSAL FORM.

C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications and are referred to hereafter as the General Conditions.

D. PROPOSAL FORM: **The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.**

E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Board of Land and Natural Resources (Board).

F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a questionnaire. When requested by the State, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

G. BID SECURITY: A bid security will be furnished by each bidder as provided in sub-section 2.7 of the General Conditions. The successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished.

The Board reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the General Conditions.

Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law.

H. CONTRACTOR'S LICENSE REQUIRED: The Board will reject all bids received from contractors who have not been licensed by the State Contractors License Board in accordance

with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto.

I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Board.

J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.

K. SUCCESSFUL BIDDER TO FILE PERFORMANCE AND PAYMENT BONDS: The successful bidder will be required to file performance and payment bonds each; in the amount equal to the total contract price, including amounts estimated to be required for extra work, as provided in sub-section 3.6 of the General Conditions.

L. NUMBER OF EXECUTED ORIGINAL COUNTERPARTS OF CONTRACT DOCUMENTS: If requested by the Board, six copies of the Contract, performance and payment bonds shall be executed.

M. CHANGE ORDERS: No work of any kind in connection with the work covered by the plans and specifications shall be considered as change order work, or entitle the Contractor to extra compensation, except when the work has been ordered in writing by the Chief Engineer (Engineer) and in accordance with sub-section 4.2 of the General Conditions.

The Contractor shall clearly identify and inform the Engineer in writing of any deviations from the contract documents at the time of submission and shall obtain the Engineer's written approval to the specified deviation prior to proceeding with any work.

N. WAGES AND HOURS: In accordance with sub-sections 7.3 to 7.9 of the General Conditions relative to hours of labor, minimum wages and overtime pay, the current minimum wage rates promulgated by the Department of Labor and Industrial Relations (DLIR) shall be paid to the various classes of laborers and mechanics engaged in the performance of this contract on the job site. The minimum wages shall be increased during the performance of the contract in an amount equal to the increase in the prevailing wages for those kinds of work as periodically determined by the DLIR.

The Department of Land and Natural Resources will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the said minimum wage rates. The possibility of wage increase is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Department under this Contract.

Work shall be allowed within the hours between 7:45 am to 4:45 pm on working days. Abatement work shall only be allowed after business hours or during the weekend. No work shall be done on Saturdays, Sundays, legal State holidays, and/or in excess of eight (8) hours each day without the written consent of the Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

O. PERMITS: The State will process permit applications whenever possible, and the Contractor

shall procure the pre-processed permits and pay the required fees. If permit applications are not processed by the State, the Contractor shall process the permit applications, permits and licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

P. PROPERTY DAMAGE: It shall be the responsibility of the contractor to respect State property and to prevent damage to existing improvements. The Contractor will be responsible for damages resulting from construction operations. Immediately upon discovery, the Contractor shall repair such damage to the satisfaction of the Engineer.

All trees and shrubbery outside the excavation, embankment or construction limits shall be fully protected from injury. All areas damaged by construction activities including the laydown area shall be seeded and regressed upon completion of the project.

Q. TIME: The time of completion is specified in the Proposal. It is the Board's intention to insist the Contractor diligently prosecute the work to completion within the specified time.

Prospective bidders are reminded that the State has the option to proceed with or abandon a project depending on whether the project can be completed for occupancy in the specified time.

It is the bidder's responsibility to check the availability of all materials before bidding. The bidder shall select sub-contractors and suppliers who can warrant availability and delivery of all specified or qualified materials to assure project completion within the specified time.

The successful bidder must assume all risks for completing the project by the specified date. There shall be no extension of time for any reason except for delays caused by acts of God, labor disputes involving unions, or actions of the State. If for any reason the project falls behind schedule, the Contractor shall at its own cost, take necessary remedial measures to get the project back on schedule, i.e., working overtime, air freighting all materials, etc. In addition, if the Contractor fails to fully complete the project by the completion date, Contractor will be required to make the facility usable at its own cost.

R. BIDDER'S RESPONSIBILITY TO PROVIDE PROPER SUPERINTENDENCE: The successful low bidder shall designate in writing to the Engineer the name of its authorized superintendent (Superintendent), who will be present at the job site whenever any work is in progress. The Superintendent shall be responsible for all work, receiving and implementing instructions from the Engineer in a timely manner. The cost for superintendence shall be considered incidental to the project.

If the Superintendent is not present at the site of work, the Engineer shall have the right to suspend the work as described under sub-section 5.5 c. and 7.20 - Suspension of Work of the General Conditions.

S. LIQUIDATED DAMAGES: Liquidated damages in the amount specified in the Proposal will be assessed for each and every calendar day from and after the expiration of the time period stated in the Contract for the completion of the project.

T. HIRING OF HAWAII RESIDENTS: The Contractor shall comply with Act 68, SLH 2010,

in the performance and for the duration of this contract. The Contractor shall ensure that Hawaii residents compose not less than eighty percent of the workforce employed to perform the contract work on the project. The eighty percent requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees with shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

The requirements shall apply to any subcontract of $50,000 or more in connection with the Contractor, that is, such Subcontractors must also ensure that Hawaii residents compose not less than eighty percent of the Subcontractor's workforce used to perform the subcontract.

U. WATER AND ELECTRICITY: The Contractor shall make all necessary arrangements and pay all expenses for water and electricity used in the construction of this project.

V. PUBLIC CONVENIENCE AND SAFETY: The Contractor shall conduct construction operations with due regard to the convenience and safety of the public at all times. No materials or equipment shall be stored where it will interfere with the safe passage of public traffic. The Contractor shall provide, install, and maintain in satisfactory condition, all necessary signs, flares and other protective facilities and shall take all necessary precautions for the protection of the work and the convenience and safety of the public. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.

W. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever the contract that the Contractor is to perform work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that the Contractor shall perform such work or furnish said materials without extra charge or allowance or direct payment of any sort. The cost of performing such work or furnishing said material is to be included by the Contractor in a unit price for the appropriate item unless it is expressly specified that such work or material is to be paid for as extra work.

X. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer for review and approval. After the Engineer approves the as-built drawings, the contractor shall submit an electronic copy in Adobe PDF format on CD ROM.

Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free

Z WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the

protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.

AA. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Board reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.

BB. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.

CC. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.

DD. COMPLIANCE WITH §3-122-112 HAR:
As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "**Certificate of Compliance**". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "**Certificate of Good Standing**". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at http://vendors.ehawaii.gov to acquire a "Certificate of Vendor Compliance" indicating the bidder's status is compliant with the requirements of §103D-310(c), HRS, and shall be accepted for contracting and final payment purposes. Bidders that elect to use the new HCE services will be required to pay an annual fee of $15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

P R O P O S A L

FOR

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
State of Hawaii

Job No. J00AO99B
DLNR HUMAN RESOURCES OFFICE IMPROVEMENTS
KALANIMOKU BUILDING, ROOM 231
HONOLULU, OAHU, HAWAII

_____, 20__

Chief Engineer
Engineering Division
Department of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary to provide selective demolition of existing carpet, wall base, hardwood service counters and security entry door in the Human Resources Office, Room 231 on the second floor level of the Kalanimoku building. Abatement of hazardous materials, testing and monitoring will be required during removal work. Relocation, salvage, itemizing / photo documentation of furniture pieces, on-site storage and moving back to original locations of existing modular systems furniture and furnishing is within the scope of work. New resilient tile flooring, broadloom carpeting, wall base, repainting at wall base, fire alarm work and minor electrical work will be included, as required or called for in this Proposal. New interior wall partition, door / frame / door hardware and workstation furniture all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

Job No. J00AO99B
DLNR HUMAN RESOURCES OFFICE IMPROVEMENTS
KALANIMOKU BUILDING ROOM 231
HONOLULU, OAHU, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 19) of:

_____

_____Dollars ($_____)
and will fully complete all work under this contract within 180 consecutive calendar days of which, Twenty-one (21) consecutive days on-site construction shall be included in the 180 consecutive days, from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

PROPOSAL

Item No.	Quantity	Unit	Description	Unit Price	Total
		BASE BID			
1.		LS	Selective Demolition Work; to include demolition, hauling & disposal as required to construct new improvements. Relocation of Salvageable Furnitures for reinstallation and temporary storage of items indicated for reinstallation.		$_____
2.		LS	Wood Treatment.		$_____
3.		LS	Rough Carpentry		$_____
4.		LS	Sealants.		$_____
5.		LS	Hollow Metal Frames.		$_____
6.		LS	Wood Doors.		$_____
7.		LS	Finish Hardware.		$_____
8.		LS	Glazing.		$_____
9.		LS	Gypsum Board		$_____
10.		LS	Resilient Tile Floor.		$_____
11.		LS	Carpeting.		$_____
12.		LS	Repainting.		$_____
13.		LS	Systems Furniture		$_____
14.		LS	Asbestos Abatement of existing VCT flooring including VCT beneath carpeting.		$_____
15.		LS	Testing and Air Monitoring associated w/ existing flooring abatement.		$_____
16.		LS	Re-installation of office furniture as indicated on plans		$_____
17.		LS	Addressable Fire Alarm System		$_____
18.		LS	Electrical Work		$_____
				Subtotal Base Bid (Items 1-18)	$_____
19.		LS	Mobilization and Demobilization (not to exceed 10% of the Subtotal Base Bid)		$_____
				Total Base Bid (Items 1-19)	$_____

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your selection of recycled or non-recycled product by indicating its cost FOB jobsite unloaded in the schedule below, including applicable General Excise & Use Taxes.

DESCRIPTION	RECYCLED PRODUCT COST	NONRECYCLED PRODUCT COST
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____

The bidder requesting a recycled product preference shall also complete and submit the form "CERTIFICATION OF RECYCLED CONTENT" as shown in the Interim General Conditions and provide all supporting information with this proposal. Additional information may be requested to qualify a product.

The following definitions are applicable to the CERTIFICATION OF RECYCLED CONTENT form:

"Post-consumer recovered material" means any product used by a consumer, including a business that purchases the material, that has served its intended end use, and that has been separated or diverted from the solid waste stream for the purpose of use, reuse, or recycling.

"Product" includes materials, manufactures, supplies, merchandise, goods, wares, and foodstuffs.

"Recovered material" means waste material and by-products that have been separated, diverted, or removed from the solid waste stream after a manufacturing process for the purpose of use, reuse, or recycling. Recovered material does not include those materials and by-products that are generated and normally reused on-site or within original manufacturing processes (such as mill broke, in the case of paper products).

"Recycled content" means the percentage of a product composed of recovered material, or post-consumer recovered material, or both.

"Recycled product" means a product containing recovered material, or post-consumer recovered material, or both.

The bidder agrees that preference for recycled products shall be taken into consideration to determine the low bidder in accordance with said Section and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive any preference.

APPRENTICESHIP AGREEMENT PREFERENCE

1. If applicable to this project, any bidder seeking the preference must be a party to an apprenticeship agreement registered with the State Department of Labor and Industrial Relations (DLIR) at the time the bid is submitted for each apprenticeable trade the bidder will employ to construct the project. "Employ" means the employment of a person in an employer-employee relationship.

   a. The apprenticeship agreement shall be registered with the DLIR and conform to the requirements of Hawaii Revised Statutes Chapter 372.

   b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain preference.

   c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.

2. A bidder seeking the preference must state the apprenticeable trade the bidder will employ for each trade to be employed to perform the work by submitting a completed signed original *Certification Form 1* verifying participation in an apprenticeship program registered with DLIR. "Apprenticeable trade" shall have the same meaning as "apprenticeable occupation" pursuant to Hawaii Administrative Rules (HAR) §12-30-5.

   a. The *Certification Form 1* shall be authorized by an apprenticeship sponsor listed on the DLIR list of registered apprenticeship programs. "Sponsor" means an operator of an apprenticeship program and in whose name the program is approved and registered with the DLIR pursuant to HAR §12-30-1.

   b. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.

   c. The completed signed original *Certification Form 1* for each trade must be submitted with the bid. Previous certifications shall not apply.

   d. When filling out the *Certification Form 1*, the name of Apprenticeable Trade and Apprenticeship Sponsor must be the same as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the DLIR website. "Registered apprenticeship program" means a construction trade program approved by the DLIR pursuant to HAR §12-301 and §12-30-4.

   e. The *Certificate Form 1* and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: http://hawaii.gov/labor/wdd.

3. Upon receiving the *Certification Form 1*, the Procurement Officer will verify that the apprenticeship program is on the List of Construction Trades in Registered Apprenticeship Programs and that the form is signed by an authorized official of the Apprenticeship Program Sponsor. If the programs and signature are not confirmed by the DLIR, the bidder will not qualify for the preference.

4. If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's bid amount by five percent (5%) for evaluation purposes.

5. Should the bidder qualify for other preferences, all applicable preferences shall be applied to the bid price.

CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body.

CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 19) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 19 on page P-1.

It is understood and agreed that the Board of Land and Natural Resources reserves the right to reject any and/or all bids and waive any defects when, in the Board's opinion, such rejection or waiver will be for the best interest of the State of Hawaii.

In the event all bids exceed available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized in situations where time or economic considerations preclude resolicitation of work of a reduced scope to negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsible and responsive bidder, in order to bring the bid within the amount of available funds. It is understood and agreed upon that the head of the purchasing agency may delete a portion or all of any item(s) in the proposal at the stated unit or lump sum price as necessary to stay within the available funding. The bidder is responsible to make an earnest effort to represent the actual cost of each item, including all materials, labor, equipment, overhead and profit in their bid proposal to preclude claims of anticipated profit or loss of profit because of an unbalanced bid proposal.

It is also understood that if a mutually agreeable cost for the reduced scope of work necessitated by a lack of available funds cannot be agreed upon between the bidder and the head of the purchasing agency within 14 calendar days after the bid opening, then the bid may be rejected in the best interest of the purchasing agency, and the head of the purchasing agency may negotiate in progressive order (lowest to highest) with the next lowest responsible and responsive bidder.

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Board of Land and Natural Resources to hold all bids received for a period of one hundred eighty (180) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to one (1) year after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease, and that the undersigned will perform all quantities of work as either increased or decreased, in accordance with the provisions of the Contract Specifications.

It is also understood and agreed that the estimated quantities shown for the items for which a UNIT PRICE is asked in this Proposal are only for the purpose of comparing on a uniform basis, bids offered for the work under this contract, and the undersigned agrees that he is satisfied with and will at no time, dispute said estimated quantities as a means of claims for anticipated profit or loss of profit, because of a difference between the quantities of the various classes of work done or the materials and equipment installed, and the said estimated quantities. On UNIT PRICE bids, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

After the HIePRO bid due date and time, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. In the comparison of bids, words written in the proposal shall govern over figures and unit prices will govern over totals. Until the award of the contract, however, the right will be reserved to reject any and all proposals and to

waive any defects or technicalities as may be deemed best for the interest of the State.

It is also understood and agreed that liquidated damages in the amount of ONE HUNDRED FIFTY AND NO/100 DOLLARS ($150.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder must enter into and execute a contract with the Board of Land and Natural Resources and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to provisions of Section 103D-324 and 325, Hawaii Revised Statutes and any law applicable hereto.

It is also understood and agreed that the successful bidder will provide all necessary labor, materials, tools, equipment, and other incidentals necessary to do all the work and furnish all the materials specified in the contract in the manner and time herein prescribed, and according to the requirements of the Engineer as therein set forth.

It is understood that by submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past two years.

It is understood that by submitting this proposal in accordance with HAR 3-122-192, the undersigned is declaring that the price submitted is independently arrived without collusion.

It is also understood that by submitting this proposal, a Certification for Safety and Health Programs for bids in excess of $100,000 (in accordance with HRS 396-18), the undersigned certifies that his organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division (HIOSH).

It is further understood and agreed that the successful bidder shall comply with paragraph 3.1.a "SUBCONTRACTING" of the General Provisions which requires that the contractor shall perform with his own organization and with the assistance of workmen under his immediate superintendence, work of a value not less than twenty percent (20%) of the value of all work embraced in the Contract, except that certain contract items of work, if specifically referred to in the special provisions, will be exempted from said twenty percent requirement.

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State (DLNR, Engineering Division) required to demonstrate compliance with these subsections. Any bidder making a false affirmation or certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.

RECEIPT OF ADDENDA

The bidder also acknowledges receipt of any and all addenda issued by the Engineering Division, by recording the date of receipt of the respective addenda in the space provided below:

Addendum	Date Received	Addendum	Date Received
No. 1	_____	No. 5	_____
No. 2	_____	No. 6	_____
No. 3	_____	No. 7	_____
No. 4	_____	No. 8	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted.

It is also understood and agreed that if this Proposal is accepted and the undersigned should fail or neglect to contract as aforesaid, the Board may determine that the bidder has abandoned the Contract, and thereupon, forfeiture of the security accompanying his proposal shall operate and the same shall become the property of the Board.

JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder agrees that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes (HRS), who will be engaged by the Bidder on this project to perform the required work indicated pursuant to Section 103D-302, HRS. It is the sole responsibility of the contractor to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project. The Bidder certifies that the completed listing of joint contractors or subcontractors fulfills the requirements for the project and the Bidder, together with the listed subcontractors or joint contractors have all the specialty contractor's licenses to complete the work, except as provided for in HRS §103D-302(b). Failure of the Bidder to comply with this requirement may be just cause for rejection of the bid.

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

General Engineering "A" Contractors automatically have these "C" specialty contractor's licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-49, C-56, C-57a, C-57b and C-61.

General Building "B" Contractors automatically have these "C" specialty contractor's licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-32a, C-42a and C-42b.

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor's nature and scope of work to be performed for this project and provide the complete firm name of the joint contractor or subcontractor in the respective columns. If the Bidder is a general contractor and providing the work of the required specialty contractor, whose license is not automatically held pursuant to HAR 16-77-32, fill in the Bidder's (general contractor's) name and nature and scope of work to be performed on this project.

List only one joint contractor or subcontractor per required specialty contractor's classification, unless within the same specialty, the work of each joint contractor or subcontractor can be described so that there is no overlap in work descriptions.

If a contractor's license is required by law for the performance of the work which is called for in this bid, the bidder and all subcontractors must have the required license before the submission of the bidder's proposal in the case of a non-federal aid project, and for federal-aid projects, the bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

Enclosed herewith is a:

1.	Surety Bond (*1)	)	
2.	Legal Tender (*2)	)	
3.	Cashier's Check (*3)	)	
4.	Certificate of Deposit (*3)	)	in the
5.	Certified Check (*3)	)	amount
6.	Official Check (*3)	)	of
7.	Share Certificate (*3)	)	
8.	Teller's Check (*3)	)	
9.	Treasurer's Check (*3)	)	

(Cross Out Those Not Applicable)

_____

_____Dollars ($_____)

as required by law.

Respectfully submitted,

_____
Name of Company, Joint Venture
or Partnership

_____
Contractor's License No.

By _____
Signature (*4)

Title _____
Print Name _____
Date _____
Address _____
_____
Telephone No. _____
E-Mail Address _____

NOTES:

1. Surety bond underwritten by a company licensed to issue bonds in this State;

2. Legal tender; or

3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

   A. These instruments may be utilized only to a maximum of $100,000.

   B. If the required security or bond amount totals over $100,000, more than one instrument not exceeding $100,000 each and issued by different financial institutions shall be accepted.

4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company and also the names and residence addresses of all officers of the Company.

5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT, MISSING PAGES MAY INVALIDATE YOUR BID.

End of Proposal

SPECIAL PROVISIONS

Amend INTERIM GENERAL CONDITIONS, dated October 1994, as follows:

Section 1 – Definitions

AMEND the definition of "Bidder" with the following:

Bidder or Offeror: Any individual, partnership, firm, corporation, joint venture, design-build entity, or other legal entity submitting, directly or through a duly authorized representative or agent, a proposal for the work contemplated.

Section 2 – Proposal Requirements and Conditions

1. **AMEND** Section 2.1 Qualification of Bidder with the following:

Written Notice of Intent to Bid or Offer: A written Notice of Intent to Bid is not required for the Solicitation.

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR. A certified letter is not required prior to bid opening.

Compliance with §3-122-112 HAR: As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. Tax Clearance (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "Certificate of Compliance". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "Certificate of Good Standing". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue;

certificates must be valid on the date received by the Department.

Hawaii Compliance Express. Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at http://vendors.ehawaii.gov to acquire a "Certificate of Vendor compliance" indicating that bidder's status is compliant with requirements of §103D-310(c), HRS, shall be accepted for contracting and final payment purposes.
Bidders that elect to use the new HCE services will be required to pay an annual fee of $15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

2. **ADD** Section 2.4a, Pre-Bid Conferences

Required Pre-bid Conferences: For construction and design-build projects with an estimated value of $500,000 or more and solicited under the competitive sealed bid method (103D-302 HRS); and for construction and design-build projects with an estimated value of $100,000 or more and solicited under the competitive sealed proposal method (103D-303 HRS); a pre-bid conference is required.

Other Pre-Bid Conferences: The Department may require a pre-bid conference for construction or design-build projects that are below the dollar threshold listed in above or when projects have special or unusual requirements.

Other Conditions: The Department may require the prospective Bidders to make a physical inspection of the project site and make attendance at the pre-bid conference a condition for submitting an offer.

Nothing stated at the pre-bid conference shall change the solicitation unless a change is made by written addendum.

3. **DELETE** Section 2.5, Addenda and Interpretations, in its entirety and replace with the following:

"Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated using the question and answer section on the HIePRO solicitation for interpretation and must be received in the time frame set in the HIePRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder's sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents."

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting "sixty (60)" and replacing with "one hundred eighty (180)" in the first paragraph.

2. **AMEND** Section 3.3, Award of Contract, by adding the following after the first paragraph:

"If the contract is not awarded within the one hundred eighty (180) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the

Department elects to stop making such requests."

3. **AMEND** Section 3.9, Notice to Proceed, by replacing the last paragraph with the following:

In the event the Notice to Proceed is not issued within three hundred and sixty-five (365) calendar days after the date of bid opening, the Contractor may submit a claim for increased labor and materials costs (but not overhead costs). The claim shall be for labor and material costs incurred after 365 days and the full duration of the contract time allowed for the performance of the work (as specified on Page 1 of the Request for Proposals) have elapsed. Such claims shall be accompanied with the necessary documentation to justify the claim. No payments will be made for escalation costs that are not fully justified as determined by the State.

4. **ADD** Section 3.10, Protests:

"**3.10 PROTESTS**—Pursuant to Section 103D-701, Hawaii Revised Statutes, an actual or prospective offeror who is aggrieved in connection with the solicitation or award may submit a protest. Any protest shall be submitting in writing to the Chairperson, Department of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813, or designee as specified in the solicitation.

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known the facts giving rise thereto; provided that a protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

The notice of award, if any, resulting from this solicitation shall be posted on the HIePRO website.

Section 5 – Control of Work

AMEND Section 5.8 Value Engineering Incentive by deleting "$100,000" and replacing with "$250,000" in the first paragraph.

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

4. If the substitution meets all the requirements of the specifications and plans.

Section 7 – Prosecution and Progress

1. **DELETE** Section 7.2d in its entirety and replace with the following:

"d. Proof of Insurance Coverage

A Certificate of Insurance or other documentary evidence, to the satisfaction of the Engineer, that the Contractor has in place all insurance coverage required by the contract. The Certificate of Insurance shall contain wording which identifies the Project number and Project title for which the certificate of insurance is issued. Refer to the following for insurance requirements:

1. Insurance Requirements

(a) Obligation of Contractor - Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance must have the approval of the Department as to limit, form and amount and must be maintained with a company authorized by laws of the State to issue such insurance in the State of Hawaii. Coverage by a "Non-Admitted" carrier is permissible provided the carrier has a AM Best's Rating of "A-VII" or better.

(b) All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.

(c) Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. Certificates shall identify if the insurance company is a "captive" insurance company or a "Non-Admitted" carrier to the State of Hawaii. The Best's Rating must be stated for the "Non-Admitted" carrier. Certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed until at least thirty (30) days written notice has been given to the Engineer by registered mail. The insurance policies shall name the State of Hawaii, its officers and employees as an additional insured and such coverage shall be noted on the certificate. Should any policy be canceled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

(d) Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.

(e) All insurance described herein shall be primary and cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.

(f) The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required or a copy of the actual policies covering the work. Failure to comply with the Engineer's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.

(g) If the Contractor is self-insured, it shall furnish, upon the request and the satisfaction of the Engineer, any documentation to demonstrate the ability to self-insure itself. The Engineer, from time to time, can conduct an audit to determine the ability of the Contractor to be self-insured. Failure to comply with the Engineer's request will be considered a material breach of the contract, and at the discretion of the Engineer, may be sufficient grounds to terminate

the contract, suspend any work or withhold future payments.

(h) It is the responsibility of the Contractor to notify the Department of any changes to its insurance policies or if the Contractor receives a notice of cancellation of any of its insurance policies. The Contractor will immediately provide written notice to the Department should the insurance policies evidenced on its Certificate of Insurance form be cancelled, limited in scope, or not renewed upon expiration.

2. Types of Insurance - The Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the contract, whether such operations be by the Contractor itself or by the subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

(a) Worker's Compensation. The Contractor and all subcontractors shall obtain worker's compensation insurance for all persons whom they employ or may employ in carrying out the work under this contact. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.

(b) Commercial General Liability. The Contractor shall obtain General Liability insurance with a limit of not less than $1,000,000 per occurrence and $2,000,000 aggregate. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess polices."

(c) Comprehensive Automobile Liability. The Contractor shall obtain Auto Liability insurance covering all owned, non-owned and hired autos with a combined single Limit of not less than $1,000,000 per accident for bodily injury and property damage. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess polices.

Furthermore, the Contractor's commercial general liability insurance and automobile liability insurance shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, or in connection with, the performance of work under this contract.

The Contractor's property damage liability insurance shall provide for all damages arising out of injury to or destruction of property of others including the Department's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

The Contractor shall either:

i. Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractors' comprehensive general liability, automobile liability and property damage liability insurance of the type and in the same amounts specified herein; or

ii. Insure the activities of its subcontractors in its own policy.

The Contractor will be permitted, in cooperation with insurers, to maintain a self-insured retention for up to 25% of the per occurrence combined single limits of the commercial general liability and the automobile liability policies. The existence of the self-insured retention must be noted on the certificate of insurance coverage submitted to the Department or else it will be understood that the insurer is providing first dollar coverage for all claims. For all claims within the self-insured retention amount, the rights, duties and obligations between the Contractor and the Department shall be identical to that between a liability insurer and the Department, as an additional insured, as if there was no self-insured retention.

(d) Builder's Risk Insurance. Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as additional name insured. The insurance policy shall contain the following clauses: 1) "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawaii."; and 2) "It is agreed that any insurance maintained by the State of Hawaii will apply in excess of, and not contributed with, insurance provided by this policy." The required limit of insurance may be provided by a single policy or with a combination of primary and excess polices.

The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

2. **DELETE** Section 7.16 in its entirety and replace with the following:

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, their employees, officers and agents against all losses, claims, suits, liability and expense, including but not limited to attorneys' fees, arising out of injury to or death of persons (including employees of the State and the Department, the Contractor or any subcontractor) or damage to property resulting from or in connection with performance of the work and not caused solely by the negligence of the State or the Department, their agents, officers and employees. The State or the

Department may participate in the defense of any claim or suit without relieving the Contractor of any obligation hereunder. The purchase of liability insurance shall not relieve the Contractor of the obligations described herein.

The Contractor agrees that it will not attempt to hold the State and its Departments and Agencies and their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these specifications or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

The Contractor shall defend, indemnify and hold harmless the State and its Departments and Agencies and their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

1. **DELETE** Section 8.7a in its entirety and replace with the following:

a. Tax Clearances from the State of Hawaii Department of Taxation and Internal Revenue Service, subject to section 103D-328, HRS, current within two months of issuance date indicating that all delinquent taxes levied or accrued under State Statutes against the contractor have been paid.

2. **ADD** Section 8.7d, Certificate of Compliance:

d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.

    1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

3. **ADD** Section 8.7e, Hawaii Compliance Express:

e. In lieu of submitting the tax clearances from Taxation and IRS, and SPO Form -22, the Contractor may choose to use the Hawaii Compliance Express as described on page SP-1 of this Special Provisions.

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DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01019

GENERAL SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials and equipment necessary and required to construct in place complete all work as indicated on the drawings and as specified herein.

1.2 GENERAL

A. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.

B. All lines and grades shall be established by a licensed surveyor, or licensed Civil Engineer, registered in the State of Hawaii. The Contractor shall submit evidence of current and valid registration.

C. Notices: The Contractor shall notify the Engineer and give at least three (3) working days notice before starting any work.

D. Disruption of Utility Services: All work related to the temporary disconnection of electrical system shall be pre-arranged with the Engineer so that any disruption of such services will be kept to a minimum. In the event temporary power hook-up is required, the Contractor shall provide the necessary services.

E. Contractor's Operations

1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.

2. The Contractor shall maintain safe passageway to and from the facility for the user agency personnel and the public at all times.

F. Lead Paint

1. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. The Contractor shall inform its employees, subcontractors, and all other persons engaged in the project that lead containing

paints are present in the existing buildings at the job site and to follow the requirements of the Department of Labor and Industrial Relations, Division of Occupational Safety and Health, Title 12, Subtitle 8,Chapter 148, Lead Exposure in Construction, Hawaii Administrative Rules (Chapter 12-148, HAR).

G. Parking Policy for Contractor

1. The Contractor and its employees will not be allowed to park in zones assigned to facility personnel.

2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn damaged by the Contractor shall be restored as instructed by the Engineer at no cost to the State.

H. Toilet Accommodations: The Contractor may use the existing toilet facilities if so designated by the Engineer; however, it is the Contractor's responsibility to keep same clean and in a sanitary condition at all times.

I. Protection of Property: The Contractor shall continually maintain adequate protection of all its work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. The Contractor shall repair, replace or pay the expense of repair of damages resulting from its operations.

J. Use of Power Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect the facility personnel, and the public whenever power driven equipment is used.

K. Safety: The Contractor shall carefully read and strictly comply with the requirements of the Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, as amended, is applicable and made a part of the Contract.

L. Clean Up Premises: The Contractor shall clean up and remove from premises all debris accumulated from operations as necessary or as directed. See also Section 7.25 of the General Conditions.

M. Responsibility

1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the prime Contractor in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.

2. Should the Contractor discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, the Contractor will be held responsible for any cost involved in correction of work placed due to such discrepancy.

N. Cooperation With Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone limits of this Contract. The Contractor of this project shall, to the extent ordered by the State, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

O. Division of the Work: The Divisions and Sections into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to all work specified within each Section.

P. Drawings and Specifications

1. The Contractor shall not make alterations in the drawings and specifications. In the event the contractor discovers any errors or discrepancies, the Contractor shall immediately notify the Engineer in accordance with the General Conditions.

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

3. Specifications and drawings are prepared in abbreviated form and 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.

Q. Required Submittals

1. Required submittals as specified in the Technical Sections of these specifications include one or more of the following: Shop drawings; color samples; material samples; technical data; schedules of materials; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.

2. The Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.

3. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:

a. As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required.

b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.

c. The following procedure shall be followed:

1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans.

2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.

3) The Contractor shall submit the as-built drawings to the Engineer for review and approval. After the Engineer approves the as-built drawings, the Contractor shall submit an electronic copy in Adobe PDF format on CD ROM.

4) Any as-built drawing which the Engineer determines does not accurately record the deviation shall be corrected by the State, and the Contractor shall be charged for the services.

END OF SECTION

SECTION 01090

STANDARD REFERENCES

PART 1 - GENERAL

Wherever used in the project, the following abbreviations will have the meanings listed:

Abbreviation	Company
AA	Aluminum Association Incorporated 818 Connecticut Avenue, N.W. Washington, D.C. 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W., Suite 225 Washington, D.C. 20001
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI
AEIC	Association of Edison Illuminating Companies 51 East 42nd Street New York, NY 10017
AFBMA	Anti-Friction Bearing Manufacturer's Association 60 East 42nd Street New York, NY 10017
AGA	American Gas Association 8501 East Pleasant Valley Road Cleveland, OH 44131
AGMA	American Gear Manufacturer's Association 1330 Massachusetts Avenue, N.W. Washington, D.C.
AISC	American Institute of Steel Construction 101 Park Avenue New York, NY 10017
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, D.C. 20036

Abbreviation	Company
AITC	American Institute of Timber Construction 333 West Hampden Avenue Englewood, CO 80110
AMCA	Air Moving and Conditioning Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
APA	American Plywood Association 1119 A Street Tacoma, WA 98401
API	American Petroleum Institute 1801 K Street N.W. Washington, DC 20006
ARI	Air-Conditioning and Refrigeration Institute 1814 North Fort Myer Drive Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASCII	American Standard Code for Information Interchange United States of America Standards Institute 1430 Broadway New York, NY 10018
ASE Code	American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers United Engineering Center 345 East 47th Street New York, NY 10017

Abbreviation	Company
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood Preservers Association 1625 Eye Street Washington, DC 20006
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CBM	Certified Ballast Manufacturers 2120 Keith Building Cleveland, OH 44115
CMAA	Crane Manufacturers Association of America, Inc. (Formerly called: Overhead Electrical Crane Institute - OECI) 1326 Freeport Road Pittsburgh, PA 15238
CRSI	Concrete Reinforcing Steel Institute 180 North La Salle Street Chicago, IL 60601
CSA	Canadian Standards Association 178 Rexdale Boulevard Rexdale, Ontario, M9W IR3, Canada
DEMA	Diesel Engine Manufacturer's Association 122 East 42nd Street New York, NY 10017

Abbreviation	Company
DIS	Division of Industrial Safety California Department of Industrial Relations 2422 Arden Way Sacramento, CA 95825
EEI	Edison Electric Institute 90 Park Avenue New York, NY 10016
EIA	Electronic Industries Association 2001 Eye Street N.W. Washington, DC 20006
EJMA	Expansion Joint Manufacturer's Association 331 Madison Avenue New York, NY 10017
ESO	Electrical Safety Orders, California Administrative Code, Title 8, Chap. 4, Subarticle 5 Office of Procurement, Publications Section P.O. Box 20191 8141 Elder Creek Road Sacramento, CA 95820
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch Washington Navy Yard, Bldg. 197 Washington, DC 20407
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research 1151 Boston-Providence Turnpike Norwood, MA 02062
HEI	Heat Exchange Institute 122 East 42nd Street New York, NY 10017

Abbreviation	Company
HI	Hydraulic Institute 1230 Keith Building Cleveland, OH 44115
IAPMO	International Association of Plumbing and Mechanical Officials 5032 Alhambra Avenue Los Angeles, CA 90032
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, CA 90601
ICEA	Insulated Cable Engineers Association P.O. Box P South Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017
IES	Illuminating Engineering Society C/O United Engineering Center 345 East 47th Street New York, NY 10017
ISA	Instrument Society of America 400 Stanwix Street Pittsburgh, PA 15222
JIC	Joint Industrial Council 7901 Westpark Drive McLean, VA 22101
MILSPEC	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Street, N.E. Vienna, VA 22180

Abbreviation	Company
NAAMM	National Association of Architectural Metal Manufacturers 100 South Marion Street Oak Park, IL 60302
NACE	National Association of Corrosion Engineers P.O. Box 986 Katy, TX 77450
NEC	National Electric Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NEMA	National Electrical Manufacturer's Association 155 East 44th Street New York, NY 10017
NESC	National Electric Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
NFPA	National Forest Products Association (Formerly called: National Lumber Manufacturer's Association) 1619 Massachusetts Avenue, N.W. Washington, DC 20036
OSHA	Occupational Safety and Health Act U.S. Department of Labor San Francisco Regional Office 450 Golden Gate Avenue, Box 36017 San Francisco, CA 94102
PPIC	The Plumbing & Piping Industry Council, Inc. Suite 402 510 Shatto Place Los Angeles, CA 90020
SAE	Society of Automotive Engineers 2 Pennsylvania Street New York, NY 10001

Abbreviation	Company
SAMA	Scientific Apparatus Makers Association One Thomas Circle Washington, DC 20005
SBCC	Southern Building Code Congress 1116 Brown-Marx Building Birmingham, AL 35203
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc. 8224 Old Courthouse Road Tysons Corner Vienna, VA 22180
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034
TEMA	Tubular Exchanger Manufacturer's Association 331 Madison Avenue New York, NY 10017
UBC	Uniform Building Code Published by ICBO
UL	Underwriters Laboratories Inc. 207 East Ohio Street Chicago, IL 60611
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center Denver Federal Center, Building 67 Denver, CO 80225
WWPA	Western Wood Products Association (Formerly called: West Coast Lumberman's Association - WCLA) Yeon Building Portland, CA 97204

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

A. Schedule of Work – Critical Path Method (CPM): Submit Schedule of Work – CPM.

B. Shop drawings shall be required for:

1. Division 2 – Selective Demolition

2. Division 6 – Finish Carpentry

3. Division 8 – Steel Door Frames, Wood Doors, Finish Hardware

4. Division 9 – Carpet, Resilient Tile Floor

5. Division 12 – Systems Furniture

6. Any others as called for in the plans, specifications or by the Engineer.

C. Other required submittals shall include:

1. Samples, Product Data, and MSDS documents.

2. Manufacturer's Data.

3. Certificates of Warranty.

4. Any others as called for in the plans, specifications, or by the Engineer.

1.2 SCHEDULE OF WORK – CRITICAL PATH METHOD (CPM)

A. The Contractor shall submit Schedule of Work within 2 weeks from the effective date noted in the "Notice to Proceed" letter, identifying first workday of each week. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show submittal dates required for shop drawings, product data, samples and product delivery dates.

B. The Schedule of Work shall follow the Critical Path Method (CPM). The project shall not commence until the CPM schedule is submitted and approved. No claims for extensions shall be granted if the CPM schedule is not submitted in accordance with this Section.

1. The Construction Schedule shall address the entire project, to the extent required by

the Contract Documents, and shall show an expedient and practical execution of work. If requested by the Engineer, the Contractor shall participate in a preliminary meeting to discuss the proposed schedule and requirements prior to submitting the schedule.

2. The Construction Schedule shall indicate the following:

   a. Elements of the project in detail time scaled by month or by week, and the project summary.

   b. The order and interdependence of activities and the sequence in which the work is to be accomplished.

   c. How the start of a given activity is dependent upon the completion of preceding activities and how its completion restricts the start of following activities.

   d. The submittal and approval of shop drawings, samples, procurement of critical materials and equipment, receipt of materials with estimated costs of major items for which payment will be requested in advance of installation, fabrication of special materials and equipment, and their installation and testing.

   e. Activities of the State that have an effect on the progress schedule, such as the required delivery dates for State furnished materials and equipment and other similar items.

   f. The description of the activity and the duration of time in calendar days.

   g. For each activity indicate the start, finish, and total time.

   h. The party responsible for the accomplishment of the activity. At a minimum, indicated responsibility for each listed subcontractor and major vendor.

   i. Contract-required dates for completion of all parts of the Work.

   j. Non-work days such as holidays, or exclusionary non-work days.

3. Upon completion of the Engineer's review, the Contractor shall mend the schedule to reflect the comments. If necessary, the Contractor shall participate in a meeting with the Engineer to discuss the proposed schedule and changes required. Submit the revised schedule for review within 7 calendar days after receipt of the comments.

4. Use the reviewed schedule for planning, organizing and directing the work, for reporting progress, and for requesting payment for work completed. Unless providing an update, do not make changes to the reviewed schedule without the Engineer's approval.

1.3 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS:

A. The Contractor is responsible for the coordination of all contractual work and submittals.

B. The Contractor shall have a rubber stamp made up in the following format:

CONTRACTOR NAME

PROJECT: _____

_____

JOB NO: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED _____
SPECIFICATION SECTION _____
SPECIFICATION PARAGRAPH _____
DRAWING NUMBER_____
SUBCONTRACTOR NAME _____
SUPPLIER NAME _____
MANUFACTURER NAME _____

CERTIFIED BY: _____

C. This stamp, "filled in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8-1/2" x 11" format, or on one face of a cardstock tag (min. 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, it can be matched up again. The back of this tag will be used by the Engineer for his receipt, review, and log stamp and for any comments that relate to the sample.

D. All submittals for material, equipment, and shop drawings listed in the contract documents, including dimensioned plumbing shop drawings, shall be required and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.

E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review eight copies of all shop drawings, piping layout, and/or catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment) required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings.

F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.

G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.

H. When the shop drawings have been reviewed by the Engineer, two sets of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit eight copies of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.

I. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.

J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description: This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION: Mobilization shall consist of the transporting, assembling, constructing, installing, and making ready for use at the job site, all the equipment, machinery, structures, utilities, materials, labor, and incidentals necessary to do the work covered by this contract.

1.3 DEMOBILIZATION: Demobilization shall consist of the dismantling and removal of the above-mentioned equipment, machinery, structures, utilities, materials, and incidentals, and the cleaning up of the site.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GUIDELINES: If the Contractor utilizes private lands other than the sites provided by the Department for mobilization purposes, the provisions of this section shall apply, and the mobilization and demobilization work on said private lands shall be in accordance with the agreement between the Contractor and the land owner.

Any and all additional mobilization or demobilization costs in excess of the maximum amounts specified in the Proposal shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not receive any compensation for mobilization and demobilization in addition to those specified in the Proposal.

All equipment, machinery, buildings, utilities and incidentals mobilized and demobilized under this section shall remain the property of the Contractor.

END OF SECTION

SECTION 01530

BARRICADES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description. This work shall consist of furnishing, installing and maintaining barricades in accordance with the requirements of the contract.

Barricade application shall be provided for in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and as amended.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber: Lumber for rails, frames and braces shall be dry, sound, undamaged, well seasoned, and free from any defect which may impair their strength and durability.

B. Hardware: Nails shall be galvanized wire nails. As many and as large a size as is practicable shall be used.

C. Paints: Paints shall be exterior enamel paint of the best grade or first line as made by approved manufacturers.

D. Sheet Reflecting Material: Sheet reflecting material shall conform to the applicable requirements of Subsection 712.20(C) of the "Standard Specifications for Road and Bridge Construction".

E. Alternate Designs: Alternate barricade designs such as plastic molded barricades may be used subject to the Engineer's approval. The Contractor shall submit shop drawings or catalog cuts for approval.

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. General: Barricades shall be constructed in a first class, workmanlike manner in accordance with details shown on the plans and as specified herein.
Barricades shall be in good condition and approved by the Engineer for use within the project limits. Barricade application and installation shall be as shown on the and as directed plans by the Engineer in accordance with the guidelines provided in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets

and Highways (MUTCD), and any amendments or revisions thereof as may be made from time to time.

Sand bags or other approved weights shall be provided where required or as directed by the Engineer. Sand bags or other approved weights shall not be placed on any striped barricade rail.

Steady burn and/or flashing lamps shall be required on selected barricades used during hours of darkness. Locations shall be as shown on the plans and as directed by the Engineer. Lamps shall be attached on the barricade ends closest to the traveled way and shall be visible to the motorist.

Barricades furnished and paid for as provided for as provided herein may be used for temporary detours, construction phasing, or other temporary traffic control work.

Barricades furnished and paid for use in temporary detours or construction phasing may be used for permanent location called for on the plans.

Upon completion of the construction work, barricades shall be left in place, relocated, or removed and disposed of as shown on the plans or as directed by the Engineer. Barricades left in place, or relocated to new permanent locations shall become the property of the State. Barricades directed to be removed and disposed of shall become the property of the Contractor.

B. Painting: Wooden rails, frames and braces shall be given a prime coat and 2 finish coats of new white exterior enamel paint. Rail faces to be reflectorized may be left unpainted unless otherwise specified or directed.

C. Reflectorization: Reflectorization of barricade rails shall be done in a first class, workmanlike manner and the attachment of reflective sheeting shall be as shown on the plans, specified herein, or as directed and approved by the Engineer.

Both vertical faces of each barricade rail shall be reflectorized as shown on the plans.

Wooden rails shall be reflectorized with one of the following:

1. Reflective sheeting specified in Subsection 712.20(C)(4) of the "Standard Specifications for Road and Bridge Construction" and backed with a 26 gage galvanized steel sheet, or

2. a hardened aluminum backed reflective sheeting as specified in Subsection 712.20(C)(5) of the "Standard Specifications for Road and Bridge Construction."

D. Color: Rails, frames and braces shall be white.

The front and back faces of barricade rails shall have 6-inch wide alternative colored and white striped sloping downward toward the traveled way at an angle of 45 degrees with the

vertical. The colored stripes shall be either orange or red in accordance with the following requirements:

1. Orange and white stripes shall be used in the following conditions:

    a. Construction work.

    b Detours.

    c. Maintenance work.

2. Red and white stripes shall be used in the following conditions:

    a. On roadways with no outlet (ie. dead-ends, cul-de-sacs).

    b. Ramps or lanes closed for operational purposes.

    c Permanent or semipermanent closure or termination of a roadway.

E. Maintenance: Barricades shall be kept in good condition throughout their usage during construction until the end of the contract.

F. The Contractor shall repair, repaint, clean or replace the barricades as required and as directed by the Engineer to maintain their effectiveness and appearance.

The Constructor shall immediately replace all lost, stolen or damaged barricades, lamps, sand bags and other approved weights.

Barricades used during construction phasing, temporary detours or other temporary traffic control work shall be cleaned and repaired as necessary, prior to being relocated to a permanent location shown on the plans or as directed.

No extra payment will be made for any repair work, repainting, or cleaning of barricades. The Engineer shall determine the suitable condition of each barricade and shall determine when each barricade shall be repaired, repainted or cleaned.

END OF SECTION

SECTION 01567

POLLUTION CONTROL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.

2. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.

3. All unusable debris and waste material shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to allay dust.

4. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is permissible.

5. Enclosed chutes and/or containers shall be used for conveying debris from above to ground floor level.

6. Clean-up shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of clean-up shall coincide with rubbish producing events.

B. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60 - Air Pollution Control.

2. The method of dust control and costs shall be the responsibility of the Contractor. Methods of dust control shall include the use of water, chemicals or asphalt over surfaces which may create airborne dust.

3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 - "Responsibility for Damage Claims" of the GENERAL CONDITIONS.

C. Noise

1. Noise shall be kept within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 - Community Noise Control for Oahu. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.

2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.

3. Pile driving operations shall be confined to the period between 9:00 a.m. and 5:30 p.m., Monday through Friday. Pile driving will not be permitted on weekends and legal State and Federal holidays.

4. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

D. Erosion

1. During interim grading operations, the grade shall be maintained so as to preclude any damage to adjoining property from water and eroding soil.

2. Temporary berms, cut-off ditches and other provisions which may be required because of the Contractor's method of operations shall be installed at no cost to the State.

3. Drainage outlets and silting basing shall be constructed and maintained as shown on the plans to minimize erosion and pollution of waterways during construction.

E. Others

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.

2. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.

3. No dumping of waste concrete will be permitted at the job-site.

4. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job-site.

5. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.

6. When spray painting is allowed such spray painting shall be done by the "airless spray" process. Other types of spray painting will not be allowed.

F. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.

2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.

3. The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done by force account as described in Subsection 4.2b -"Additional Work" of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b - "Force - Account Work" therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 - "Contract Time" of the GENERAL CONDITIONS.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01715

EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS MATERIAL SURVEY

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

Accomplish all demolition and removal indicated on or required by the drawings, and as specified herein.

1.3 GENERAL REQUIREMENTS

A. This section includes the results of the State's surveys for Asbestos Containing Materials, Lead-Containing Paint, and other hazardous materials; and is provided for the Contractor's information.

B. Related Sections include the following:
   1. SECTION 13281 - ASBESTOS ABATEMENT
   2. SECTION 13288 - TESTING AND AIR MONITORING

1.4 ASBESTOS

A. The structure or structures to be renovated or modified under this contract were surveyed for the presence of asbestos containing material (ACM), using NESHAP requirements. ACM was identified in the areas to be renovated or modified. A copy of the initial survey report, as well as any subsequent supplemental survey report(s) if performed, is included in this Section.
   1. The report(s) are included for the Contractor's information. Review the attached report(s) for other materials to be disturbed. The Contractor may perform further surveys at its own expense, if ACBM not shown in the report(s) is suspected in the areas of the building(s) in which work will be performed. If ACBM is found, notify the Engineer immediately. The Engineer will reimburse the Contractor for the testing cost if ACBM is found.
   2. If there is ACBM outside of the area 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 State of Hawaii: Occupational Safety and Health Administration 29 CFR 1926.1101, Asbestos.

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 Engineer assuming they are available. Based on the information contained in the additional survey(s), notify affected personnel per paragraph 1.02 B. If not available, Engineer and/or DAGS Project Coordinator must decide to perform additional hazardous materials survey as soon as practicable.

1.5 LEAD PAINT

A. Inform employees, Subcontractors and all other persons engaged in the project that lead paints are 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 lead paint 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.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SURVEY (Attached)

A. Limited Hazardous Materials Survey, Kalanimoku Building, Information Technology Services Office, 1151 Punchbowl Street, Room 231, Honolulu, Hawaii 96813, 56 pages, dated April 2024 prepared by Environmental Risk Analysis LLC.

END OF SECTION

HAZARDOUS MATERIALS SURVEY
Kalanimoku Building
Department of Land and Natural Resources Personal Office
1151 Punchbowl Street, Room 231
Honolulu, Hawaii 96813

Submitted to:
OMIZU ARCHITECTURE INC
1023 Pensacola Street, Unit H
Honolulu, Hawaii 96814

Submitted by:
ENVIRONMENTAL RISK ANALYSIS LLC
905A Makahiki Way
Honolulu, Hawai'i 96826

April 2024

EXECUTIVE SUMMARY

Environmental Risk Analysis, LLC (ERA) was retained by Omizu Architecture Inc. to conduct a hazardous materials assessment for the proposed renovation project located at the Personnel Office of Department of Land and Natural Resources (DLNR) Room 231 in Honolulu, Hawaii. This survey was performed in accordance with federal, state, and local regulatory requirements and evaluated suspect asbestos and lead. Summary findings of the site investigation are detailed below. Samples were collected of materials which are anticipated to be disturbed during future renovation work. Photographic documentation (Appendix A), sample locations (Appendix B), inspector certification (Appendix C) and laboratory analytical results (Appendix D) and tables of sample results are provided at the end of this document.

ASBESTOS-CONTAINING MATERIALS

According to United States Occupational Safety and Health Administration (OSHA) regulations 1926.1101, prior to the start of renovation or construction work, a building owner must identify the presence, location, and quantity of asbestos-containing materials (ACM) and/or presumed ACM (PACM) in the work. area. This information must be communicated to contractors bidding on work, contractors performing other work, and employees and tenants in or adjacent to the work area.

Samples were submitted to Hawaii Analytical Laboratory, LLC (HAL) for asbestos analysis by polarized light microscopy (PLM) analysis procedures outlined in the United States Protection Agency's (USEPA's) "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (EPA-600/M4-82-020) and/or "Method for Determination of Asbestos in Bulk Building Materials (EPA-600/R-93-116). ACM at the Site consisted of the following:

June 30, 2023

- **C1 - Beige Vinyl Floor Tile: 4% ASBESTOS**
- **C1 - Black Mastic: 8% ASBESTOS**
- **C2 - Beige Vinyl Floor Tile: 2% ASBESTOS**
- **C2 - Black Mastic: 6% ASBESTOS**
- **C3 - Beige Vinyl Floor Tile: 2% ASBESTOS**
- **C3 - Black Mastic: 6% ASBESTOS**

March 20, 2024

- **E1 - Beige Floor Tile: <1% ASBESTOS**
- **E1 – Black Mastic: 3% ASBESTOS**
- **E2 – Yellow Mastic with Black Mastic (Trace): <1% ASBESTOS**
- **E3 – Beige Floor Tile: <1% ASBESTOS**
- **E3 – Black Mastic: 3% ASBESTOS**

Table 1 provides the results of the samples. Laboratory analytical data reports are provided in Appendix D. Should additional suspect ACM be encountered during renovation activities, these materials should be handled as asbestos containing materials, until they can be adequately characterized for asbestos content.

LEAD–CONTAINING PAINTS

The OSHA considers any detectable concentration of lead to be a potential hazard during construction activities. Samples were submitted to Hawaii Analytical Laboratory, LLC for total lead (Pb) analysis by National Institute for Occupational Safety and Health (NIOSH) Method 7082m. Building materials identified as Lead-Containing Paint (LCP) include:

- **LD3 – White Metal Paint: 84 mg/kg**

Table 2 provides the results of the samples. Laboratory analytical data reports are provided in Appendix D.

If other painted areas not previously sampled are disturbed, they should be considered lead containing until confirmation samples are collected. Appropriate health and safety precautions should be taken when working with these materials. The general contractor performing the renovation and demolition work should be informed of the presence of lead in the project area. All personnel impacting lead-containing paint (or other lead-containing materials) should be provided additional training concerning the health effects of lead, proper work methods, appropriate use of personnel protective equipment, and regulations governing lead exposures. Air monitoring to assess lead exposures should be performed for all personnel involved in the renovation process where lead-containing paint may be removed.

RECOMMENDATIONS

ACM and LCP materials were observed in this assessment. These materials are subject to regulatory control. The presence and location of ACM and LCP must be communicated to contractors bidding on work, contractors performing other work, and employees and tenants in or adjacent to the work area. A licensed asbestos abatement contractor must be contracted for the removal of asbestos-containing and asbestos-contaminated building materials prior to the renovation of the structures by certified asbestos workers to comply with OSHA Regulations 29CFR1910.1001 and 29CFR1926.1101 and Hawaii Occupational Safety and Health Division.

For LCP identified, the general contractor performing the renovation and demolition work should be informed of the presence of lead in the project area. All personnel impacting lead-containing paint (or other lead-containing materials) should be provided additional training concerning the health effects of lead, proper work methods, appropriate use of personnel protective equipment and regulations governing lead exposures. Air monitoring to assess lead exposures should be performed for all personnel involved in the renovation process where lead-containing paint may be removed.

Safe work practices are also recommended for all other materials including:

- Respiratory protection;
- Protective clothing;
- Clean change areas; and
- Clean hand-washing facilities

Should additional suspect ACM or LCP be encountered during renovation activities, these materials should be handled as asbestos or lead containing materials, until they can be adequately characterized for asbestos or lead content.

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1.0 INTRODUCTION

Environmental Risk Analysis, LLC (ERA) was retained by Omizu Architecture Inc. to conduct a hazardous materials assessment for the proposed renovation project located at the Personnel Office of Department of Land and Natural Resources (DLNR) Room 231 in Honolulu, Hawaii. This survey was performed in accordance with federal, state, and local regulatory requirements and evaluated suspect asbestos and lead. Summary findings of the site investigation are detailed below. The hazardous material survey was performed on June 23, 2023, June 30, 2023, and March 20, 2024. Photographic documentation of the sampling events is provided in Appendix A.

The purpose of the survey was to provide information to assist with planning documents for the proposed renovation project planned at the Site. This survey was performed in accordance with federal, state, and local regulatory requirements and was limited to the collection of bulk asbestos, lead paint chip, as necessary, to identify regulated building materials that may be potentially impacted by future work.

The remainder of this report documents the findings of the hazardous materials assessment and provides tables summarizing materials sampled, analytical data, comments, and recommendations for handling of hazardous materials identified.

2.0 WARRANTY (LIMITATIONS OF THE ASSESSMENT)

Building materials sampled were collected from areas that were easily accessible. Additional suspect building materials may be encountered during the renovation process. These materials should be analyzed prior to any disturbance from work activities. Every effort was made to collect all building materials. However, ERA does not guarantee the survey covers 100% of all building materials at the Site.

Conclusions contained within the report are professional opinions based solely upon visual observations at the Site and interpretations of analyses. The opinions presented herein apply to the conditions of the Site at the time of the investigation, and interpretation of current regulations. Therefore, opinions and recommendations provided may not apply to future conditions that may exist at the Site. Current regulations should always be verified prior to any work involving hazardous materials.

3.0 METHODOLOGY

This section describes the sampling methodology used.

3.1 Asbestos Survey Methodology

A visual 'walk-through' inspection of accessible areas was conducted to identify areas which will be demolished or renovated. Suspect asbestos-containing materials (ACM) were identified that will be impacted by the proposed renovation at the Site. All suspect ACM was sampled for the presence or absence of asbestos (Appendix B). The asbestos survey was performed by a State of Hawai'i certified AHERA Building Inspector (Appendix C) in accordance with federal and state regulations.

3.1.1 Sampling

Suspect ACM were grouped into homogeneous sampling areas and categorized as thermal systems insulation (TSI), surfacing material, or miscellaneous material. The sampling plan included, at a minimum, the collection and analysis of samples as follows:

Thermal System Insulation

- In a distributive manner as deemed sufficient by the Inspector, a minimum of three (3) samples of each HSA that was suspected to contain asbestos.
- At least one bulk sample from each homogenous area of patched TSI if the patch was less than 6 square feet.

Surfacing Material

- In a distributive manner as deemed sufficient by the Inspector, a minimum of three (3) samples were collected from each homogenous area that was suspected to contain asbestos.

Miscellaneous Material

- In a distributive manner as deemed sufficient by the Inspector, at least three (3) samples were collected of each miscellaneous material suspected to contain asbestos.

Non-Suspect Materials

- According to 40 CFR 763-86(4), sampling of the following materials are not required where the accredited inspector has deemed the material to be fiberglass, foam glass, or other recognized non-ACM.

3.1.2 Sample Documentation

Suspect ACM samples were collected by carefully removing small portions of the suspect material with a sharp knife or other hand tool suitable for the material being sampled. Each sample was placed in a labeled plastic container immediately after collection. Sample containers were then placed in a large re-sealable plastic bag for transportation to the laboratory. The sampling instrument was wiped with a clean moist cloth to decontaminate the tool and minimize the potential release of asbestos fibers or contamination of subsequent samples.

To identify each sample collected, a unique identification numbering system was employed. Data pertinent to each sample (e.g., date, sample number, material description, and material category) was recorded on a field data sheet.

3.1.3 Laboratory Analysis

Asbestos bulk samples, copies of the field data sheet, and chain-of-custody submittal sheets were delivered to Hawaii Analytical Laboratory, LLC (hereafter referred to as HAL) in Honolulu, Hawaii for asbestos analysis. HAL participates in the National Voluntary Laboratory Accreditation Program (NVLAP) for quality control procedures. As specified in 40 CFR Chapter I (1-1-87 edition) Part 763, Subpart F, each sample was analyzed using Polarized Light Microscopy (PLM) with dispersion staining techniques, in accordance with EPA Method 600/R-93/116. The detection limit for this type of analysis is approximately one percent (by volume). Materials containing more than one percent asbestos are considered to be ACM. Laboratory analytical data reports are provided in Appendix D.

3.2 Lead Survey Methodology

A 'walk-through' inspection of accessible areas was conducted to identify suspect lead-containing paint (LCP).

3.2.1 Sampling

Suspect LCP was grouped into homogeneous sampling areas. The sampling plan included, at a minimum, the collection and analysis of one (1) paint chip sample from each homogeneous sampling area (Appendix B).

3.2.2 Sample Documentation

Suspect lead-containing paint samples were collected by carefully removing small portions of paint with a sharp knife or other hand tool suitable for the material being sampled. Each sample was placed in a labeled plastic container immediately after collection. Sample containers were then placed in a large re-sealable plastic bag for transportation to the laboratory. The sampling instrument was wiped with a clean moist cloth to decontaminate the tool and minimize contamination of subsequent samples. For lead paint chip samples collected during the survey, a unique identification numbering system was employed. Data pertinent to each sample (i.e.., date, sample number, material description, and material category) was recorded on a field data sheet.

3.2.3 Laboratory Analysis

Paint chip samples were analyzed by EPA Method 7082 for percent of lead by weight by HAL. HAL participates in the National Environmental Laboratory Accreditation Program (NELAP) and American Industrial Hygiene Association (AIHA) for quality control procedures. Laboratory analytical data reports are provided in Appendix D.

4.0 FINDINGS

The following describes the findings of the survey:

4.1 Asbestos-Containing Materials

A total of twenty-seven (27) bulk asbestos samples were collected and analyzed as part of the survey. Suspect asbestos-containing materials sampled were comprised of a variety of building materials. Six (6) of the sampled materials were identified as regulated ACM (greater than 1% asbestos). A summary of the asbestos sampling and results are presented in Table 1 at the end of the report. The table includes the unique sample number, building location, material description and analytical results. Locations of where the samples were collected are depicted in Figures 1 through 3 in Appendix B. Laboratory reports and chain of custody are presented in Appendix D.

4.2 Lead-Containing Paints

Five (5) paint chip samples were collected as part of this survey. One (1) of the materials were identified with detectable concentrations of lead. Table 2 summarizes the locations of the lead paint chip sampling, color of paint, sample location and the corresponding results. Sample locations are depicted in Figures 1 through 3 in Appendix B. Laboratory reports and chain of custody are presented in Appendix D.

5.0 SUMMARY/CONCLUSIONS

ACM was observed in this assessment (Table 1). The presence and location of ACM must be communicated to contractors bidding on work, contractors performing other work, and employees and tenants in or adjacent to the work area. Any materials not tested that may contain asbestos should be considered asbestos containing, until they can be adequately characterized for asbestos content. A licensed asbestos-abatement contractor must be contracted for the removal of asbestos-containing and asbestos-contaminated building materials prior to renovation of the structures by certified asbestos workers to comply with OSHA Regulations 29CFR1910.1001 and 29CFR1926.1101 and Hawaii Occupational Safety and Health Division. Any materials not tested may contain asbestos should be considered asbestos-containing, until they can be adequately characterized for asbestos content.

Lead-containing paint was observed in this assessment (Table 2). OSHA considers any detectable concentration of lead to be a potential hazard during construction activities. For work on all building components that have not been tested, they must be considered containing lead. The general contractor performing the renovation and demolition work should be informed of the presence of lead in the project area. All personnel impacting lead-containing paint (or other lead-containing materials) should be provided additional training concerning the health effects of lead, proper work methods, appropriate use of personal protective equipment and regulations governing lead exposures.

The contractor must assess the hazard to determine if it will result in personnel exposures. Based on the assessment, and previous similar work and exposure monitoring results, the contractor may have to provide any or all of the following for employees per OSHA 1926.62 and applicable HIOSH regulations:

- Respiratory protection;
- Protective clothing;
- Clean change areas;
- Clean hand-washing facilities;
- Biological monitoring to consist of blood sampling and analysis for lead and zinc protoporphyrin levels; and
- Hazard Communication Training.

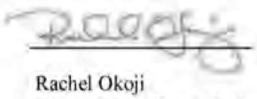
Air monitoring to assess lead exposures should be performed for all personnel involved in the renovation process where lead-containing paint may be removed. Initial employee exposure monitoring must be conducted for each separate task involving the handling of lead-containing painted building materials. If 8-hour time-weighted average (TWA) exposures exceed the action level of 30 micrograms of lead per cubic meter of air (ug/m^3) the contractor must continue to conduct periodic air monitoring at specified intervals, and institute medical surveillance and comprehensive training programs. If the HIOSH/OSHA 8-hour TWA permissible exposure limit of 50 ug/m^3 for lead is exceeded, more stringent and additional requirements become effective, such as engineering controls, respiratory protection, regulated work areas and warning signs in lead work areas.

Safe work practices are also recommended for all other materials including:

- Respiratory protection;

- Protective clothing;
- Clean change areas; and
- Clean hand-washing facilities

Report prepared by:



Rachel Okoji
State of Hawaii Certified
Lead Risk Assessor
PB-0014, Expiration: 04/20/2024

and

Christopher Corpus
State of Hawaii Certified
Asbestos Building Inspector and Project Monitor
HIASB-5190, Expiration: 03/6/2025

TABLES

TABLE 1
SUMMARY OF ASBESTOS SAMPLES

June 2023 Homogeneous Area	Sample ID	Layer	Type	Percent
A	A1	Brown Mastic	NONE	
	A1	Cream Mastic	NONE	
	A1	Gray Covebase	NONE	
	A2	Brown Mastic	NONE	
	A2	Cream Mastic	NONE	
	A2	Gray Covebase	NONE	
	A3	Brown Mastic	NONE	
	A3	Cream Mastic	NONE	
	A3	Gray Covebase	NONE	
B	B1	Blue Carpet	NONE	
	B1	Yellow Mastic	NONE	
	B2	Blue Carpet	NONE	
	B2	Yellow Mastic	NONE	
	B3	Blue Carpet	NONE	
	B3	Yellow Mastic	NONE	
C	**C1**	**Beige Vinyl Floor Tile**	**Chrysotile**	**4%**
	C1	**Black Mastic**	**Chrysotile**	**8%**
	C1	Yellow Mastic	NONE	
	C2	**Beige Vinyl Floor Tile**	**Chrysotile**	**4%**
	C2	**Black Mastic**	**Chrysotile**	**6%**
	C2	Gray Vinyl Floor Tile-like Material	NONE	
	C2	Yellow Mastic	NONE	
	C3	**Beige Vinyl Floor Tile**	**Chrysotile**	**2%**
	C3	**Black Mastic**	**Chrysotile**	**6%**
	C3	Gray Vinyl Floor Tile-like Material	NONE	
	C3	Yellow Mastic	NONE	
March 2024 Homogeneous Area	**Sample ID**	**Layer**	**Type**	**Percent**
A	A1	White Joint Compound with Paint	NONE	
	A1	Beige Tape	NONE	
	A1	White Joint Compound	NONE	
	A1	Beige Tape	NONE	
	A1	White Joint Compound	NONE	
	A1	White Drywall with Brown Paper	NONE	
	A1	Composite Non-Asbestos Content	NONE	
	A2	White Joint Compound with Paint	NONE	
	A2	Beige Tape	NONE	
	A2	White Joint Compound	NONE	
	A2	Composite Non-Asbestos Content	NONE	
	A3	Off-White Joint Compound with Paint	NONE	
	A3	Beige Tape (Trace)	NONE	
	A3	White Joint Compound with Gray Cementitious Material (Trace) and Paint	NONE	
	A3	Composite Non-Asbestos Content	NONE	
B	B1	White Cementitious Material with Brown Mastic	NONE	
	B1	Gray Cementitious Material	NONE	
	B1	Composite Non-Asbestos Content	NONE	
	B2	White Cementitious Material with Brown Mastic	NONE	
	B2	Gray Cementitious Material	NONE	
	B3	White Compound with Paint	NONE	
	B3	White Cementitious Material	NONE	
	B3	Gray Cementitious Material	NONE	
C	C1	Brown Cove Base	NONE	
	C1	Brown Mastic with White Compound (Trace) and Paint	NONE	
	C1	White Cementitious Material (Trace) with Brown Mastic	NONE	
	C2	Brown Cove Base	NONE	
	C2	White Cementitious Material (Trace) with Brown Mastic	NONE	
	C3	Brown Cove Base	NONE	
	C3	Beige Mastic (Trace)	NONE	
D	D1	Yellow Ceiling Tile with White Surface	NONE	
	D1	Composite Non-Asbestos Content	NONE	
	D2	Yellow Ceiling Tile with White Surface	NONE	
	D2	Composite Non-Asbestos Content	NONE	
	D3	Yellow Ceiling Tile with White Surface	NONE	
	D3	Composite Non-Asbestos Content	NONE	
E	E1	**Beige Floor Tile**	Chrysotile	<1%
	E1	**Black Mastic**	Chrysotile	3%
	E2	Semi-Transparent Adhesive (Trace)	NONE	
	E2	**Tan Floor Tile**	NONE	
	E2	**Yellow Mastic with Black Mastic (Trace)**	Chrysotile	<1%
	E3	Beige Floor Tile	Chrysotile	<1%
	E3	Black Mastic	Chrysotile	3%
F	F1	**White Caulk with White Compound (Trace) and Paint**	NONE	
	F2	**White Caulk with White Compound (Trace) and Paint**	NONE	
	F3	White Caulk with White Compound (Trace) and Paint	NONE	

Notes:

TABLE 2
SUMMARY OF LEAD SAMPLES

Sample ID	Description	Result (mg/kg)	
LD1 (June 23, 2023)	Unit 231 Drywall White Paint	<	40
LD2 (June 23, 2023)	Unit 231 Concrete White Paint	<	40
LD1 (March 20, 2024)	Unit 231 Drywall White Paint	<	40
LD2 (March 20, 2024)	Unit 231 Concrete White Paint	<	40
LD3 (March 20, 2024)	**Unit 231 Metal White Paint**		**84**

Notes:

Bold results indicated a postive detection

Bold and italics results indicate an elevated reporting limit which should be treated as LCP

APPENDIX A

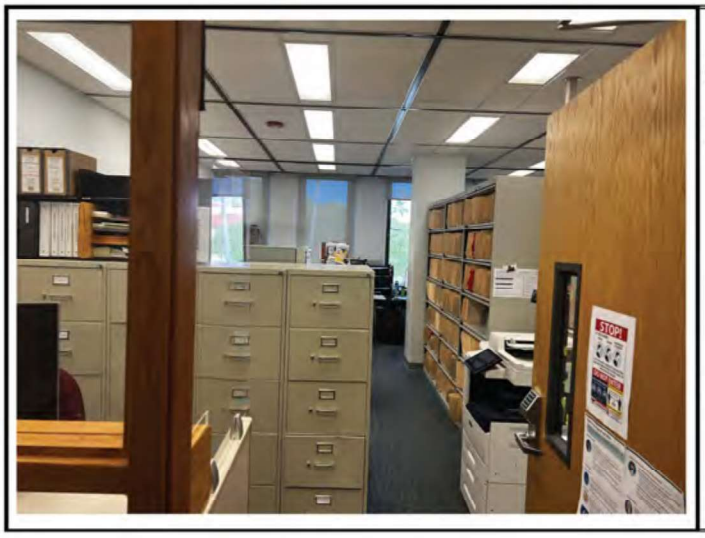
Photographic Documentation

Photograph #1

Description of Photograph:

Survey location: Kalaimoku Building Department of Land & Natural Resources Personnel Office 1151 Punchbowl Street, Room 231

Date:
June 23, 2023



Photograph #2

Description of Photograph:

Overview: Department of Land & Natural Resources Personnel Office

Date:
June 23, 2023

Photograph #3

Description of Photograph:

Sample LD1 – White paint sample from drywall determined not to be lead containing paint.

Date:
June 23, 2023

Photograph #4

Description of Photograph:

Sample LD2 – White paint sample from concrete determined not to be lead containing paint.

Date:
June 23, 2023

Photograph #5

Description of Photograph:

Samples: A1, A2, & 33: Gray covebase, cream mastic, and brown mastic determined not to be ACM.

Date:
June 23, 2023

Photograph #6

Description of Photograph:

Sample B1 – Blue carpet and yellow mastic determined not to be ACM.

Date:
June 23, 2023

Photograph #7

Description of Photograph:

Sample B2 – Blue carpet and yellow mastic determined not to be ACM.

Date:
June 23, 2023

Photograph #8

Description of Photograph:

Sample B3 – Blue carpet and yellow mastic determined not to be ACM.

Date:
June 23, 2023

	**Photograph #9** **Description of Photograph:** Sample C1 – Beige floor tile, black mastic, and yellow mastic **determined to be ACM.** **Date:** June 30, 2023

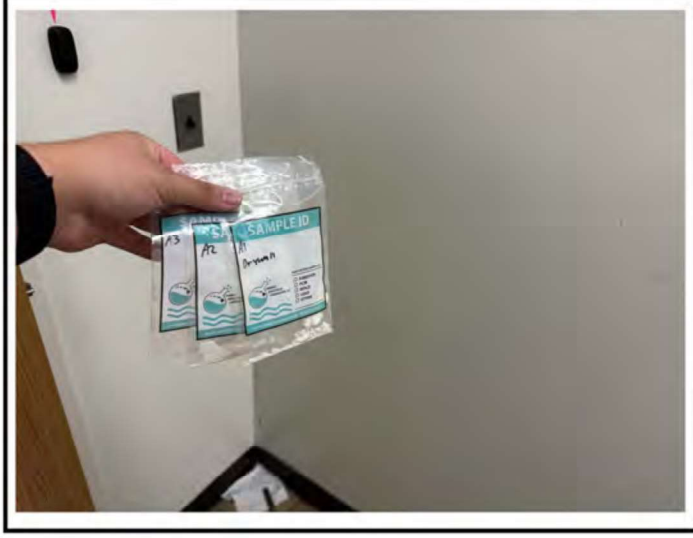
	**Photograph #10** **Description of Photograph:** Sample C2 – Gray vinyl floor tile, beige floor tile, black mastic, and yellow mastic **determined to be ACM.** **Date:** June 30, 2023

Photograph #11

Description of Photograph:

Sample C3 – Gray floor tile, beige floor tile, black mastic, and yellow mastic **determined to be ACM.**

Date:
June 30, 2023

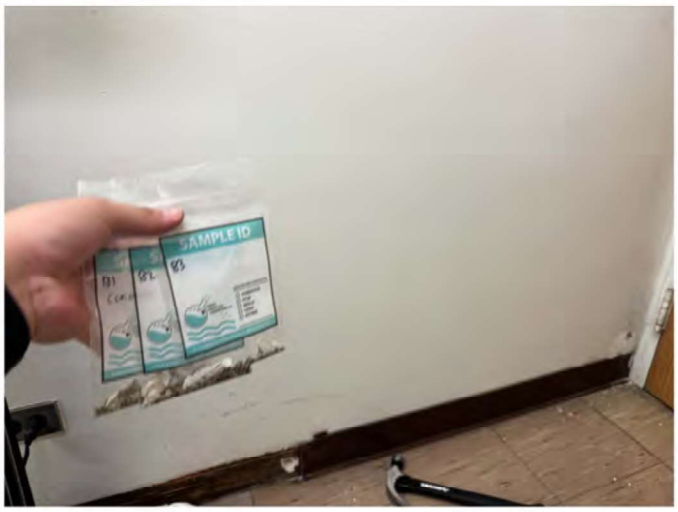
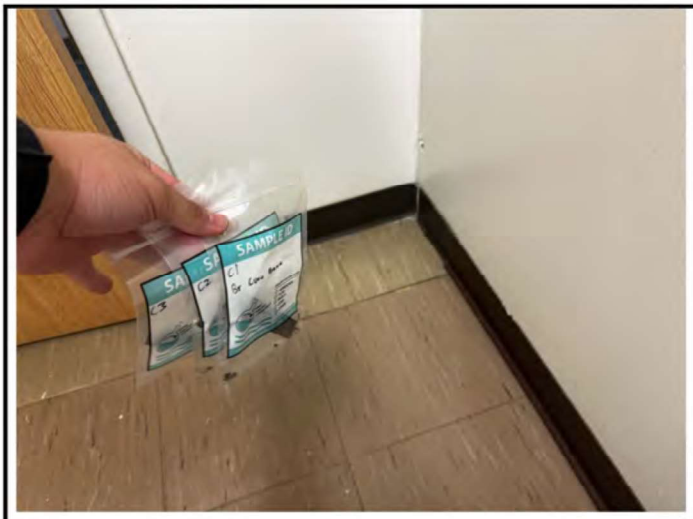


Photograph #12

Description of Photograph:

Samples A1, A2, & A3 – Drywall and joint compound material determined NOT to be ACM.

Date:
March 20, 2024

	**Photograph #13** **Description of Photograph:** Sample B1, B2, & B3 – Concrete samples determined not to be ACM. **Date:** March 20, 2024
	**Photograph #14** **Description of Photograph:** Sample C1, C2, & C3 – Brown cove base and mastic samples determined not to be ACM. **Date:** March 20, 2024

Photograph #15

Description of Photograph:

Sample D1, D2, & D3 – Acoustic ceiling tiles determined not to be ACM.

Date:
March 20, 2024

Photograph #16

Description of Photograph:

Sample E1, E2, & E3 – Beige vinyl floor tile, black mastic, and yellow mastic **determined to be ACM.**

Date:
March 20, 2024

Photograph #17

Description of Photograph:

Sample F1, F2, & F3 – Door caulk samples determined not to be ACM.

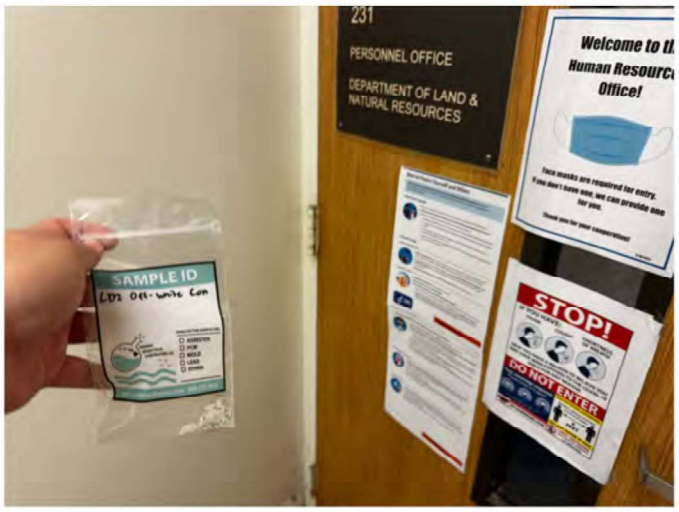
Date:
March 20, 2024

Photograph #18

Description of Photograph:

Sample LD1 – Off-white Paint sample from drywall determined NOT to be lead containing paint.

Date:
March 20, 2024

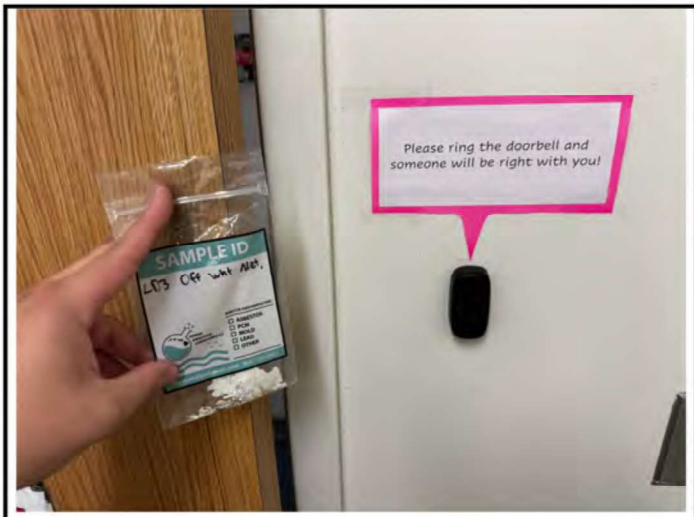


Photograph #19

Description of Photograph:

Sample LD2 – Off-white Paint sample from concrete determined NOT to be lead containing paint.

Date:
March 20, 2024



Photograph #20

Description of Photograph:

Sample LD1 – Off-white Paint sample from metal **determined to be lead containing paint.**

Date:
March 20, 2024

APPENDIX B

Figures

Site Location Map:
Kalaimoku Building
Honolulu, HI 96813

Figure 1

Sample Location:
Kalaimoku Building
Department of Land & Natural Resources
Personnel Office

Figure 2

Sample Location:
Kalaimoku Building
Department of Land & Natural Resources
Personnel Office

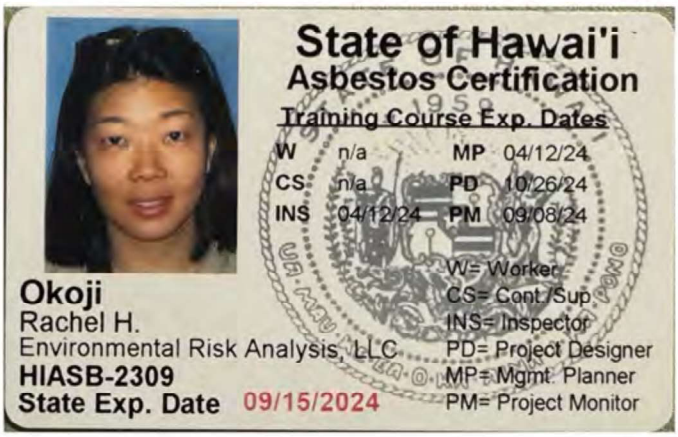
Figure 3

APPENDIX C

Inspector Certifications

State of Hawai'i
Asbestos Certification
Training Course Exp. Dates
W n/a MP n/a
CS n/a PD n/a
INS 03/08/24 PM 10/25/24
W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor
Corpus
Christopher-Bryce
Environmental Risk Analysis, LLC.
HIASB-5190
State Exp. Date 03/16/2025

Asbestos Building Inspector
Christopher Corpus
HIASB-5190



Rachel Okoji
HIASB-2309

Inspector
Management Planner
Project Designer
Project Monitor

Rachel Okoji
PB-0014

Lead Risk Assessor
04/20/2024

Lead Supervisor
08/09/2026

Lead Project Designer
01/09/2027

APPENDIX D

Laboratory Results

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Monday, July 10, 2023

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com; russellokoji@enviroriskhawaii.com

Lab Job No: 202306239
Date Submitted: 6/30/2023
Your Project: 1151 Punchbowl St. #231, 6/30/23

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202345330	C1	Yes	Chrysotile	4	None detected		Vinyl	7/6/2023
Layer	Beige vinyl floor tile							
Comments								
202345330	C1	Yes	Chrysotile	8	None detected		Tar	7/6/2023
Layer	Black mastic							
Comments								
202345330	C1		NONE DETECTED		None detected		Binder	7/6/2023
Layer	Yellow mastic							
Comments								
202345331	C2	Yes	Chrysotile	2	None detected		Vinyl	7/6/2023
Layer	Beige vinyl floor tile							
Comments								
202345331	C2	Yes	Chrysotile	6	None detected		Tar	7/6/2023
Layer	Black mastic							
Comments								
202345331	C2		NONE DETECTED		None detected		Calcite + other	7/6/2023
Layer	Gray vinyl floor tile-like material							
Comments								
202345331	C2		NONE DETECTED		None detected		Binder	7/6/2023
Layer	Yellow mastic							
Comments								

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com;
russellokoji@enviroriskhawaii.com

Lab Job No: 202306239
Date Submitted: 6/30/2023
Your Project: 1151 Punchbowl St. #231, 6/30/23

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202345332	**C3**	**Yes**	Chrysotile	**2**	None detected		Vinyl	7/6/2023
Layer	Beige vinyl floor tile							
Comments								
202345332	**C3**	**Yes**	Chrysotile	**6**	None detected		Tar	7/6/2023
Layer	Black mastic							
Comments								
202345332	**C3**		NONE DETECTED		None detected		Calcite + other	7/6/2023
Layer	Gray vinyl floor tile-like material							
Comments								
202345332	**C3**		NONE DETECTED		None detected		Binder	7/6/2023
Layer	Yellow mastic							
Comments								

General Comments
The bulk sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures outlined in the United States Environmental Protection Agency's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (EPA-600/M4-82-020, Dec. 1982) and / or "Method for Determination of Asbestos in bulk Building Materials" (EPA-600/R-93-116, July 1993). The analysis of each bulk sample relates only to the material examined, and may or may not represent the overall composition of its original source. Floor tile and other resinously bound materials, when analyzed by the EPA methods referenced above may yield false negative results because of limitations in separating closely bound fibers and in detecting fibers of small length and diameter. Alternative methods of identification, including Transmission Electron Microscopy (TEM) may or may not be applicable. We utilize calibrated visual area estimation on a routine basis and do not conduct point counting unless specifically requested to do so. Estimated error for the visual determinations presented are 75% relative (1 to 2%), 50% relative (3 to 5%); 25% relative (6 to 25%) and 20% (>26% v/v). We will not separate layers which in our opinion are not readily discernable. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government. Unless otherwise indicated, the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
None Detected = asbestos was not observed in the sample. If trace amount of asbestos was detected below our quantifiable limits of 1.0%, <1% (trace) would be indicated and the asbestos type listed. Point counting, where applicable, are recommended to improve accuracy.

Jennifer Hsu Liao
Laboratory Manager

Hawaii Analytical Laboratory is a NIST NVLAP accredited laboratory (NVLAP Lab Code 200655-0) and is accredited in accordance with the recognized ISO/ IEC 17025:2017. Controlled doc.: Asbestos Report, rev. 3 – 20200630

HAWAII ANALYTICAL LABORATORY, LLC

3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
www.analyzehawaii.com

☐ New Client?

Report To*	
Company	Environmental Risk Analysis LLC
Address*	905A Makahiki Way Honolulu, HI 96826
Phone / Cell No.*	(808) 292-2278
Report results to	russellokoji@enviroriskhawaii.com
via email or fax	rachelokoji@enviroriskhawaii.com vincentyanagita@enviroriskhawaii.com gabrielle@enviroriskhawaii.com, christopher@enviroriskhawaii.com

Invoice To*	- SAME -
Company	
Address*	
Phone / Cell No.*	
Purchase Order No.	
Email Invoice To	

Need Results By*:
- ☒ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Site/Project Name: 1151 Punchbowl st. #231

Client Project No.:

Sampled By:

Comments / Special Instructions: ☐ verbal results needed?

PLM POSITIVE STOP Instructions:
- ☐ Positive stop per SAMPLE
- ☐ Positive stop per LAYER

LAB USE ONLY
Lab Report No.: 202306239

	Sample Identification / Description* (Maxmium of 30 Characters)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	*Lab ID*
1	C1 Vinyl Floor Tile	06/30/23	Bulk		PLM		202345330
2	C2	"	"		"		202345331
3	C3	"	"		"		202345332
4							
5							
6							
7							
8							
9							
10							
11							
12							

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
Christopher Corpus	06/30/23	Anne Antin	06-30-23 A09:56 RCVD
		Anne Antin	

Sample description can be paint chips, concrete, specific sample collection location, etc
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
***Required fields, failure to complete these fields may result in a delay in your samples being processed.**

☐ via FedEx ☐ via USPS ☐ via .....

Page: _____ of _____

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Monday, June 26, 2023

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com; russellokoji@enviroriskhawaii.com

Lab Job No: 202306013
Date Submitted: 6/23/2023
Project Name: 1151 Punchbowl St. #231, 6/23/23

Total Lead (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202344046	LD1	< 40	mg/kg	6/23/2023
Comments				
202344047	LD2	< 40	mg/kg	6/23/2023
Comments				

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com; russellokoji@enviroriskhawaii.com

Lab Job No: 202306013
Date Submitted: 6/23/2023
Project Name: 1151 Punchbowl St. #231, 6/23/23

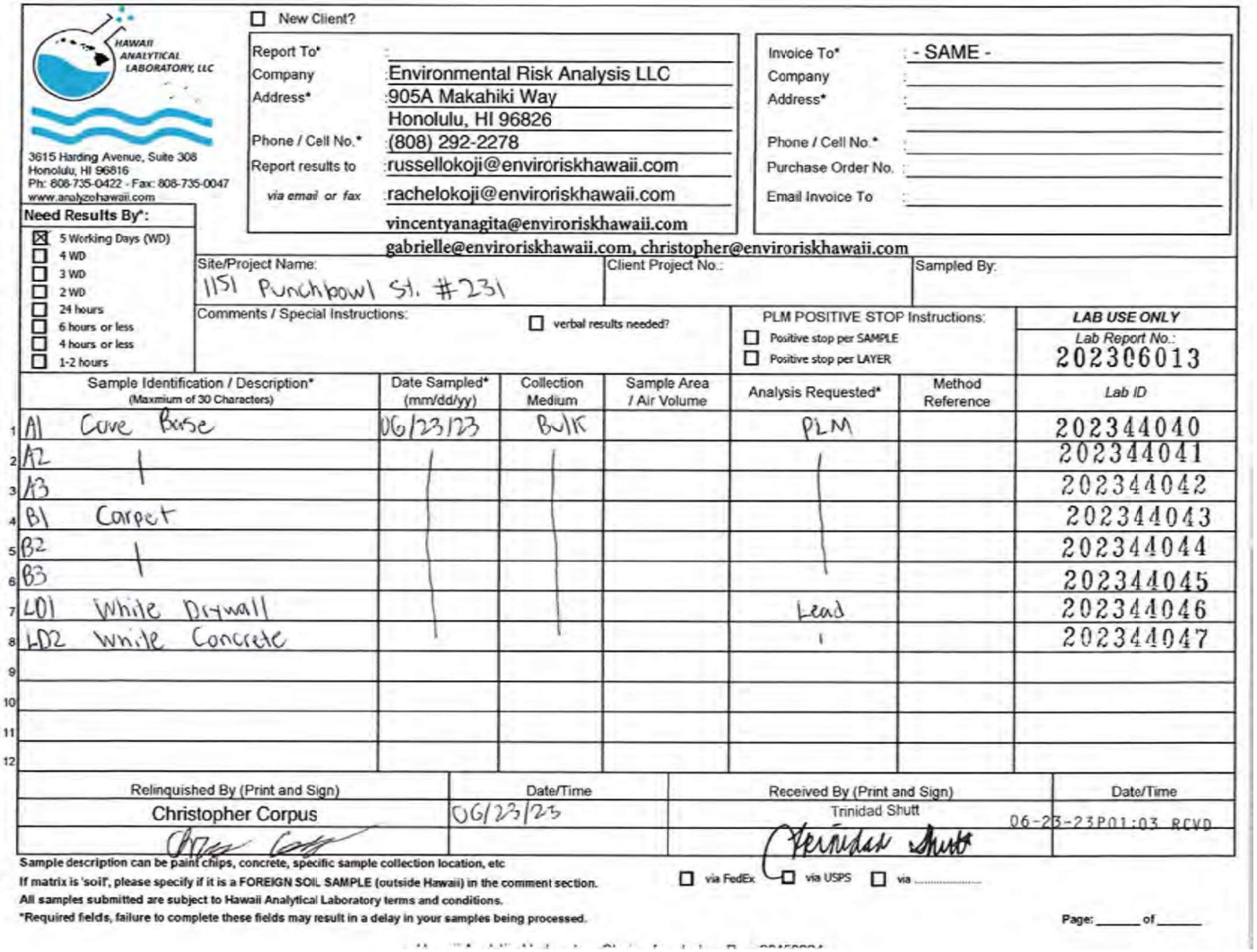
All Quality Control data are acceptable unless otherwise noted.
MRL for lead air is 5ug.
MRL for lead wipe is 10ug.
MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments
The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
# = Analytical methods marked with an "#" are not within our AIHA LAP, LLC Scope of Accreditation.
MRL = Method Reporting Limit.

Anne Antin

Anne Antin
Quality Control Manager



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Report To*	
Company	Environmental Risk Analysis LLC
Address*	905A Makahiki Way Honolulu, HI 96826
Phone / Cell No.*	(808) 292-2278
Report results to	russellokoji@enviroriskhawaii.com
via email or fax	rachelokoji@enviroriskhawaii.com vincentyanagita@enviroriskhawaii.com gabrielle@enviroriskhawaii.com, christopher@enviroriskhawaii.com

Invoice To*	- SAME -
Company	
Address*	
Phone / Cell No.*	
Purchase Order No.	
Email Invoice To	

Need Results By*:
- ☒ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Site/Project Name: 1151 Punchbowl St. #231
Client Project No.:
Sampled By:

Comments / Special Instructions: ☐ verbal results needed?

PLM POSITIVE STOP Instructions:
- ☐ Positive stop per SAMPLE
- ☐ Positive stop per LAYER

LAB USE ONLY
Lab Report No.: 202306013

	Sample Identification / Description* (Maximum of 30 Characters)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	Lab ID
1	A1 Cove Base	06/23/23	Bulk		PLM		202344040
2	A2	"	"		"		202344041
3	A3	"	"		"		202344042
4	B1 Carpet	"	"		"		202344043
5	B2	"	"		"		202344044
6	B3	"	"		"		202344045
7	LD1 White Drywall	"	"		Lead		202344046
8	LD2 White Concrete	"	"		"		202344047
9							
10							
11							
12							

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
Christopher Corpus	06/23/23	Trinidad Shutt	06-23-23P01:03 RCVD

Sample description can be paint chips, concrete, specific sample collection location, etc
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

☐ via FedEx ☐ via USPS ☐ via .....

Page: _____ of _____

Hawaii Analytical Laboratory
3615 Harding Avenue, Suite 308, Honolulu, Hawaii, 96816
Tel: (808) 735-0422 – Fax: (808) 735-0047

March 27, 2024

Environmental Risk Analysis
905 A Makahiki Way
Honolulu, HI 96826

Project Name:	1151 Punchbowl St. #231
Date collected:	3/20/2024
Date received:	3/20/2024
HAL #:	202403149

Dear Mr. Okoji,

Enclosed are the analytical results for the samples received by our laboratory on March 20, 2024. The samples on the chain of custody were received in good condition unless otherwise noted.

The eighteen (18) samples submitted for PLM analysis were subcontracted to Eurofins EMLab P&K in Pomona, CA (a NVLAP accredited Laboratory, NVLAP LAB CODE: 600282-0.). Its report is enclosed in its entirety.

Results in this report are based on the sampling data provided by the client and refer only to the sample as it was received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Quality assurance data is collected to accompany all analyses and to ensure that results generated meet Hawaii Analytical Laboratory's quality standards. This data is available upon request.

Please contact us at 808-735-0422 if you have questions.

Thank you for using Hawaii Analytical Laboratory and have a great day!!

Anne Antin

Anne Antin
Quality Manager
Hawaii Analytical Laboratory
3615 Harding Ave. Ste. 308
Honolulu, HI 96816
Phone: (808) 735-0422
E-mail: aantin@analyzehawaii.com

eurofins | Built Environment Testing

Report for:

Anne Antin
Hawaii Analytical Lab
3615 Harding Ave
Suite 308
Honolulu, HI 96816

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: 202403149; 1151 Punchbowl St. #231
EML ID: 3584101

Approved by:

Approved Signatory
Dr. Ami Modha

Dates of Analysis:
Asbestos PLM: 03-27-2024

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 600282-0

Eurofins EPK Built Environment Testing, LLC
931 Corporate Center Drive, Pomona, CA 91768
(800) 651-4802 www.eurofinsus.com/Built

Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Total Samples Submitted:	18
Total Samples Analyzed:	18
Total Samples with Layer Asbestos Content > 1%:	2

Location: A1 Lab ID-Version‡: 17524745-1

Sample Layers	Asbestos Content
White Joint Compound with Paint	ND
Beige Tape	ND
White Joint Compound	ND
Beige Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: A2 Lab ID-Version‡: 17524746-1

Sample Layers	Asbestos Content
White Joint Compound with Paint	ND
Beige Tape	ND
White Joint Compound	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: A3 Lab ID-Version‡: 17524747-1

Sample Layers	Asbestos Content
Off-White Joint Compound with Paint	ND
Beige Tape (Trace)	ND
White Joint Compound with Gray Cementitious Material (Trace) and Paint	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
931 Corporate Center Drive, Pomona, CA 91768
(800) 651-4802 www.eurofinsus.com/Built

Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Location: B1

Lab ID-Version‡: 17524748.1

Sample Layers	Asbestos Content
White Cementitious Material with Brown Mastic	ND
Gray Cementitious Material	ND
Composite Non-Asbestos Content:	7% Vermiculite < 1% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
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(800) 651-4802 www.eurofinsus.com/Built

Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Location: B2 Lab ID-Version‡: 17524749-1

Sample Layers	Asbestos Content
White Cementitious Material with Brown Mastic	ND
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Location: B3 Lab ID-Version‡: 17524750-1

Sample Layers	Asbestos Content
White Compound with Paint	ND
White Cementitious Material	ND
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Poor

Location: C1 Lab ID-Version‡: 17524751-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Brown Mastic with White Compound (Trace) and Paint	ND
White Cementitious Material (Trace) with Brown Mastic	ND
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Location: C2 Lab ID-Version‡: 17524752-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
White Cementitious Material (Trace) with Brown Mastic	ND
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Eurofins EPK Built Environment Testing, LLC
931 Corporate Center Drive, Pomona, CA 91768
(800) 651-4802 www.eurofinsus.com/Built

Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Location: C3

Lab ID-Version‡: 17524753-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Beige Mastic (Trace)	ND
Sample Composite Homogeneity:	Poor

Location: D1

Lab ID-Version‡: 17524754-1

Sample Layers	Asbestos Content
Yellow Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	85% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: D2

Lab ID-Version‡: 17524755-1

Sample Layers	Asbestos Content
Yellow Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	85% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: D3

Lab ID-Version‡: 17524756-1

Sample Layers	Asbestos Content
Yellow Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	85% Glass Fibers
Sample Composite Homogeneity:	Moderate

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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931 Corporate Center Drive, Pomona, CA 91768
(800) 651-4802 www.eurofinsus.com/Built

Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Location: E1

Lab ID-Version‡: 17524757-1

Sample Layers	Asbestos Content
Beige Floor Tile	< 1% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

Location: E2

Lab ID-Version‡: 17524758-1

Sample Layers	Asbestos Content
Semi-Transparent Adhesive (Trace)	ND
Tan Floor Tile	ND
Yellow Mastic with Black Mastic (Trace)	< 1% Chrysotile
Sample Composite Homogeneity:	Poor

Comments: Some layers in the sample were inseparable without cross contamination.

Location: E3

Lab ID-Version‡: 17524759-1

Sample Layers	Asbestos Content
Beige Floor Tile	< 1% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Poor

Location: F1

Lab ID-Version‡: 17524760-1

Sample Layers	Asbestos Content
White Caulk with White Compound (Trace) and Paint	ND
Sample Composite Homogeneity:	Poor

Comments: Sample layers inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Hawaii Analytical Lab
C/O: Anne Antin
Re: 202403149; 1151 Punchbowl St. #231

Date of Receipt: 03-22-2024
Date of Report: 03-27-2024

ASBESTOS PLM REPORT

Location: F2

Lab ID-Version‡: 17524761-1

Sample Layers	Asbestos Content
White Caulk with White Compound (Trace) and Paint	ND
Sample Composite Homogeneity:	Poor

Comments: Sample layers inseparable without cross contamination.

Location: F3

Lab ID-Version‡: 17524762-1

Sample Layers	Asbestos Content
White Caulk with White Compound (Trace) and Paint	ND
Sample Composite Homogeneity:	Poor

Comments: Sample layers inseparable without cross contamination.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

CHAIN OF CUSTODY eurofins | EMLab P&K

www.EMLabPK.com

Marlton, NJ: 3000 Lincoln Dr E, Ste. A, Marlton, NJ 08053 * **(866) 871-1984**
Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 * **(800) 651-4802**
SSF, CA: 6000 Shoreline Ct, Ste. 205, S. San Francisco, CA 94080 * **(866) 888-6653**

WEATHER	Fog	Rain	Snow	Wind	Clear
LEVEL: None					
Light					
Moderate					
Heavy					

003584101

CONTACT INFORMATION

Company: Hawaii Analytical Laboratory	Address: 3615 Harding Avenue, Suite 308 - Honolulu HI 96816
Contact: Anne Antin	Special Instructions: * Please Analyze samples on 3 day TAT
Phone: 808-735-0422	

PROJECT INFORMATION

Project ID:	202403149		
Project Description:	1151 Punchbowl St. #231		
Project Zip Code:		Sampling Date/Time:	3/20/2024
PO Number:		Sampled By:	ERA

TURN AROUND TIME CODES - (TAT)

STD - Standard (Default)	Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
ND - Next Business Day	
SD - Same Business Day	
WH - Weekend/Holiday/ASAP	

SAMPLE ID	DESCRIPTION	Sample Type (Below)	TAT (Above)	Total Volume/Area (as applicable)	NOTES (Time of day, Temp, RH, etc.)
A1		B	3 days		
A2		B	3 days		
A3		B	3 days		
B1		B	3 days		
B2		B	3 days		
B3		B	3 days		
C1		B	3 days		
C2		B	3 days		
C3		B	3 days		
D1		B	3 days		
D2		B	3 days		
D3		B	3 days		
E1		B	3 days		
E2		B	3 days		
E3		B	3 days		
F1		B	3 days		
F2		B	3 days		
F3		B	3 days		

REQUESTED SERVICES

Non-Culturable (Spore Trap; Tape, Swab, Bulk) — Culturable (BioCassette™, Andersen, Swab, Water, Bulk, Dust, Contact Plate)

SAMPLE ID	Spore Trap Analysis	Other biological particles - supplement	Direct Microscopic Exam (Qualitative)	Quantitative spore count direct exam	Dust Characterization	1-Media Surface Fungi (Genus ID + Asp. spp.)	Culturable Air Fungi (Genus ID + Asp. spp.)	Gram Stain and Counts (Culturable Air and Surface Bacteria)	Legionella culture	Total Coliform, E. coli (Presence/Absence)	QuantiTray-Sewage Screen	OTHER: (please specify test)	Asbestos in Air - PCM Airborne Fiber Count (NIOSH 7400)	Asbestos Bulk - PLM	Lead (Pb) - Flame AA	PCR (please specify test)	Allergens (please specify test)
A1														x			
A2														x			
A3														x			
B1														x			
B2														x			
B3														x			
C1														x			
C2														x			
C3														x			
D1														x			
D2														x			
D3														x			
E1														x			
E2														x			
E3														x			
F1														x			
F2														x			
F3														x			

SAMPLE TYPE CODES

BC - BioCassette™	**CP** - Contact Plate	**T** - Tape	**O** - Other:
A1S - Andersen	**ST** - Spore Trap	**SW** - Swab	
SAS - Surface Air Sampler	**B** - Bulk	**SO** - Soil	
NP - Non-potable Water	**P** - Potable Water	**D** - Dust	

RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
Savannah Newman	3/21/2024	FedEx	
[signature]		Viktoria Grao [signature]	3/22/24 0937

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at http://www.emlab.com/terms-of-service

Doc. # EM-CS-F-1192 , Rev 33, Revised 8/15/19, Page 1 of 1

☐ New Client?

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Address*	:	
Phone / Cell No.*	:	
Report results to	:	
Email / Fax	:	

Invoice To*	:	ERA
Company	:	
Address*	:	
Phone / Cell No.*	:	
Purchase Order No.	:	
Email Invoice To	:	

Need Results By*:

☑ 5 Working Days (WD)
☐ 4 WD
☐ 3 WD
☐ 2 WD
☐ 24 hours
☐ 6 hours or less
☐ 4 hours or less
☐ 1-2 hours

Client Project No.:

Site/Project Name: 1151 Punchbowl St. #231

Special Instructions: Ok to sub

PLM POSITIVE STOP?
☐ + stop / SAMPLE
☐ + stop / LAYER

Verbal results? ☐

Sampled By & Certif. # :

Lab Report No.: 2024031149

	Sample ID	Sample Description*	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	***Lab Sample(s) No.:***
1	A1	Drywall	3/20/2024	Bulk		PLM		
2	A2	Drywall	3/20/2024	Bulk		PLM		
3	A3	Drywall	3/20/2024	Bulk		PLM		
4	B1	Concrete	3/20/2024	Bulk		PLM		
5	B2	Concrete	3/20/2024	Bulk		PLM		
6	B3	Concrete	3/20/2024	Bulk		PLM		
7	C1	Brown Cove Base	3/20/2024	Bulk		PLM		
8	C2	Brown Cove Base	3/20/2024	Bulk		PLM		
9	C3	Brown Cove Base	3/20/2024	Bulk		PLM		
10	D1	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
11	D2	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
12	D3	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
13	E1	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
14	E2	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
15	E3	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
16	F1	Door Caulk	3/20/2024	Bulk		PLM		
17	F2	Door Caulk	3/20/2024	Bulk		PLM		

HAWAII ANALYTICAL LABORATORY, LLC

3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
https://analyzehawaii.com

☐ New Client?

Report To*	ERA	Invoice To*	ERA
Company		Company	
Address*		Address*	
Phone / Cell No.*		Phone / Cell No.*	
Report results to		Purchase Order No.	
Email / Fax		Email Invoice To	

Need Results By*:
- ☑ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Client Project No.:

Site/Project Name: 1151 Punchbowl St. #231

Sampled By & Certif. # :

Special Instructions:

PLM POSITIVE STOP? ☐ + stop / SAMPLE ☐ + stop / LAYER

Verbal results? ☐

Lab Report No.: 202403149

	Sample ID	Sample Description*	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	***Lab Sample(s) No.:***
18	F3	Door Caulk	3/20/2024	Bulk		PLM		
19	LD1	Off-white Drywall Paint	3/20/2024	Bulk		Lead		202422858
20	LD2	Off-white Concrete Paint	3/20/2024	Bulk		Lead		202422859
21	LD3	Off-white Metal Paint	3/20/2024	Bulk		Lead		202422860
22	PCB1	Door Caulk	3/20/2024	Bulk		HOLD		

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
Christopher Corpus	~~3/20/2023~~ 3/20/24	Savannah Newman	03-20-24P02:19 RCVD

*Sample description can be paint chips, concrete, specific sample collection location, etc...
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

Lab Notes: ☐ via HAC ☐ via USPS ☐ via drop box ☐ via FedEx ☐ via pick up

awb#: 173-

Page: _____ of _____

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Wednesday, March 27, 2024

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com; russellokoji@enviroriskhawaii.com

Lab Job No: 202403149
Date Submitted: 3/20/2024
Project Name: 1151 Punchbowl St. #231, 3/20/24

Total Lead (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202422858	LD1	< 40	mg/kg	3/21/2024
Comments				
202422859	LD2	< 40	mg/kg	3/21/2024
Comments				
202422860	LD3	84	mg/kg	3/21/2024
Comments				

Environmental Risk Analysis
905 A Makahiki Way
Honolulu HI 96826

Phone Number: (808)783-6840
Facsimile:
Email: rachelokoji@enviroriskhawaii.com; russellokoji@enviroriskhawaii.com

Lab Job No: 202403149
Date Submitted: 3/20/2024
Project Name: 1151 Punchbowl St. #231, 3/20/24

All Quality Control data are acceptable unless otherwise noted.
MRL for lead air is 5ug.
MRL for lead wipe is 10ug.
MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments
The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
# = Analytical methods marked with an "#" are not within our AIHA LAP, LLC Scope of Accreditation.
MRL = Method Reporting Limit.

Anne Antin

Anne Antin
Quality Control Manager

HAWAII ANALYTICAL LABORATORY, LLC
3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
https://analyzehawaii.com

☐ New Client?

Report To*	: ERA	Invoice To*	: ERA
Company	:	Company	:
Address*	:	Address*	:
Phone / Cell No.*	:	Phone / Cell No.*	:
Report results to	:	Purchase Order No.	:
Email / Fax	:	Email Invoice To	:

Need Results By*:
- ☑ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Client Project No.:

Site/Project Name: 1151 Punchbowl St. #231

Sampled By & Certif. # :

Special Instructions: Ok to sub

PLM POSITIVE STOP?
- ☐ + stop / SAMPLE
- ☐ + stop / LAYER

Verbal results? ☐

Lab Report No.: 202403149

	Sample ID	Sample Description*	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	***Lab Sample(s) No.:***
1	A1	Drywall	3/20/2024	Bulk		PLM		
2	A2	Drywall	3/20/2024	Bulk		PLM		
3	A3	Drywall	3/20/2024	Bulk		PLM		
4	B1	Concrete	3/20/2024	Bulk		PLM		
5	B2	Concrete	3/20/2024	Bulk		PLM		
6	B3	Concrete	3/20/2024	Bulk		PLM		
7	C1	Brown Cove Base	3/20/2024	Bulk		PLM		
8	C2	Brown Cove Base	3/20/2024	Bulk		PLM		
9	C3	Brown Cove Base	3/20/2024	Bulk		PLM		
10	D1	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
11	D2	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
12	D3	Acoustic Ceiling Tile	3/20/2024	Bulk		PLM		
13	E1	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
14	E2	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
15	E3	Vinyl Floor Tile	3/20/2024	Bulk		PLM		
16	F1	Door Caulk	3/20/2024	Bulk		PLM		
17	F2	Door Caulk	3/20/2024	Bulk		PLM		

☐ New Client?

HAWAII ANALYTICAL LABORATORY, LLC

3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
https://analyzehawaii.com

Report To*	:	ERA	
Company	:		
Address*	:		
Phone / Cell No.*	:		
Report results to	:		
Email / Fax	:		

Invoice To*	:	ERA
Company	:	
Address*	:	
Phone / Cell No.*	:	
Purchase Order No.	:	
Email Invoice To	:	

Need Results By*:

- ☑ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Client Project No.:

Site/Project Name: 1151 Punchbowl St. #231

Special Instructions:

PLM POSITIVE STOP?
☐ + stop / SAMPLE
☐ + stop / LAYER

Verbal results? ☐

Sampled By & Certif. # :

Lab Report No.: 2024031149

	Sample ID	Sample Description*	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	***Lab Sample(s) No.:***
18	F3	Door Caulk	3/20/2024	Bulk		PLM		
19	LD1	Off-white Drywall Paint	3/20/2024	Bulk		Lead		2024222858
20	LD2	Off-white Concrete Paint	3/20/2024	Bulk		Lead		2024222859
21	LD3	Off-white Metal Paint	3/20/2024	Bulk		Lead		2024222860
22	PCB1	Door Caulk	3/20/2024	Bulk		HOLD		

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
Christopher Corpus	~~3/20/2023~~ 3/20/24	Savannah Newman	03-20-24 P02:19 RCVD

Lab Notes: ☐ via HAC ☐ via USPS ☐ via drop box ☐ via FedEx ☐ via pick up

awb#: 173-

Page: _____ of _____

*Sample description can be paint chips, concrete, specific sample collection location, etc...
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
*Required fields, failure to complete these fields may result in a delay in your samples being processed.

DIVISION 2 - SITEWORK

SECTION 02070

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

Accomplish all demolition, removal, patching and related work indicated on or required by the drawings, and as specified herein.

1.3 GENERAL REQUIREMENTS

A. The Contractor shall visit the project site, examine the premises and note all existing conditions and the extent involved for the complete and proper execution of all work as called for on the plans and as hereinafter specified.

B. Extent of selective demolition work is indicated on the drawings. Selective Demolition work includes but not limited to, selective demolition, removal, and subsequent disposal of all materials indicated or required to be removed.

C. Execute all work in an orderly and careful manner with due consideration for all items of work to remain.

D. Obvious conditions which exist on the site shall be accepted as part of the work, even though they may not be clearly indicated on the Drawings and/or described herein, or may vary there from.

E. All debris of any kind accumulated from the work of this Section shall be disposed off the site.

F. Permits, Notice, Etc. The Contractor shall serve proper notice and consult with the State regarding any temporary disconnections of electrical or other utility lines in the area which may interfere with the removal work, and all such lines where necessary shall be properly disconnected or relocated before commencing with the work.

1. Contractor shall procure and pay for all necessary permits or certificates that may be required in connection with this work.

G. Protection: Throughout the work, protection shall be provided for walks, property, etc., scheduled to remain. Safe working conditions shall be maintained at all times for all personnel, and temporary lights and barricades shall be provided and maintained.

H. Any damage as a result of demolition, relocation, or temporary on-site storage work and any neglect to provide protction shall be fixed new at Contractor‘s own expense.

I. Carefully remove, salvage, provide photo documentation, itemize in list format and label existing items indicated for re-installation in new work and as indicated in drawings.

1.4 SUBMITTALS

A. Submit in accordance with Section 01300 – SUBMITTALS.

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

C. Salvageable Work for Owner (DLNR):

1. Submit complete existing Furniture List following site visit inventory and as indicated on drawings.

2. Submit Photo Documentation of each furniture item indicating location, item type, and condition prior to commencement of selective demolition and relocation of furnitures.

1.5 JOB CONDITIONS

A. Utility Services:

1. The existence of utility lines other than those shown on the drawings is not definitely known. Should any utility lines be encountered, the Contractor shall immediately notify the Engineer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Engineer.

2. The existence of above and below ground or exposed and concealed utility lines other than those shown on the drawings is not definitely known. Should any other utility lines be encountered, the Contractor shall immediately notify the Engineer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Engineer. Outages and interruptions must be accepted in advance by the Engineer. Submit written notice of outages and interruptions not less than 14 days in advance of intended outage. Report damage, however slight, immediately. Do not repair or recontruct any pipe, conduit, or installation without authorization, except perform emergency repairs immediately.

B. Salvageable Work – For the Owner (DLNR)

1. Work for Reuse in Project: In addition to any other indicated work, salvageable work includes the following:
    a. Existing Furniture: Existing Furnitures indicated on the drawings but not limited to workstations, partitions, tables, chairs, file cabinets, shelving, copy machines, fans, carts, and safes, appliances, trash receptacles, fire extinguisher cabinets.

C. Outages and interruptions must be approved in advance by the Engineer. Submit written notice of outages and interruptions not less than fourteen days in advance of intended outage. Report damage, immediately. Do not repair or reconstruct any pipe, conduit, or installation without authorization, except perform emergency repairs immediately.

D. Occupied Spaces: Do not interfere with used of adjacent occupied spaces. Maintain free and safe passage to and from occupied space.

E. Dust Control: Keep dust within acceptable levels at all times, including non-working hours, weekends and holidays, in conformance with Hawaii Administrative Rules, Title 11, Department of Health, Chapter 60.1, Air Pollution Control, latest edition as amended. The method of dust control and all costs incurred thereof shall be the responsibility of the Contractor.

F. Noise Control: Noise shall be kept within acceptable levels at all times in conformance with Hawaii Administrative Rules, Title 11, Department of Health, Chapter 46 – Community Noise Control, latest edition as needed. The Contractor shall obtain and pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at level exceeding the allowable limits. Conform to noise control related to events at the project site or adjoining facilities directed by the Engineer.

PART 2: PRODUCTS

2.1 MATERIALS

Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.

2.2 SALVAGEABLE WORK – FOR THE OWNER:

A. For Return to the Owner: Refer to the "Execution" (Part 3) paragraphs herein for requirements.

B. For Reuse in the Project – General:

1. Replacement Components and Materials: For any damaged, deteriorated and non-functioning components and materials, that is a result of damage and deterioration from the Contractor's removal operations, provide replacement components and materials as follows.
    a. Specific to the Manufacturer's Product: Provide the same Manufacturer's replacement components and materials. If no longer available, the

Manufacturer's recommended replacement part and material may be used when acceptable to the State.

b. Related Materials: Provide components and materials matching or exceeding the quality of the original components and materials.

2. New Components and Materials: Provide new components and materials as required to accommodate the new Project conditions that match or exceed the quality of the original components and materials as acceptable to the Engineer.

PART 3: EXECUTION

3.1 EXECUTION OF WORK

A. Methods: Perform selective demolition work in a systematic manner. Use such methods as required to complete the work indicated and to result in the Engineer's final intended finish. Implement surgical level type procedures over gross destruction methods when appropriate, inclusive of relocating furnitures indicated in drawings.

B. Maintaining Existing Structural Integrity:

1. Imposed Loads: Where the Contractor's operations will impose unsual static or impact loads to structures, ensure that structure will be capable of sustaining applied loads by proper location and application of operations and equipment.

C. Every precaution must be taken at all times for the protection and safety of State staff, employees, and the public.

3.2 BARRICADE

Erect temporary barricades as required, to prevent people from entering into project area to the extent as approved by the State. The extent of barricade may be adjusted as necessary with the approval of the State. This work shall be accomplished at no extra cost to the State.

3.3 CONTRACT ZONE LIMITS

The Contract Zone Limits shall generally be as indicated on the plan; however, work outside the Zone Limits necessary to complete the project shall be included.

3.4 MAINTAINING LIFE SAFETY SYSTEMS

The Contractor shall maintain the existing life safety systems in proper operation, such as fire alarm systems, exits, lighting, and other necessary aspects of life safety.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

Remove debris, rubbish, and other materials resulting from demolition operations from building site daily. Transport and legally dispose of materials off site.

A. If additional hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

B. Burning of removed materials is not permitted on project site.

3.6 DEMOLITION OPERATIONS – SALVAGEABLE WORK:

A. Salvageable for the Owner: Bubble wrap, tape, and place each product and each product related materials into heavy duty card board boxes that can efficiently fit each boxed product. Label each box with contents. Label each furniture item, protecting all following but not limited to corners panels, operable components, finish surfaces, electronic equipment, and attachments. Lable to indicate general product type, Manufacturer, Model No., at minimum. Other packing methods and labeling when acceptable to the Engineer.

B. Carefully relocate furnitures as indicated on Drawings to indicated temporary storage area, delineating the area with cones, taped-off by Contractor at all times, until furnitures are moved back to original locations on Drawings. Protect all furnitures throughout the duration of the scope of work from damage and theft.

C. For Reinstallation in the Project:

1. Remove work, relocate, and reinstall all related components without damage.

2. Store and protect from damage and deterioration, until required for reinstallation.

3. Prior to reinstallation, perform the following, unless otherwise indicated in the Report submitted and successfully reviewed and accepted by the Engineer:

a. Fully clean and polish each stored item.

b. Replace damaged and deteriorated components caused by Contractor.

c. If any touchup painting or total repaint required, such painting to match the original “like-new” paint coating.

d. Reinstall each stored item to provide a fully functioning product.

3.7 MATERIAL STORAGE:
Removed items to be re-installed by the Contractor shall be stored in a secured location as indicated on Drawings. The Contractor shall be responsible for all items and shall replace any missing or damaged items at his own expense.

3.6 CLEAN UP:
Debris and rubbish shall be removed from the site daily. Debris and rubbish shall not be allowed to accumulate on site. Debris shall be removed and transported in a manner that will prevent spillage on streets or adjacent areas.

END OF SECTION

DIVISION 6 - WOOD AND PLASTICS

SECTION 06070

WOOD TREATMENT

PART 1 -GENERAL

1.1 SUMMARY

A. Plant preservative and insecticide treatment of lumber and other wood products specified in other Sections of this Specification by pressure and dip methods.

B. Field treatment of field cut or drilled lumber.

1.2 RELATED SECTIONS

A. SECTION 06100 – ROUGH CARPENTRY: Wood blocking concealed framing and rough hardware.

B. SECTION 06200 - FINISH CARPENTRY: Factory termiticide treated board products suitable for application of high pressure laminate veneers.

1.3 REFERENCES

A. American Wood-Preservers' Association

1. AWPA C2-00: Lumber, Timber, Bridge Ties and Mine Ties-Preservative Treatment by Pressure Processes.

2. AWPA C9-00: Plywood-Preservative Treatment by Pressure Processes.

3. AWPA C31-00: Lumber Used out of Contact with the Ground and Continuously Protected from Liquid Water-Treatment by Pressure Processes. AWPA M4-01: Care of Preservative-Treated Wood Products.

4. AWPA N1-01: All millwork, Preservative Treatment by Non-Pressure Process.

1.4 SUBMITIALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data: Provide data on all treatment products, including field application instructions if applicable.

1. Provide manufacturer's Material Safety Data Sheets on all products, and hazardous materials.

2. Provide JCBO approvals for treatment solutions used.

C. Preserver Certifications:

1. Provide a Certificate of Treatment showing compliance with these specifications for the following:

a. Kiln drying.

b. Method of treatment performed, including dip treatment.

D. Contractor's Certification: Provide a certification letter stating that all wood used on this job including cuts and penetration were treated and coated with preservatives in compliance with requirements of this contract.

E. Guaranty: Submit written guaranty as specified in paragraph entitled "GUARANTY" hereinbelow.

1.5 REGULATORY REQUIREMENTS

A. Comply with State OSHL (Occupancy Safety and Health Law) and pollution controls regulations of the State Department of Health and EPA.

1.6 DELIVERY STORAGE AND HANDLING

A. Protect AWPA C31 inorganic boron treated wood from contact with the ground, rain or other sources of liquid water until permanent installation of covering construction.

1.7 GUARANTY

A. Provide a 2 year guaranty to replace all treated wood which is attacked by subterranean termites up to a total cost of $20,000.00 over the guaranty period (as verified by General Conditions Force Account Method cost accounting).

B. Provide a 5 year guaranty to replace all treated wood which is attacked by dry wood termites or deteriorates due to dry rot. The Surety shall not be held liable beyond 2 years of the project acceptance date.

PART 2- PRODUCTS

2.1 GENERAL

A. Mill lumber to finish size and shape prior to treating, and treat before assembly. Plywood may be treated in regular panel sizes.

B. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee 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.

2.2 PRESSURE TREATMENT WITH WATER-BORNE PRESERVATIVES

A. Treating Solutions:

1. Copper azole, Type A (CBA-A).

2. Inorganic boron (SBX).

B. Treatment Methods:

1. General:

a. All water-borne treatment methods require incising of lumber of nominal. 2-inch thickness (1-1/2 inches actual dimension).

b. Choice of treatment method and conditions of use of each treating solution shall conform to the treatment schedule contained in Part 3.

2. CBA-A: Treatment methods, depth of penetration and treating solution retention shall conform to AWPA C2 for lumber and C9 for plywood.

3. SBX: Treatment method shall conform to AWPA C31. Treating solution retention shall be a minimum of 0.28 pounds per cubic foot (equivalent to 0.42 DOT).

C. Drying:

1. Before Treatment:

a. CBA-A Treatment: Wood shall be air dried or kiln-dried before treatment to an average moisture content of 28 percent or less per AWPA standards.

b. SBX Treatment: Wood having a moisture content higher than 28 percent is acceptable when treating with SBX.

2. After Treatment: All one-inch and 2-inch lumber and all plywood shall be dried to a moisture content of 19 percent or less after treatment.

2.3 PRESSURE TREATMENT WITH OIL-BORNE PRESERVATIVES

A. Treating Solution:

1. 0.50 percent by weight chlorpyrifos, 0.75 percent by weight 3-iodo-2-propynyl butyl carbamate (IPBC). The solvent used in formulating the preservative solution shall meet the requirements of AWPA hydrocarbon solvent Type C, Standard P9, Paragraph 3.1.

2. For interior application use low odor mineral spirits as solvent.

B. Treatment Methods: Treated wood shall attain the following net retention requirements: 0.0175 pounds of Chlorpyrifos per cubic foot of wood, 0.035 pound of 3-lodo-2 propynyl butyl carbamate per cubic foot of wood.

C. Drying:

1. Before Treatment: All wood treated with oil-borne preservatives shall be kiln- dried to an average moisture content of 12 percent to 15 percent per AWPA standards.

2. After Treatment: Wood shall be thoroughly dried and virtually odor-free prior to installation.

2.4 PRESERVATION BY DIP TREATMENT

A. Treating Solution:

1. Any of the Oil-Borne Preservatives listed above.

2. A solution of one quart chlopyrifos in 55 gallons of a 0.50 percent IPBC solution.

B. Treatment Methods:

1. Immersion treat for a minimum period of 15 minutes.

2. Doors shall be treated after manufacture.

3. Do not incise lumber scheduled to be left unpainted or receive a clear finish. C. Drying After Treatment: Wood shall be thoroughly dried and virtually odor-free prior to installation.

2.5 FIELD TREATMENT

A. Treatment Method: Treat in accordance with AWPA Standard M4 using two heavy brush coats of a treating solution.

PART 3 -EXECUTION

3.1 SCHEDULE OF TREATMENTS

A. Species:

1. Treat all wood species except all-heart redwood.

2. All water-borne and oil-borne treatment solutions are applicable to douglas-fir and hem-fir species except for CBA-A treatment which is acceptable for hem- fir species only.

B. Application:

1. Pressure Treatment:

a. General: Unless otherwise stipulated, all lumber and plywood shall be pressure treated.

b. Exposed lumber 1-1/2 inch (net thickness) and over that will be unpainted or receive a clear finish shall be pressure treated with oil-borne preservative. Do not incise lumber.

c. SBX treated wood shall not be used in areas exposed to direct precipitation (e.g. exterior deck subframing, trellises, fencing, etc.) unless painted or covered with a finish material. SBX treatment shall not be used for exposed exterior wood decking.

2. Dip Treatment: All finish lumber under 1-1/2 inch net thickness; doors (solid wood and solid-core flush wood doors); finish plywood; and mill work items, such as for cabinet work, shelving and similar wood work that will be exposed to view in the finished work.

3. Field Cuts: Treat end cuts, notches and penetrations into treated lumber or plywood. Exception: Cuts and penetrations made in SBX treated wood 2- inches or less in nominal thickness need not be field treated.

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1- GENERAL

1.1 SUMMARY

A. Provide all rough carpentry, complete, including but not limited to rough bucks, blocking, and rough hardware.

1.2 QUALITY ASSURANCE

A. Grading Marks: Factory mark each piece of lumber with type, grade, mill, and grading agency identification.

B. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of rough bucks, blocking, and similar supports to allow proper attachment of other work.

C. Wood Preservative Treatment: In accordance with SECTION 06070 -WOOD TREATMENT.

1.3 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Certificates: Provide a certificate of treatment showing compliance with the specifications, and a certificate of dryness for all wood specified to be dried after treatment.

1.4 PRODUCT HANDLING

A. Delivery and Storage: Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and provide air circulation within stacks. Store materials away from threat of termite or other insect infestation.

PART 2- PRODUCTS

2.1 MATERIALS

A. Lumber, General: Factory-mark each piece of lumber with type, grade, mill and grading agency. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, with moisture content specified for each use.

1. Provide dressed lumber, S4S, unless otherwise indicated.

2. Provide seasoned lumber with 15 percent maximum moisture content at time of dressing.

B. Light Framing Lumber: 2-inches through 4-inches thick, less than 6-inches wide, such as blocking, rough bucks, etc., provide Construction grade, Douglas Fir/Larch, or Hem/Fir.

C. Structural Members: Framing members, provide No. 1 Grade, Douglas Fir/Larch.

D. Fasteners and Anchorages: Provide size, type, material and finish where required or where indicated and as recommended by applicable standards, complying with applicable ANSI standards for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails. Provide all fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

2.2 WOOD TREATMENT

A. Treat all rough lumber in accordance with SECTION 06070 -WOOD TREATMENT.

PART 3- EXECUTION

3.1 INSTALLATION

A. General: Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

1. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted. Lumber shall be flush and tight against each other during fastening.

2. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Overdriving of fasteners shall be avoided.

3. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

4. Fasteners having chipped coatings shall not be used.

5. Where more than 20 percent of the fasteners are found to be overdriven up to 1/8-inch deep, or if any fastener is overdriven more than 1/8-inch deep, additional fasteners shall be driven at a rate of one additional fastener for every 2 overdriven fasteners.

6. Where the corrosion resistant coating on the head of the fastener has been chipped by the device in excess of 25 percent, the fastener shall be removed and replaced. The device shall not be used until its driver has been repaired.

7. Nails shall be of the proper length to suit their particular application (the point of the nail shall not be exposed after being driven).

B. Wood Framing, General:

1. Provide framing members of sizes and on spacings shown, and frame openings as shown, or if not shown, comply with recommendations of "Manual for House Framing" of National Forest Products Association. Do not splice structural members between supports.

2. Anchor and nail as shown, and to comply with the current ICBO Uniform Building Code.

C. Wood Blocking and Rough Bucks: Provide wherever required for attachment of other work. Form to shapes as shown and cuts as required for true line and level of work to be attached. Coordinate location with other work involved. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown.

D. Re-treat cut and penetrated lumber in accordance with SECTION 06070 - WOOD TREATMENT.

END OF SECTION

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07920

SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Completely close with sealant all joints specified or required to be sealed to a watertight condition.

1.2 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Manufacturer's Data: Submit copies of manufacturer's product data and specifications for type of sealant required, to the Engineer for approval.

C. Material Safety Data Sheets (MSDS): Submit MSDS for each sealant product.

D. Color Samples: Submit 3 sets each of color finish samples of sealants.

E. Guaranty: Submit written guaranty as specified in paragraph entitled "GUARANTY" hereinbelow.

1.3 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. On surfaces to be painted, install sealants prior to painting. Coordinate with SECTION 09902- REPAINTING.

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.

1.4 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 shelf life.

C. All sealant materials shall be installed prior to expiration of shelf life.

1.5 GUARANTY

A. Provide a 2-year guaranty against leaks, air infiltration, cracks and other failures of the installation and materials.

1. Repair or replace sealants to seal leaks caused by faulty materials or workmanship.

2. Repair or replace damage to the building or its finishes, equipment or furniture when occasioned by such leaks.

PART 2- PRODUCTS

2.1 MATERIALS

A. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyethylene-jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, nonabsorptive material as recommended for compatibility with sealant by the sealant manufacturer to control the joint depth for sealant placement, to break bond of sealant at bottom of joint, to form optimum shape of sealant bead on back side, and to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed. Do not use oakum or other types of absorptive materials as backstops.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer.

C. Masking Tape: Non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

D. Primer for Sealants: Non-staining, as recommended by the sealant manufacturer.

E. Sealants at Exterior and Interior Vertical and Overhead Moving Joints: One-part polyurethane-based sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use NT. Provide one of the following, or approved equal:

1. Dymonic; Tremco, Inc.
2. Chem-Calk 900; Bostik Construction Products Div.
3. Sikaflex 1a; Sika Corp.
4. Dynatrol I; Pecora Corp.
5. NP-1; Sonneborn.

F. Sealants at Interior Vertical and Overhead Non-Moving Joints: Non-Eiastomeric Sealant; acrylic-emulsion type, conforming to ASTM C 834. Provide one of the following, or approved equal:

1. AC-20 Acrylic Latex: Pecora Corp.
2. Tremco Acrylic Latex 834; Tremco, Inc.
3. Chem-Calk 600; Bostik Construction Products Div.
4. Sonolac; Sonneborn.

G. Silicone Sealant: At Perimeter of All Plumbing Fixtures and Fittings: One-part mildew-resistant silicone sealant conforming to ASTM C 920, Type S, Grade NS, Class 25, Use NT, formulated with fungicide; intended for sealing interior joints with non-porous substrates. Provide one of the following, or approved equal:

1. Dow Corning 786; Dow Corning Corp.
2. SCS 1702 Sanitary; General Electric Co.
3. Tremsil 600 White; Tremco, Inc.
4. Omni Plus; Sonneborn.
5. 898 or 893, No. 345; Pecora Corp.

H. 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 approved equal:

1. Extru-Seal; Pecora Corp.
2. 440 Tape; Tremco, Inc.
3. Chem-Tape 40; Bostik Construction Products Div.

PART 3- EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 EXAMINATION

A. 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.

3.3 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; waterproofing; 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 wirebrush to remove loose mill scale. Remove dirt, oil, or grease by solvent cleaning, and wipe surfaces with clean cloths.

5. Clean metal 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.

3.4 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply. Do not apply 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 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 Nonsag 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. Provide concave joint configuration per Figure 5A in ASTM C 1193.

3.5 CLEAN UP

A. Immediately scrape off fresh sealant compound that has been smeared on masonry or porous surfaces and rub clean with a solvent as recommended by the compound manufacturer. Upon completion of sealant compound application, remove all remaining smears and stains resulting therefrom and leave the work in a clean, uniform, and neat condition.

3.6 PROTECTION

A. Protect areas adjacent to joints from compound smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

B. 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 - DOORS AND WINDOWS

SECTION 08110

HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Provide hurricane rated steel doors and frames as indicated and scheduled on drawings.

B. Related Work Described Elsewhere:

1. Finish hardware is specified in SECTION 08210 – WOOD DOORS.

2. Finish hardware is specified in SECTION 08710 - FINISH HARDWARE.

3. Field applied painting is specified in SECTION 09902 - REPAINTING.

1.2 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Manufacturer's Data: Submit manufacturer's technical product data substantiating that products comply with requirements.

C. Shop Drawings: Submit for fabrication and installation of steel door frames. Include details of each frame type, elevations of door frame design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections, gauges, and finishes. Show anchorage and accessory items.

D. Schedule: Furnish schedule of door frames using same reference numbers for details and openings as those on contract drawings.

1.3 QUALITY ASSURANCE

A. Provide door frames complying with ANSI/SDI A250.8, "Recommended Specifications for Standard Steel Doors and Frames", and as herein specified.

B. Contractor with Installer shall inspect each door frame, checking frame for squareness, alignment, twist, plumbness and anchor attachment before installation of wallboard [and masonry] to assure proper fit of doors with correct clearances and operation without modification to the door. Frames that are out of tolerance shall be reinstalled to requirements

C. Provide Member of National Association of Architectural Metal Manufacturers (NAAMM), that manufacturers in accordance with standards set by the Hollow Metal Manufacturers Association (HMMA) for fabrication methods and product quality.

A. Door Hardware Mounting Heights: The Contractor shall be responsible to coordinate all mounting heights of various finish hardware with all project requirements. Accessible hardware shall be mounted per Americans with Disabilities Act Accessibility Guidelines (ADAAG) Section 404.2.7.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide temporary steel spreaders securely fastened to the bottom of each welded frame.

B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to the Engineer; otherwise, remove and replace damaged items as directed.

C. Store door frames at building site under cover in a dry, secure place. Place units on minimum 4-inch high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chambers. If cardboard wrapper on door frame becomes wet, remove carton immediately. Provide 1/4-inch spaces between stacked doors to promote air circulation.

D. Handle manufactured materials as recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Galvanized Steel Sheets: door frames shall be manufactured of commercial quality, stretcher leveled flatness, cold rolled steel per ASTM A 1008/A 1008M, "Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable", and ASTM A 568/A 568M, "Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for". Sheet shall be galvannealed to 'G-90' minimum coating weight for exterior applications per ASTM A 924/A 924M, "Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process". Internal reinforcing shall be manufactured of hot rolled pickled and oiled steel per ASTM A 1011/A 1011M, "Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength".

B. Supports and Anchors: Fabricate of not less than 18 gauge galvanized sheet steel.

C. Frame Anchors: As required for hurricane requirements.

1. All frame jamb anchors to be provided; one each jamb per 30-inches of frame height or fraction thereof, (3 minimum).

2. Floor Anchors: Angle clip type:
   a. 16 gauge minimum.

   b. To receive 2 fasteners per jamb.

   c. Welded to the bottom of each jamb.

3. In-Place Masonry or Concrete: 3/8-inch countersunk flat head stove bolt and expansion shields.

D. Inserts, Bolts, and Fasteners: Manufacturer's standard units, except hot-dip galvanize, complying with ASTM A 153/A 153M, "Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware", Class C or D as applicable.

E. Factory Applied Primer Paint: Rust-inhibitive enamel paint, either air-drying or baking, suitable as a base for specified finish paints conforming to ANSI/SDI A250.10, "Test Procedures and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames". Primers shall be free from asbestos, lead, mercury, chromate, and cadmium.

2.2 FABRICATION, GENERAL

A. Fabricate steel door frame units to be rigid, neat in appearance and free from defects, warp, or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at project site. Comply with ANSI/SDI A250.8 requirements.

B. Fabricate frames, concealed stiffeners, reinforcement, edge channels, and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).

C. Fabricate all door frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16 gauge inverted steel channels, flush end cap cover plate, and sealed to prevent water intrusion. Door hinge edge shall be one-piece full height, 14 gauge channel, formed and tapped for hinges. Doors shall have a beveled (1/8-inch in 2-inches) lock edge and square hinge edge.

D. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.

E. Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI/SDI A250.8,

ANSI/SDI A250.6, and additional requirements of ANSI/BHMA A156.115 specifications for door and frame preparation for hardware.

1. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site. Provide minimum gauge hardware reinforcing for mortise or surface applied hardware as follows:
   a. Hinges:
      1) 10 gauge or equivalent number of threads on doors.

      2) 7 gauge on frames.

   b. Locks: 12 gauge or equivalent number of threads.

   c. Surface Closers: 12 gauge.

   d. Panic Devices: 12 gauge.

2. Locate finish hardware as indicated on final shop drawings or, if not indicated, in accordance with ANSI/SDI -A250.8, "Recommended Specification for Standard Steel Doors and Frames", and ADAAG Section 404.2.7.

F. Factory Painting:

1. Clean, phosphatize, and prime paint exposed surfaces of steel door frame units, including galvanized surfaces.

2. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

3. Apply factory coat of prime paint to an even consistency to provide a uniformly finished surface ready to receive finish paint.

2.3 STANDARD STEEL FRAMES

A. Provide metal frames for doors of type and style as shown on drawings and schedules conforming with ANSI/SDI A250.8. Conceal fastenings, unless otherwise indicated. Fabricate frames of cold-rolled furniture steel minimum 14 gauge to conform with door physical performance level.

1. Fabricate frames with mitered corners, welded construction.
   a. Welded Frames: Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth. Weld frames in accordance with the recommended practice of the Structural Welding Code Sections 1 through 6, AWS 01.1/01.1M, and in accordance with the practice specified by the producer of the metal being welded.

2. Form all frames of hot dip galvanized steel.

3. Frames shall comply with ANSI/SDI A250.4, minimum Level A, one million cycle swing test performance for a 4070 door frame.

B. Reinforcements: Reinforce frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at project site.

C. Gasketing seal : Provide perimeter gasketing at all door frame edges that come in contact with edges of door. Door to also be provided with door bottom seal.

D. Plaster Guards: Provide 26 gauge steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

E. Template Hardware: Factory cut doors and frames for all template hardware, including hinges, bolts, etc.

F. Grouted Frames: Grout where indicated as recommended by the manufacturer and as required by NFPA 80.

2.4 FINISHES

A. Primer: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with SDI A250.10 for acceptance criteria.

B. Finish: Paint as specified in SECTION 09902 – REPAINTING and as indicated on drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install standard steel frames and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

B. Placing Frames: Comply with provisions of ANSI/SDI A250.11, "Recommended Erection Instructions for Steel Frames", unless otherwise indicated.

1. Anchors: Provide sufficient anchorage to attach to wall and floor in accordance with ANSI/SDI A250.4, test compliance minimum Level A of one million cycles, or anchorage as detailed on drawings to specific wall conditions. Anchor exterior door frames for wind pressure requirements.

2. Set frames accurately in position, plumbed, aligned, and braced securely until

permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

3. In concrete and masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.

4. At in-place concrete and masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

C. Door Installation:

1. Fit wood doors accurately in frames, within clearances specified in ANSI/SDI A250.8. Shim as necessary to comply with SDI 122.

2. Fire Rated Doors: Install with clearances specified in NFPA 80.

3. Gasketing to be installed at interior door opening to provide an airtight installation.

D. Door Clearances: Unless otherwise recommended by the manufacturer, provide uniform clearances as listed below:

1. Head, Jamb, and Lock Edge: 1/8-inch maximum.

2. Meeting Stile: 1/4-inch maximum (3/16-inch maximum for fire doors).

3. Threshold: 1/8-inch (1/4-inch maximum).

3.2 ADJUST AND CLEAN

A. Factory Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of factory coating and apply touch-up of matching air-drying coating.

B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel door frames undamaged and in complete and proper operating conditions.

END OF SECTION

SECTION 08210

WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all solid core flush wood doors with wood veneer faces as required by the work.

1.2 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Manufacturer's Data: Door manufacturer's technical data for each type of door, including details of core and edge construction. Provide method of marking and location of mark for exterior grade doors.

C. Shop Drawings: Submit shop drawings indicating location and size of each door, door swing, stile and rail dimensions, veneers, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, and other pertinent data.

D. Warranty: Submit written warranty as specified in paragraph entitled "WARRANTY" hereinbelow.

1.3 QUALITY ASSURANCE

A. NWWDAJWDMA Quality Standard: ANSI/NWWDA I.S.-1A "Wood Flush Doors", of National Wood Window and Door Association (NWWDA)/Window and Door Manufacturers Association (WDMA).

B. NWWDAJWDMA Quality Marking: Mark each wood door with WDMA Wood Door Certification Hallmark certifying compliance with applicable requirements of ANSI/NWWDA I.S.-1A Series. For manufacturers not participating in WDMA Hallmark Program, a certification of compliance may be substituted for marking of individual doors.

C. Factory seal all doors on all 6 sides using manufacturer's standard.

D. Exterior grade doors with Type I adhesives shall be marked on the door edge. Contractor shall show markings to the Engineer prior to fitting procedures that will remove the marking or finishing.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of ANSI/NWWDA I.S.-1A Section G-20 "Care and Installation at Job Site", as well as with manufacturer's instructions.

B. Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames. and hardware, using temporary, removable or concealed markings.

C. Do not walk on or stack other materials on top of stacked doors. Do not drag doors across one another.

D. For all doors not factory finished, seal all four edges immediately after delivery.

E. Store doors away from threat of termite or other insect infestation.

1.5 WARRANTY

A. General: Warranties shall be in addition to, and not a limitation of, other rights the State may have under the Contract Documents.

B. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace all defective doors which have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.

1. Warranty shall be in effect during following minimum period of time after date of Substantial Completion, unless longer warranty is standard with the manufacturer.

2. All Doors: Two year minimum.

C. Contractor's Responsibilities: Replace or refinish doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

PART 2- PRODUCTS

2.1 EXTERIOR FLUSH WOOD DOORS

A. Solid Core Doors for Opaque Finish: Comply with the following requirements.

1. Faces: Mahogany or any other closed-grain hardwood.

2. Grade: NWWDA Standard.

3. Construction: SLC-5 or SLC-7 (Glued block core, 5 or 7-ply).

2.2 INTERIOR FLUSH WOOD DOORS

A. Solid Core Doors for Opaque (Paint) Finish: Comply with the following requirements:

1. Faces: Mahogany or any closed-grain hardwood of mill option.

2. Grade: NWWDA Standard.

3. Construction: SLC-5 or SLC-7 (Glued block core, 5- or 7-ply).

2.3 GLASS LITE OPENINGS

A. Wood Molding Frame:

1. Wood Species: Wood species to match wood door.

2. Profile: Manufacturer's standard shape unless otherwise indicated.

3. Glazing: Glass as specified under SECTION 08800 - GLAZING.

4. Finish: Paint finish as specified under SECTION 09902 - REPAINTING.

2.4 FABRICATION

A. Wood Doors: Fabricate wood doors to produce doors in sizes required for job- site fitting. Stile edge bands of doors to be painted shall be mill option species. No finger joints will be accepted in stile edge bands.

B. Adhesives: Adhesives shall be in accordance with WDMA I.S.-1A, requirements for Type I Bond Doors (waterproof) for exterior doors and requirements for Type II Bond Doors (water repellent) for interior doors. Adhesives shall contain no formaldehydes.

C. Finish Hardware: Locate hardware to comply with DHI-WDHS-3. Comply with finish hardware schedules, door frame shop drawings, DHI A115-W series standards, and hardware templates.

2.5 PRESERVATIVE TREATMENT

A. Treat all solid core doors at factory with water repellent after manufacturing has been completed, in accordance with WDMA Industry Standard I.S.-4 "Water- Repellent Preservative non-Pressure Treatment for Millwork". Dip treat as specified under SECTION 06070 - WOOD TREATMENT.

PART 3- EXECUTION

3.1 EXAMINATION

A. Examine installed door frames prior to hanging door:

1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.

2. Reject doors with defects. Replace doors which cannot be field repaired to match new as approved by the Engineer at no additional cost to the State.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation see SECTION 08710 - FINISH HARDWARE.

B. Door Frames: For installation see SECTION 08120 – STEEL DOOR FRAMES

C. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and of referenced NWWDAJWDMA standard and as indicated.

D. Job Fit Doors: Align and fit doors in frame with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer. Machine doors for hardware. Seal cut surfaces after fitting and machining.

1. Fitting Clearances for Non-Rated Doors: Provide 1/8-inch at jambs and heads; 1/16-inch per leaf at meeting stiles for pairs of doors; and 3/16-inch plus or minus 1/16-inch from bottom of door to top of decorative floor finish or covering except as required for door swing. Where threshold is scheduled, provide 1/4-inch clearance from bottom of door to top of threshold unless scheduled for undercut or required to match existing.

2. Bevel non-rated doors 1/8-inch in 2-inches at lock and hinge edges.

E. Prefit Doors: Fit to frames for uniform clearance at each edge.

3.1 ADJUSTING

A. Rehang or replace doors which are hinge bound and do not swing or operate freely. Replace or rehang doors which are warped, twisted, or which are not in true planes.

END OF SECTION

SECTION 08710

FINISH HARDWARE

PART 1 - GENERAL

1.1 GENERAL CONDITIONS: The General Instructions to Offerors, the General Conditions, and Special Provisions preceding these specifications shall govern this section of the work.

1.2 SUMMARY:

A. Provide all finishing hardware required for all doors and cabinet work, complete as specified.

B. It is the intent of this Specification to cover in general the class and character of all finish hardware required.

C. The hardware list specified has been made for the convenience of the Contractor and covers in general the necessary hardware for doors, casework, etc., but all other doors, etc., shown on the Drawings and not covered by the general characterization shall be fitted with appropriate hardware of the same standards as the hardware described throughout these specifications. Contractor shall furnish hardware schedule as specified.

D. Suppliers proposing substitutes of equivalent products of other than the manufacturers named shall submit schedules listing the product and manufacturer specified and the product and manufacturer of proposed substitute. This schedule shall be submitted in accordance with the GENERAL CONDITIONS.

1.3 SUBMITTALS:

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Schedule: Furnish copies of the schedule of hardware in compliance with specifications and Drawings. Schedule format shall be vertical type as listed in DHI document "Sequence and Format for the Hardware Schedule". List each opening and hardware to be applied. State materials finish, and manufacturer's number for each item. Required types are listed.

C. Manufacturer's Data: Submit manufacturer's descriptive literature along with schedule.

D. Shop Drawings: Submit mounting locations of door hardware for each flood resistant door assembly, indicating all latching hardware components above the 36” water line.

E. Keying Schedule: Submit a keying schedule for approval by the Engineer; using keying nomenclature as listed in DHI document "Keying Terminology". Door designation listed in the Keying Schedule shall be same as those used on Drawings and Hardware Schedule. Keying of locks shall be as directed by the Engineer.

F. Tools and Maintenance Instructions: Furnish a complete set of special wrenches, tools, maintenance instructions applicable to each different or special hardware component.

G. Certification: After completion and inspection by hardware supplier of all construction work, certify on an approved form, that all items of finish hardware have been adjusted and are working properly.

H. Warranty: Submit written warranty as specified in paragraph entitled "WARRANTY" hereinbelow.

1.4 QUALITY ASSURANCE:

A. Perform work in accordance with NFPA 101 as applicable.

B. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum 3 years documented experience. Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

C. Hardware Supplier: Company specializing in architectural finish hardware. Lock systems shall be accepted only if they have local stock warehouse by either the project hardware supplier or other local representation to ensure availability of replacement parts.

D. Hardware Supplier Personnel: Employ an experienced Architectural Hardware Consultant (AHC), or Engineer accepted equal, who is available at reasonable times during the course of the Work, to the Engineer and Contractor for consultation about Project's hardware requirements, to verify specified hardware with door function and hardware finishes, and to establish keying system.

E. Where patching of existing doors and frames is necessary, patching compounds shall not be used. The patch shall consist of wood plugs secured with permanent adhesives.

1.5 REGULATORY REQUIREMENTS:

A. Conform to applicable code for accessibility.

B. Definition: "Door Hardware" includes items known commercially as finish hardware which are required for swing and sliding doors, except special types of unique and non-matching hardware specified in same Section as door and door frame.

C. Door Hardware to conform to testing by the American Standard for flood abatement equipment for water depths up to and including 36” to standards set for by ANSI/FM approvals 2510-2014 (section 4.3) not exceeding maximum allowable water seepage.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Delivery, store, protect and handle products to prevent damage of any kind and to maintain security to site.

B. Inventory hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

C. Deliver individually packaged hardware items at proper times to proper locations (shop or project site) for installation.

D. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

E. Deliver permanent keys to the Engineer.

F. Provide secure lock-up for hardware delivered to project but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the Work will not be delayed by hardware losses, both before and after installation.

1.7 WARRANTY: Provide one year warranty for all Contractor furnish and installed materials. Door closers shall have a minimum 10 year's manufacturer's warranty. The Surety shall not be liable beyond 2 years of the project acceptance date.

1.8 PROJECT RECORD DOCUMENTS: Record actual locations of installed cylinders and their master key code.

1.9 OPERATION AND MAINTENANCE DATA:

A. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

B. The manufacturer's representative shall instruct the User's staff on the hardware's maintenance procedures (type of lubricant needed and frequency of maintenance).

1.10 MAINTENANCE MATERIALS:

A. Provide special wrenches and tools applicable to each different or special hardware component.

B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART-2 - PRODUCTS

2.1 SCHEDULED HARDWARE:

C. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware is indicated in HARDWARE GROUPS at end of this Section. Products are identified by using proprietary catalog numbers, and are used to establish quality and function of products desired.

D. Product numbers indicated in the HARDWARE GROUPS are those of the manufacturers listed and are used to establish the quality of products intended.

2.2 MATERIALS AND FABRICATION:

A. Hand of Door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of indicated door.

B. Base Metals: Produce hardware units of basic metal and forming method specified, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated. Do not furnish optional materials or forming methods for those indicated, except as otherwise specified.

C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated. Fasteners exposed to the weather shall be non-ferrous metal or stainless steel.

D. Furnish appropriate screws for installation, with each hardware item. Provide Phillips flat head screws except as otherwise indicated. Finish exposed screws to match hardware finish. If exposed in surfaces of other work, to match finish of such other work as closely as possible, including prepared-for-paint finish in surfaces to receive painted finish.

E. Provide concealed fasteners for hardware units which are exposed when door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed in other work, except where it is not feasible to adequately reinforce the Work. In such cases, provide sleeves for each through bolt or use sex screws fasteners.

F. Expansion shields in concrete or masonry shall fill the depth and diameter of drilled holes.

G. Door latching shall be centered in strike box.

2.3 HINGES:

A. General: Hinges shall conform to ANSI/BHMA A156.1 and the requirements of this specification.

B. Screws: Furnish Phillips flat head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1 Nonferrous Hinges: Stainless steel pins.

2 Exterior, Out-swing Doors: Non-removable pins (NRP).

3 Interior Doors: Nonrising pins.

4 Tips: Flat button and matching plug, finished to match leaves.

D. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90-inches or less in height and one additional hinge for each 30-inches of additional height.

E. Size of hinges shall be as follows:

Door Thickness/Width	Hinge Height	Hinge Width
1-3/4 inches to 36-inches	4-1/2 inches	4-1/2 inches extra heavy ball bearing
1-3/4 inches over 36-inches	5-inches	4-1/2 inches extra heavy ball bearing
1-3/4 inches over 48-inches	5-inches	4-1/2 inches extra heavy ball bearing

Note: Hinge width shall be of sufficient size to clear frame and trim when door swings 180 degrees.

F. Hinge prep: Hinges at door sealed watertight chamber filled with caulking by manufacturer. Bottom of chamber with slope, seamless continuously welded door watertight edge with filler.

2.4 LOCK CYLINDERS AND KEYING:

A. Locks shall be keyed to the existing State master key system.

B. All locks shall have 4 keys each. Locks for Storage Rooms, casework, and cabinets shall be keyed alike but not keyed to the same as the entry door to allow use of the room without full access to all areas. Locks for the same rooms shall be keyed alike. All locks shall be master keyed and Grandmaster keyed to a single lock system. During period of construction, all locks shall be operated by a special construction master key. Regular day and master keys are to be retained by the Contractor so they cannot be obtained or duplicated by unauthorized persons. All keys shall be stamped "DO NOT DUPLICATE" at the point of manufacture. The special construction master key shall become inoperative when regular keys are turned over to the Engineer. Proper certification of factory assembly of all locks and cylinders as well as factory assembly of all locks and cylinders as well as factory master keying shall be furnished by the Contractor prior to final acceptance of this portion of the work. Certificate shall then be given to the Engineer. Provide 10 construction master keys, 3 grand master keys, and 3 master keys per set.

C. Upon acceptance of the project, the Contractor shall arrange for temporary keys, obtained from custodian if further access is required.

2.5 LOCKS, LATCHES AND BOLTS:

A. General: Mortise locks and latches shall conform to ANSI/BHMA A156.13, bored locks and latches shall conform to ANSI/BHMA A156.2, bolts shall conform to ANSI/BHMA A156.16, and the requirements of this specification.

B. The following locksets and deadbolts will be considered equal:

1 Sargent 10-Line, 480 series deadbolts.

2 Schlage "D" series, 8600 series deadbolts.

3 Yale 5400L series, 3700 series deadbolts.

4 Corbin Russwin CL3300 series, DL3000 series deadbolts.

5 Best 9-Line, 83 Series deadbolts.

C. Mortise locksets shall be manufactured in a single sized case formed from 12 gauge minimum steel. The case shall be closed on all sides and back. The lockset shall have a field-adjustable, beveled armored front, with a 0.125-inch minimum thickness.

D. Mortise locksets shall have freewheeling outside levers on all exterior doors. The freewheeling lever design shall allow the lever to swing freely up to 70 degrees, when the door is locked.

E. Strikes: Provide manufacturer's standard wrought box strike for each latch of lock bolt, with lip extended to protect frame, finish to match hardware set. Provide dustproof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolts.

F. Lock Throw:

1 Provide 3/4-inch minimum throw of latch and one-inch minimum for deadbolt.

2 Flush Bolt Heads: Minimum of 1/2-inch diameter rods of brass, bronze or stainless steel, with minimum 12-inches long rod for doors up to 7-feet in height; minimum 42-inches long rod for doors up to 9-feet 6-inches in height.

G. Provide locksets, latches, and cylinders equal in all respects to those specified in the Hardware Groups.

H. Lock prep: All latching hardware components above the 36” waterline. Lock cylinder to be fitted with O-ring. Lock and lever device within door to be watertight and fabricated with

slope to bottom of chamber. Continuous watertight welded seams at interface between door hardware and door edge.

2.6 CLOSERS AND DOOR CONTROL DEVICES:

A. General: Closers shall conform to ANSI/BHMA A156.4 and the requirements of this specification.

B. Size of Units: Comply with manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather, and anticipated frequency of use. Where parallel arm closers are installed, provide closer unit one size larger than recommended for use with standard arms.

C. Provide parallel arm or regular arm closer as required to mount closer on door face least exposed to public traffic.

D. Closers shall have brass adjustment operating valves for closing speed, latching speed, and backcheck control as a standard feature.

E. Closer covers shall be rectangular, full cover type, high impact non-corrosive, and flame retardant.

F. Closer shall not require removal for adjustments to be made.

2.7 FINISHES:

A. Finishes: Identified in schedule at end of Section.

1 Designations used are those listed in ANSI/BHMA A156.18 "Materials and Finishes", including coordination with traditional U.S. finishes shown by certain manufacturers for their products.

2 If no BHMA finish is established, match specified product.

B. Provide matching finishes for hardware units at each door or opening to greatest extent possible, except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where base metal or metal forming process is different for individual units of hardware exposed at same door or opening.

C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for applicable units of hardware by referenced standards.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Pre-Installation Meeting: Before start of work under this contract, the Contractor, hardware installer, hardware manufacturer's representative or supplier, the Engineer, and a DLNR HR representative shall meet to review the keying system, hardware installation instructions, and installation conditions.

B. Verify that doors and frames are ready to receive Work and dimensions are as indicated.

3.2 INSTALLATION:

A. Install each hardware item in compliance with manufacturer's instructions and recommendations.

B. Mount hardware units at height indicated in the Door and Hardware Institute's Recommended Locations for Builders Hardware for Standard Steel Door Frames, except:

1 As otherwise indicated or as required to comply with governing regulations.

2 Mount deadbolt (if any) centerline not more than 5-inches above latchset handle centerline.

C. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protection with finishing work. Do not install surface mounted items until finishes have been completed on the substrate.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set metal thresholds for exterior doors in full bed of butyl rubber, polyisobutylene mastic sealant, or preformed butyl-polyisobutylene sealant tape as specified under SECTION 07920 - SEALANTS.

G. Fit face of all mortise parts snug and flush.

H. Operating parts shall move freely and smoothly without binding, sticking or excessive clearance.

I. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

J. Protect hardware from damage or marring of finish during construction. Use strippable coatings, removable tapes or other approved means.

K. Ensure that hardware displays no evidence of finish paint after building cleanup with exception of prime coated hardware installed for finish painting. The Contractor may achieve this by sequencing installation, removing after fittings and reinstalling after painting is completed, providing protection, cleaning original hardware finish, or other approved means.

L. Latch and Bolt: Install latch and bolt to automatically engage in keeper, whether activated by closer or manual push. In no case shall additional manual pressure be required to engage latch or bolt in keeper.

M. Closers:

1 Do not mount closers on corridor side of door except at exterior doors.

2 Carefully adjust closers to operated noiselessly and evenly.

3 Have manufacturer's representative regulate closers prior to Engineer's acceptance of building.

3.3 FIELD QUALITY CONTROL: Required certified Architectural Hardware Consultant from door hardware supplier to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.4 ADJUST AND CLEAN:

A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace items which cannot be adjusted to operate freely and smoothly as intended for application made.

B. Clean adjacent surface soiled by hardware installation.

C. Final Adjustment:

1 Clean operating items as necessary to restore proper function and finish of hardware and doors.

2 Adjust door control devices to compensate for final operation of ventilating equipment.

3 Lubricate bearings surface of moving parts and adjust latching and holding devices for proper function.

4 Test keys in every lock for proper operation and conformance with keying system.

5 Water test panel installation, adjust and replace gasketing components that allow water seepage, leaks, and water intrusion, to satisfaction of Engineer.

3.5 HARDWARE GROUPS:

HW GROUP- 001
(INTERIOR DOORS)

		SINGLE DOOR	
3.0 EA	HINGE	TA2314 4.5 X 4.5 US26D	MCK
1.0 EA	OFFICE LOCKSET	28-10G05 LL US26D WBX	SAR
		KEY LOCKSET TO EXISTING DLNR	
		MASTER KEY SYSTEM AS DIRECTED	
1.0 EA	DOOR CLOSER	1431 O EB	SAR
1.0 EA	DOOR SEAL	PK55D17	PEM
1.0 EA	AUTO DOOR BOTTOM	234DV 36″	PEM
1.0 EA	WALL STOP (CONVEX)	406 613	ROC

END OF SECTION

SECTION 08800 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide vision panel door glazing as indicated on the drawings and as specified herein.

B. Related Work Specified Elsewhere: SECTION 08210 – WOOD DOORS

1.2 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Samples: Submit 4-inch x 4-inch samples of each type and thickness of glass for approval prior to ordering.

1.3 QUALITY ASSURANCE

A. Glass Standards: Comply with ASTM C 1036.

1.4 PRODUCT HANDLING

A. Comply with manufacturer's instructions for shipping, handling, storing and protecting glass and glazing materials. Exercise exceptional care to prevent edge damage to glass.

1.5 LABELING

A. Each piece of glass shall be of domestic manufacture and label showing the name of the manufacturer and the grade or quality thereof. The labels shall be intact before and after installations. When glass is not cut to size by the manufacturer, and is furnished unlabeled from local stock, the Contractor shall submit an affidavit stating the quality, thickness, type and manufacturer of the glass furnished.

1.6 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thicknesses indicated or specified are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in- service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed all applicable codes, including the Uniform Building Code.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All glass products shall be of the quality as manufactured by Pittsburgh Plate Glass Company, Libbey Owens Ford Company, ASG Industries, CE Glass Company, Guardian Industries, Sierracin/ Sylmar, or approved equal. Thickness as shown, specified, or as established by UBC, latest edition, for maximum allowable area of glass for 20 lbs./sq. ft. windload.

1. Tempered Glass, Clear: ASTM C 1048, Kind FT, Condition A, Type I, Class 1, Quality q3, thickness as indicated.

B. Fabrication – Specialty Products:

1. Fire Rated Glass Assemblies: Ensure that fire rated glass products can be properly incorporated into each glazed framing condition in conformance with the Specialty Glass Manufacturer's and Glazed Framing Manufacturer's requirements to provide an integrated fire assembly meeting all Code requirements.

C. Glazing Tape- For Interior Glazing: Preformed butyl-polyisobutylene glazing tape, equal to one of the following:

1. "Chem-Tape 40"; Bostick Construction Products Div.

2. "Extru-Seal"; Pecora Corp.

3. "Tremco 440 Tape"; Tremco, Inc.

D. Miscellaneous Glazing Materials:

1. Cleaners, Primers and Sealers: Of type recommended by sealant manufacturer.

2. Setting Blocks: Neoprene or EPDM, 70-90 durometer hardness.

3. Spacers: Neoprene or EPDM, 40-50 durometer hardness.

PART 3- EXECUTION

3.1 GENERAL

A. Perform all glazing in strict accordance with applicable provisions of the "Glazing Manual" published by the Glass Association of North America (GANA), Topeka, Kansas, and as herein specified.

3.2 INSTALLATION

A. Glass shall be set true and tight by skilled glaziers. Glazing compound shall be neatly and cleanly run with corners carefully made, using putty knife for all work. Glazing stops shall be carefully handled and accurately secured in place.

B. Install setting blocks of proper size in sill rabbet, located one quarter of glass width from each corner, but with edge nearest corner not closer than 6-inches from corner, unless otherwise required. Set blocks in thin course of sealant which is acceptable for heel bead use.

C. Provide spacers inside and out, of correct size and spacing to preserve required face clearances, for glass sizes larger than 50 united inches (length plus height). Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width.

D. Provide edge blocking to comply with requirements of referenced glazing standard, except where otherwise required by glass unit manufacturer.

E. Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics.

F. Provide compressible filler rods or equivalent back-up material, as recommended by sealant and glass manufacturers, to prevent sealant from extruding into glass channel weep systems and from adhering to joints back surface as well as to control depth of sealant for optimum performance, unless otherwise indicated.

G. Force sealants into glazing channels to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and channel surfaces.

H. Tool exposed surfaces of sealants to provide a substantial "wash" away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.

I. Glass where secured by glazing stops, shall unless shown on drawings or specified herein, be set in full bed of glazing compound. Then force glazing stop into glazing compound on both sides and struck-off flush.

3.3 PROTECTION AND REPLACEMENT

A. All glass shall be protected against damage. At completion of work, all imperfect glass which cannot be properly cleaned shall be replaced in kind. All broken or cracked glass shall be replaced.

3.4 CLEANING AND WASHING

A. At the completion of construction, this Contractor shall clean and wash all of the glass provided by him, removing all dirt, putty stains, etc., and shall leave the glass perfectly cleaned and polished.

END OF SECTION

DIVISION 9 - FINISHES

SECTION 09250

GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all gypsum board installation work as indicated on the drawings and as specified herein. Work shall include, but not be limited to, the following:

1. Gypsum board on metal framing and furring.

2. Metal wall framing for gypsum board partitions.

1.2 SUBMITTALS

A. Submit in accordance with SECTION 01300- SUBMITTALS.

B. Product Data: Submit for each type of product specified. Include manufacturer's recommended installation instructions.

C. Shop Drawings: Submit drawings including plans, elevations, details of components, and attachments to other units of work.

1.3 QUALITY ASSURANCE

A. Industry Standard: Comply with applicable requirements of GA-216 "Application and Finishing of Gypsum Board" by the Gypsum Association, except where more detailed or more stringent requirements are indicated including the recommendations of the manufacturer, and GA-214, "Recommended Specification: Levels of Gypsum Board Finish" by the Gypsum Association.

1.4 PRODUCT HANDLING

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

PART 2- PRODUCTS

2.1 MATERIALS

A. Gypsum Wallboard: ASTM C 36 "Gypsum Wallboard", 5/8-inch thick, tapered edges, 48-inches wide, Type "X", unless otherwise indicated.

B. Wallboard Fasteners: ASTM C 1002 "Steel Drill Screws for the Application of Gypsum or Metal Plaster Bases", standard bugle head self-drilling, self-tapping corrosive-resistant drywall screws.

C. Non-Load Bearing Studs: ASTM C 645 "Non-Load (Axial) Bearing Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board", studs as indicated on the drawings. Studs shall be rolled formed channel of 20 gauge galvanized steel, ASTM A 653/A 653M "Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process", G60 coating. Provide holes and notches for conduit or electrical wiring.

D. Trim Accessories: Provide cornerbeads, edge trim, etc. complying with ASTM C 1047, and formed of polyvinyl chloride (PVC).

E. Joint Treatment Materials: ASTM C 475; type recommended by wallboard manufacturer for the application indicated, except as otherwise noted. Perforated tape, and joint and topping compound, or "all-purpose" compound.

F. Batt Insulation in Stud Walls: Fiberglass batt, ASTM C 665, Type I, approximately 3-1/2 inch thick unless otherwise indicated to be thinner to match stud size.

PART 3- EXECUTION

3.1 EXAMINATION

A. Examine substrates to which drywall construction attaches or abuts structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 requirements that apply to framing installation.

B. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, accessories, and similar construction as required and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

3.3 INSTALLATION OF STEEL FRAMING FOR WALLS AND PARTITIONS

A. Install runners (tracks) at floors, ceilings, and structural walls where gypsum drywall stud system abuts other construction. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.

B. Installation Tolerances: Install each steel framing and furring member so that fastening surface do not vary more than 1/8 inch from plane of faces of adjacent framing. Align plumb and square.

C. Extend partition framing full height to structural supports. Continue framing over frames for doors and openings to provide support for gypsum board.

D. Install steel studs and furring in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard. For single layer construction: 16 inches on center, except as otherwise indicated.

E. Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flange.

F. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames; install runner track section (for cripple studs) at head and secure to jamb studs.

G. Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings.

3.4 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum board to comply with ASTM C 840, GA-216, and GA-214.

B. Locate exposed end-butt joints as far from center of walls as possible, and stagger not less than 24 inches in alternate courses of board.

C. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible.

D. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

E. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut

ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

F. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

G. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

H. Space fasteners in gypsum boards in accordance with· referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.5 METHODS OF GYPSUM BOARD APPLICATION

A. Single-Layer Application: Install gypsum wallboard as follows: On partitions/walls, apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints. Fasten with screws at 6-inch centers.

B. Single-Layer Fastening Method: Apply gypsum boards to supports by fastening with screws.

3.6 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install corner beads at external corners.

C. Install edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed. Provide type with face flange to receive joint compound.

1. Install "LC" bead where drywall construction is tightly abutted to other construction and back flange can be attached to framing or supporting substrate.

2. Install "L" bead where edge trim can only be installed after gypsum board is installed.

3.7 INSTALLATION OF BATT INSULATION

A. Install batt insulation full height, tightly fit against studs, from floor to the underside of structure unless otherwise indicated.

3.8 FINISHING OF DRYWALL

A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.

B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

D. Accessories at exposed joints, edges, corners, openings, and similar locations shall be taped, floated with joint compound, and sanded to produce surfaces ready for gypsum board finishes.

E. Finish interior gypsum wallboard by applying the following levels of gypsum board finish in accordance with GA-214, GA-216 and ASTM C 840.

1. Level 5: For exposed wall surfaces receiving paints. Where Level 5 gypsum board finish is required, embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories; and apply a thin, uniform skim coat of joint compound over entire surface. For skim coat, use joint compound specified for third coat, or a product specially formulated for this purpose and acceptable to gypsum board manufacturer. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects, tool marks, and ridges and ready for painting.

3.9 PROTECTION

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

END OF SECTION

DIVISION 9 - FINISHES

SECTION 09650

RESILIENT TILE FLOOR

PART 1 - GENERAL

1.1 SUMMARY

A. Provide resilient tile flooring and cove base as scheduled.

1.2 QUALITY ASSURANCE

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

B. It may sometimes be desirable to apply the mastic for the floor tiles the day before the actual laying of the tiles. If the Contractor decides to do so, care must be taken to prevent particles of rubbish to settle on the adhesive and cause a bumpy appearance on the tiles.

C. Floor Finish (Waxing) Requirements: All work to prepare, seal, finish (wax) and buff new flooring shall be accomplished by a professional floor cleaning company with 3 or more years of commercial experience in accomplishing the work as specified herein.

D. At completion of first finished floors, Contractor shall meet with Engineer to review finishing procedures, results of work performed, and corrective action to produce acceptable finish.

1.3 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Manufacturer's Data: Submit manufacturer's technical data and installation instructions for resilient flooring, wax, MVT or pH coatings (as required), and accessories.

C. Test Results: Submit moisture testing result of existing concrete substrate and Contractor confirmation letter that substrate moisture levels will be in compliance with resilient floor manufacturer requirements.

D. Samples: Samples of all flooring, bases, and accessories shall be submitted to the Engineer for color and/or pattern selection.

E. Maintenance Instructions: Submit manufacturer's recommended cleaning and maintenance practices for resilient flooring and accessories.

F. Material Safety Data Sheets (MSDS): Submit MSDS for adhesives, patching and leveling compounds, and sealers.

G. Floor Finish (Waxing) Experience: Submit documentation of floor finish (waxing) company's professional experience in accomplishing the work as specified herein for acceptance by the Engineer. Include contact names, company name, and telephone numbers of individuals who can verify quality of previous work.

1.4 DELIVERY AND STORAGE

A. Materials shall be delivered to the jobsite in original unopened containers marked with grade and manufacturer's brand name. Handle and store materials carefully.

PART 2- PRODUCTS

2.1 MATERIALS

A. Vinyl composition tile shall be 12-inches x 12-inches x 1/8-inch thick, conforming to ASTM F 1066, Composition 1 (non-asbestos formulated), Class 2 (through pattern tile), marbleized design with a smooth wearing surface, factory waxed with a minimum light reflectance of 30 percent. Provide Armstrong Commercial Standard Excelon Vinyl Composition Tile Imperial Texture, Congoleum Commercial Floor Tile Alternatives and Choices, or approved equal.

B. Resilient base shall be rubber or vinyl, 4-inches high, top-set cove and straight carpet type, 1/8-inch thick, with a smooth exposed surface and textured bonding surface on its unexposed face. The rubber material shall be free from offensive odor and its color shall be uniform throughout the thickness of the base. Provide Manington Commercial Burke Rubber Cove Base, Johnsonite, Roppe, or approved equal.

C. Flooring Adhesives shall be brush-on, roll-on, or trowel-on water-resistant type, as recommended by the manufacturer for the specific materials used. Material shall be cream colored, latex-resin formula that dries to a clear film. Adhesives shall be solvent free with zero VOC content, low odor, no ammonia and non- flammable in wet state. Do not use adhesive not intended for its purpose. Provide material equal to Henry 430 Tile Adhesive, clear thin spread or approved equal.

D. Base adhesive shall be acrylic latex water-resistant type, as recommended by the manufacturer for the specific materials used. Material shall be white, solvent free with zero VOC content, low odor, no ammonia and non-flammable in wet state. Do not use adhesive not intended for its purpose. Provide material equal to Henry 595 White Acrylic Cove Base Adhesive, Acrylic Latex Bright White Color or approved equal.

E. Edging:

1. Transitions from resilient tile to substrate shall be beveled vinyl strip, one-inch wide, same thickness as tile.

2. Transitions from carpet to resilient tile shall be vinyl carpet to tile adaptor.

3. Metal edge strips shall not be used.

F. Patching and leveling compounds shall be latex-modified, Portland cement based formulation unless otherwise required by the flooring manufacturer for the applications indicated. Gypsum based compounds shall not be used.

G. Floor Sealers: Provide one of the following by the same manufacturer as the floor finish (wax):

1. Armstrong S-480 Polish

2. Betco Floor Sealer

3. Hillyard Seal 341 Sealer

4. SC Johnsons Over and Under Sealer

H. Floor Finish or wax): Provide one of the following by the same manufacturer as the sealer:

1. Armstrong S-480 Polish

2. Betco Hybrid 25

3. Hillyard North Star

4. SC Johnsons Vectra

PART 3- EXECUTION

3.1 EXAMINATION

A. The Installer shall examine substrates where resilient tile flooring will be installed for compliance with the flooring manufacturer's requirements. Installation shall not proceed until unsatisfactory conditions have been corrected. Proceeding with installation will indicate acceptance of the substrate conditions by the Installer.

B. Review asbestos reports under SECTION 01715 - EXISTING CONDITIONS-ASBESTOS/LEAD/HAZARDOUS MATERIAL SURVEY and do not disturb or make friable any existing asbestos-containing flooring, base, or adhesive/mastic. When in doubt assume material is asbestos-containing and take samples for testing by the Contractor.

3.2 PREPARATION OF SUBFLOORS

A. General: Comply with the flooring material manufacturer's installation instructions for the preparation of substrates to receive resilient flooring.

B. Unless otherwise required by the flooring manufacturer, the subfloor shall be broomed, damp mopped and scrubbed until it is free from dust, dirt, grease or other foreign material. It shall also be scraped to make the surface smooth and level.

C. The concrete subfloor shall be free of materials that may interfere with adhesive bond and shall be clean, dry and smooth before tiles are laid. Defects such as ridges, holes, cracks and depressions shall be corrected and filled with patching/leveling compound approved by the manufacturer.

D. Moisture Testing: Moisture Testing shall be performed to determine suitability of concrete slab to receive flooring and comply with 90% RH per ASTM F2170 and ASTM F1869 6 lbs MVER.

1. Calcium Chloride Testing: For all substrate types, ≤ 3 lbs / 1000 sf / 24 hrs maximum.

2. Relative Humidity Testing: 75% maximum.

E. Alkalinity: For cementitious substrates, surface alkalinity of pH 8 minimum to 9 maximum.

F. If testing indicates unacceptable levels of MVT and pH, install each Resilient Manufacturer's approved MVT or pH coatings confirming to flooring manufacturer's requirement, which is capable of reducing MVT or pH, or both to acceptable levels at no cost to the State.

G. If floor tile is laid on defective subfloors, such tile shall be removed and replaced at the Contractor's expense.

3.3 PROJECT CONDITIONS

A. Flooring materials and the spaces to receive flooring materials shall be conditioned in accordance with the flooring manufacturer's recommendation and instructions.

B. Provide adequate ventilation to remove moisture and fumes from the areas where floor tiles are being installed.

C. Where new flooring is scheduled to be installed over existing resilient flooring the Contractor shall conform to the following:

1. Contractor shall replace broken tiles, reset loose tiles and fill voids and depressions to form a solid, level and smooth substrate for the new tiles.

2. The sub-floor shall be broom dusted, wet mopped and scrubbed until it is free from dust, dirt, grease or other foreign materials.

3. Existing flooring shall have all wax stripped to a clean surface.

3.4 INSTALLATION OF MATERIALS

A. See Schedules for locations and types of flooring required. Flooring and cove base shall continue, respectively, under and behind removable and/or portable cabinets, cases, etc. Flooring shall continue into closets where the floor of the closets and adjacent floor are at the same level. Installation shall not begin until the work of other trades, including painting, has been completed.

B. All work shall be done by experienced tradesmen in strict accordance with the recommended specifications of the respective manufacturer. Where not contrary to the manufacturer's recommendations, flooring adhesive shall be applied with a notched trowel in a thin and even coat. Tiles shall be laid with tight joints in true alignment both ways. They shall be cut to fit accurately at joining with other materials and at vertical surfaces. The under side of the tiles shall be heated if necessary to obtain satisfactory bond to the subfloor.

C. Tiles shall be laid symmetrically about the center lines of the room in both directions, starting at the center of the room and working toward the wall so that border tiles shall not be less than half the width of the field tiles. Grain shall be reversed in alternate tiles. Metal edging shall be installed at all marginal edges of flooring not stopped by raised thresholds or other vertical surfaces. When tiles are installed over existing tiles, joints shall be offset over existing tile joints.

D. Resilient base shall be applied onto thoroughly-dried walls with base adhesive only. Because of the thermoplastic character of base, care shall be taken not to stretch it during installation since it will shrink and leave a gap at joints. The top and bottom edges shall be in firm contact with the wall and floor. Pre-molded interior and exterior corners shall be used unless otherwise approved by the Engineer. If corners are formed on the job, the wrap around from the corner shall be not less than 12-inches long. Otherwise, the resilient base shall be continuous around the corners. Installation of resilient base at carpet shall occur only after installation of the carpet.

E. Adjust height of electrical floor receptacles to be flush with new flooring.

F. Remove obstructions such as pipe stub-ups that are no longer required. Verify with Engineer before removal.

G. Undercut doors if the additional height of flooring impairs proper operation of the door.

3.5 CLEANING AND PROTECTION

A. Begin initial maintenance only after the adhesive has been allowed to dry fully. At least 48 hours is usually required. During this period there should be no furniture or other heavy traffic movement on the floor. Do not wash the tile during this period since any moisture or cleaning liquid allowed to get under the tile while bonding can affect the tackiness of the adhesive. This could lead to the unnecessary expense of replacement.

B. All cleaning, sealing, and waxing operations shall be conducted by an approved professional cleaning company as specified.

C. The Contractor shall prepare the new Vinyl Composite Tile (VCT) floors as follows:

1. Clean floors: Dust mop entire floor area and remove gum, tar, glue, adhesive, etc. from the floor.

2. Sweep and pick up rubbish using a dustpan and broom.

3. Apply properly diluted neutral cleaner onto new VCT and clean the floor tiles using a floor machine with a blue pad or an Auto scrubber. Remove all soil, manufacturer's factory coating if coating exists, and residue to assure proper performance of the finish.

4. If using a floor machine, vacuum up cleaning solution using a wet and dry vacuum. Note: Auto scrubber will pick up material after scrubbing.

5. Rinse floor by mopping entire floor area twice with clean mop and fresh water and allow floor to thoroughly dry at least one hour before applying floor sealer.

6. Apply Sealer: Use clean mop buckets and new (at start of project) clean mop heads for applying floor sealer. Replace mop heads as necessary as work progresses. Pour floor Sealer into lined mop bucket. Dip clean mop into sealer bucket. Place mop in the wringer and tamp lightly. The mop should be full of sealer but not dripping. Apply coats of sealer to floor using a side to side (figure eight) movement. Overlap the strokes of the mop head. Turn mop head often and redip in sealer before the mop head dries out and streaks the floor. Avoid splashing sealer on the floor. Apply coat of sealer evenly and cover all areas. Allow a minimum of 45 minutes drying between coats. Apply a total of 2 coats of sealer.

7. Apply Floor Finish (Wax): Pour floor finish wax into lined mop bucket. Dip clean mop head into the floor finish wax bucket. Place mop in the wringer and tamp lightly. The mop should be full of wax but not dripping. Apply coats of floor finish wax to floor using a side to side (figure eight) movement. Overlap the strokes of the mop head. Turn mop head often and redip in the floor finish wax before the mop head dries out and streaks the floor. Avoid splashing floor finish wax onto the floor. Apply coat of floor finish wax evenly and cover all areas. Allow a minimum of 45 minutes drying time between coats. Apply a total of 4 coats of floor finish wax. Prior experience has shown that 4 coats of approved wax results in a finish that is acceptable to the State. The Engineer and school representative will inspect the first floors finished by the Contractor. Contractor shall alter procedures as required to produce an acceptable finish, including additional coats of wax if finish is unacceptable.

8. Allow floor finish wax to cure 24 hours before buffing and moving furnishings and equipment back into room.

9. Buff Floors: Dust mop entire floor area, wet mop with plain water to pick up any dirt, etc. and let floor dry before buffing. Using specified hi-speed burnisher with white polishing pad, buff entire floor to a smooth, shiny finish. Dust mop entire floor to remove any dust or residue left behind after buffing. The floor's appearance shall be clean and acceptable to the Engineer.

D. Contractor shall submit its proposed sealer and wax products for review and approval by the Engineer and the DAGS Custodial Services Representative or designee prior to start of work.

E. Contractor shall limit traffic on waxed floors until acceptance by DAGS Custodial Services or designee.

F. Clean bases but don't polish them.

END OF SECTION

SECTION 09680

CARPET

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

A. Provide all carpet as indicated on the drawings and specifies herein including the following:

1. Broadloom Carpet.

2. Resilient base.

3. Installation Accessories.

1.3 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS

B. Product Data - Submit for project records only: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation methods.

C. Shop Drawings: Submit shop drawings including plans and details showing the following:

1. Columns, doorways, walls or partitions, built-in cabinets, etc.

2. Type of subfloor.

3. Type of installation.

4. Type, color, and location of edge, transitions, and other accessory strips.

5. Transition details to other flooring materials.

D. Samples: Submit samples for each carpet(s) products proposed for use and each color and texture required. Label each sample with manufacturer’s name, material description, color, pattern, and designation indicated on Drawings.

1. Broadloom Carpet: Full-size sample.

2. Exposed Edge stripping and Accessory: Twelve-inch long samples.

3. Resilient Base: Twelve-inch long samples.

E. Maintenance Data - Submit for project records only: Include methods for maintaining carpet, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule, and precautions for cleaning materials and methods that could be detrimental to carpet.

F. Substitutions: Comply with the General Conditions provisions, except that Contractors will not be required to "pre-approve" their products before bid, but can furnish other manufacturers' products that are comparable in quality to named products in paragraph entitled "ACCEPTABLE PRODUCTS AND MANUFACTURERS" hereinbelow.

G. Certificate: Submit certificate stating that the concrete slab was tested for moisture and alkalinity and that the flooring manufacturer's requirements have been met.

H. Warranty: Submit written warranty as specified in paragraph entitled "WARRANTY" hereinbelow.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who can demonstrate compliance with the Floor Covering Installation Board's certification program requirements.

B. Product Options: Products and manufacturers named in Part 2 establish requirements for product quality in terms of appearance, construction, and performance. Other manufacturers' products comparable in quality to named products and complying with requirements may be considered.

C. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

D. Indoor Air Quality (IAQ): Comply with the Carpet and Rug Institute's CRI test program ASTM D 5116. Include lAC Certification and label for carpet and installation adhesives.

E. ADA Compliance: Meet ADA requirements for carpets, heights, changes in level and other items.

F. Recycled Materials: CRI Green Label for recycling.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with Carpet and Rug Institutes CRI 104, Section 5, "Storage and Handling".

1.6 PROJECT CONDITIONS

A. General: Comply with CRI 104, Section 7, "Site Conditions; Temperature and Humidity".

B. Environmental Limitations: Do not install carpet until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

C. Surface Condition: Do not install carpet over concrete slabs have being tested and concrete slabs have pH range recommended by carpet manufacturer.

1.7 WARRANTY

A. Contractor's Warranty: Submit written warranty from the Carpet laying Contractor and countersigned by the Contractor, covering all materials and workmanship for a period of one year from the project acceptance date. The warranty shall cover the correction by the Contractor of any defects in materials or workmanship which occur during the period of warranty by the repairing or replacing with new material at his own expense.

B. Manufacturer's Warranty: Submit written 15 year non-pro-rated warranty, signed by carpet manufacturer agreeing to replace carpet that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, resiliency loss, and delamination. The Surety shall not be held liable beyond 2 years from the project acceptance date.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS AND MANUFACTURERS

A. Provide products of manufacturer listed hereinbelow or approved equal products of Mohawk Industries, Masland, or Lees Carpets:

2.2 CARPET MATERIALS

A. Broadloom Carpet:

1. Product: Commercial Nylon Broadloom Carpet on Weldlock backing.
   Collection: Mohawk Group – Restorative Insights
2. Style: Collective Structure, BC638
3. Color: 575 Twilight
4. Fiber Type: Colorstrand SD Nylon (Nylon 6, Nylon 6, 6, Titanium Dioxide).

5. Surface Texture: Textured Patterned Cut & Loop
6. Gauge: 1/12
7. Tufted Pile Weight: 36.0 oz. per sq. yd.
8. Construction: Tufted.
9. Finished Pile Thickness: 0.200”
10. Stitches Per Inch: 10.0
11. Dye Method: Solution dyed.
12. Density: 7,155
13. Primary Backing: Weldlock
14. Size: 12‘ width
15. Pattern Repeat: 36” (W) x 72” (L)
16. Installation: Glue Down. Manufacturer recommended Mohawk NuBroadlok Adhesive Lifetime Limited Unibond, or equal.

B. Performance Requirements:

1. Flammability Radiant Panel Test: NFPA Class 1, per ASTM E 648.

2. NBS Smoke: Less than 450 Flaming Mode per NFPA 258, ASTM E 662.

3. Static: 3.5 kv maximum not to exceed per American Association of Textile Chemist and Colorists (AATCC) AATCC-134 Step method.

4. Noise Reduction Coefficient (NRC): Standard with the Manufacturer per ASTM C 423.

5. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria; not less than one-mm halo of inhibition for gram-negative bacteria; no fungal growth; per AATCC-174.

6. Resistance to Insects: Comply with AATCC-24.

7. Colorfastness to Crocking: Not less than 4, wet and dry, per AATCC-165.

8. Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) per AATCC-16.

9. Stain Resistance: Not less than 8, per AATCC-175

10. Declare Label: Declared Red List Free.

2.3 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided by or recommended by carpet manufacturer.

B. Adhesives: Carpet Manufacturer's pressure sensitive, non solvent based, water resistant, mildew-resistant, non-staining type to suit products and subfloor conditions that complies with flammability requirements for installed carpet. VOC emissions shall meet the California Department of Public Health (CDPH) Standard Method v1.2, 2017 requirements. Adhesive shall comply with the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1168.

C. Metal Edge Strips: Extruded aluminum with mill finish or width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

D. Edge Guard: Vinyl or rubber type reducer strips and transition strip where shown or required, as manufactured by Johnson Rubber Co., Mercer Plastic Co., Textile Rubber Co., Roppe, or approved equal products.

E. Resilient Base: Resilient base shown shall conform to ASTM F1861 ad shall be rubber,4-inches high, top-set type, 1/8" thick, Style A straight type, with a smooth exposed surface and textured bonding surface on it's unexposed face. The rubber material shall be free from offensive odor and its color shall be uniform throughout the thickness of the base. Color shown within drawings.

F. Base Adhesive: Base adhesive shall be acrylic latex water-resistant type, as recommended by the manufacturer for the specific materials used. Do not use adhesive not intended for its purpose.

PART 3- EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance. Verify that substrates and conditions are satisfactory for carpet installation and do not proceed with installation until conditions have been corrected.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
   1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond, moisture and alkalinity tests recommended by carpet manufacturer. Where testing shows the moisture content or alkalinity is not within the floor manufacturer's requirements, provide remedial work, including floor sealing system or other means, to assure compliance with carpet manufacturer.

   2. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates to receive carpets in accordance with CRI 104: Standard for Installation of Commercial Carpet, Section 6.2, "Site Conditions; Floor Preparation", and carpet manufacturer's written installation instructions for preparing substrates indicated to receive carpet installation. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

3.3 INSTALLATION

A. Layout:

1. Comply with carpet manufacturer's written recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under the door in closed position.

2. Lay adjoining sections in the same direction whenever possible.

3. Follow location of seams when noted on the drawings.

B. Direct-Glue-Down Installation: Comply with CRI 104, Section 8, "Direct Glue- Down Installation".

C. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.

D. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

E. Unless otherwise noted, install pattern parallel to walls and borders.

F. Installation of base shall be after installation of carpet.

G. Resilient Base: Resilient base shall be applied onto thoroughly dried wall with adhesive recommended by manufacturer. Base shall be continuous around corners, 12-inch minimum from corners.

3.4 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet:

1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.

2. Remove yarns that protrude from carpet surface.

3. Vacuum carpet using commercial machine with face-beater element.

4. Protect installed carpet to comply with CRI 104, Section 15, "Protection of Indoor Installations".

5. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

6. Remove excess or visible adhesive and resecure of any delaminating resilient wall base.

END OF SECTION

SECTION 09902

REPAINTING

PART 1 - GENERAL

1.1. GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 SUMMARY

A. Surface preparation and field application of paints and coatings to new and existing surfaces. Areas (Surfaces) to be Painted:

1. Interior Surfaces to be Painted: All existing interior painted surfaces disturbed by removal and replacement of wall base, and new surfaces shall be painted unless otherwise indicated on the plans and/or specifically deleted in these specifications. Interior surfaces to be painted shall be those surfaces not exposed to weather in an area enclosed by 4 walls.

Also, a surface shall be considered an interior surface and painted as such whenever the color is that of the existing interior color. Extent of treatment for special items is as follows:

a. Interior surfaces inclusive of wall bases / trims, etc.

b. Interior surfaces shall not be treated unless specifically noted otherwise.

c. Gypsum board wall partitions at wall base.

d. Interior wall bases following existing wall base removal.

e. PVC pipes, G.l. Pipes and conduits, and similar appurtenances.

f. Stain wood to match existing adjacent finish where indicated or required.

2. Surfaces Not to be Painted:

a. Metal surfaces of anodized aluminum, copper and similar finished metal surfaces shall not require painting unless previously painted or otherwise scheduled.

b. Factory/Pre-finished Items: When factory finishing or installer-finishing is specified, such items shall not require painting unless otherwise scheduled.

c. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories, or any equipment identification, performance rating, name, or nomenclature plates.

d. Data equipment cable connection.

3. "Paint" as used herein means all coating system materials, including primers, enamels, sealers, stains, varnish, and fillers, and other applied materials whether used as prime, intermediate or finish coats, except as specifically noted herein.

1.3 RELATED SECTIONS

A. Division 2, Selective Demolition.

1.4 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. PCA (Portland Cement Association) - Painting Concrete.

D. PCDA (Painting and Decorating Contractors of America - Painting –Architectural Specification Manual.

E. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

1.5 DEFINITIONS

A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.6 SUBMITTALS

A. Submit in accordance with SECTION 01300 - 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.

a. For products with premixed colors, provide manufacturer's standard color chips for selection by Engineer.

2. 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.

C. Certifications: Provide a letter certifying paints and coatings are free of asbestos, lead, zinc-chromate, strontium chromate, cadmium, mercury, crystalline silica (except for chalkboard resurfacing paint) and other EPA regulated and hazard 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 indicated in the schedule.

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- inches x 11-inches 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 paragraph entitled "EXAMINATION" hereinbelow.

H. Provide a Comprehensive Spray Plan when airless spraying is proposed.

I. Qualification Data: For Applicator.

J. Delivery Receipts: Provide 3 copies of the delivery receipt, signed by the user's representative, attesting to delivery of extra paint as required under paragraph entitled "EXTRA MATERIAL" hereinbelow.

K. Guaranty: Submit written guaranty as specified in paragraph entitled "GUARANTY" hereinbelow.

1.7 REGULATORY REQUIREMENTS

A. Comply with State OSHL (Occupancy Safety and Health Law) and pollution controls regulations of the State Department of Health and EPA.

1.08 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.

C. Field Samples (Mockups): Provide a full-coat field sample panel for each type of coating and substrate scheduled in Part 3. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
   1. Engineer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.

      a. Wall Surfaces: Provide samples at least 4-feet long by 8-feet high unless indicated otherwise on drawings.

      b. Small Areas and Items: Engineer will designate items or areas required.

   2. Apply benchmark samples, according to requirements for the completed Work. Provide temporary lighting levels similar to permanent lighting conditions for Engineer‘s evaluation.

      a. After finishes are accepted, Engineer will use the room or surface to evaluate coating systems of a similar nature.

D. Comprehensive Spray Plan for Airless Spraying: Where airless spraying is proposed, provide a comprehensive spray plan to include:
   1. Documentation that the individual spray applicator(s) on the project have completed an approved spray applicator certification program conducted by the Painting Industry of Hawaii. The certification program shall include material and equipment selection, use and maintenance, hands-on application and safety training.

   2. Proposed overspray protection methods.

   3. Paint Manufacturer's spray application instructions and recommendations for products to be used.

   4. Proposed schedule to shut-down or covering existing air-conditioning and ventilation equipment and existing air intake, return and diffuser grilles.

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

1.9 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.

2. Flammable Materials: 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.

C. All rejected materials shall be removed from the job site immediately.

1.10 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 construction 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 to 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, and other similar items from the site at the end of each day.

F. Where airless spraying is used, ensure that protective enclosures are erected to prevent the escape of overspray from the work area.

G. 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 proration or use of "used" products will be permitted.

1. For painting and spray painting operation, assume that cars will not be temporarily relocated from parking areas during the painting operations.

2. Paint overspray shall not carry more than 5 lineal feet beyond the building eave line nor within 10 lineal feet of pedestrians or property and surfaces not scheduled to be painted. Immediately cease spray painting when overspray carries beyond these specified limits. Do not continue until protective barriers are erected to properly contain the overspray and damages caused by the overspray have been corrected.

3. The Contractor shall be assessed $1,000.00 for each incidence of property or personal damage caused by overspray until such time that a satisfactory settlement has been agreed upon by the damaged party and corrective action has been completed. All corrective action shall be settled within 24 hours from the time the damage is discovered. Should the Contractor fail to take corrective action in a timely and expeditious manner, the Engineer shall contact the Contractor's Insurance company to seek resolution on the matter.

H. Other Incidental Work to be Performed by Contractor:

1. Unless otherwise specified, the Contractor is responsible for moving about all furniture and equipment to provide himself with sufficient working space.

   The Contractor shall protect these items and make good any damage to them at no cost to the State. After the painting of the room is completed, the Contractor shall replace all furniture and equipment to their original locations.

2. The Contractor shall carefully remove and neatly store away or properly protect in-place curtains, blinds and miscellaneous items. Removed items shall be reinstalled at the completion of the work.

3. All items on shelving and in cabinets to be painted will be removed by the user personnel prior to painting work.

I. Trim back shrubbery and plants shall 6-inches from surfaces to be painted.

J. Areas inaccessible to Normal Painting: The Contractor shall remove and reinstall in order to paint complete.

K. Remove all existing signages and reinstall after completion of painting.

1.11 COMPATIBILITY OF PAINTING SYSTEMS AND SUBSTRATES

A. The Contractor shall ensure that painting systems specified are compatible with existing painted surfaces. Alkyd paints shall not be applied over existing latex coating. Alkyd paints shall not be used over cementitious surfaces. Latex paints shall not be applied directly over alkyd paints without proper conditioner and approval by the Engineer.

B. Field Tests for Alkyd or Latex Paints: The Contractor shall perform the following field tests for compatibility of substrates to new paint systems prior to ordering paint:

1. Latex films will dissolve when wiped with rubbing alcohol; alkyd films will not.

2. When sanded, latex films will "clog" sandpaper; alkyd films will sand clean.

3. Alkyds will soften after applying a 10 percent solution of Drano in water; latex films will not soften.

4. Alkyds will burn when exposed to a flame; latex film will not burn.

5. Paints which do not respond to 2 or more of these tests are probably epoxy, urethane, or other type of coating.

6. Provide a packaged swab test in accordance with the package directions.

7. Existing paint identified or suspect of having lead-containing paint shall be tested in a manner that does not produce airborne or uncontrolled lead debris.

C. Should there by any discrepancies between the specified Schedule of Finishes and the existing paint systems, the Contractor shall notify the Engineer in writing of any incompatible systems specified and submit a revised Schedule of Finishes for approval when necessary. With the approval of the revised Schedule of Finishes, the Contractor shall make any corrections and/or revisions necessary to resolve the discrepancies and/or inconsistencies. The Contractor shall not proceed with any painting systems that are incompatible, although specified otherwise, until all incompatible conditions detrimental for the proper application and performance of the painting systems have been corrected. The failures due to the application of the incompatible paint systems shall be corrected at no additional cost to the State. Proceeding with the work shall imply acceptance of the specified

Schedule of Finishes and the compatibility with the existing painted surfaces by the Contractor.

1.12 MINIMUM PAINTING WORK

A. Unless noted otherwise, minimum interior painting work area shall be the complete inside surfaces of one room.

1.13 GUARANTY

A. Contractor shall provide a 2 year guaranty that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship.

1.14 EXTRA MATERIAL

A. Provide extra paint in each of the different colors, types and surface textures of interior paint to the user upon completion of the project. Paint shall be in unopened one gallon containers and labeled with color, type, texture, room locations, and date in addition to manufacturer's label.
   1. Provide 1 gallon of each color for paint used over large areas, such as the building interior office space.

   2. Provide one gallon of each color for all other areas.

PART 2- PRODUCTS

2.1 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, patching materials, 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. 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 color schedule 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.

C. EPA Regulated and Hazard Materials: Do not use paint or paint products containing asbestos, lead, mercury, zinc chromates, strontium-chromate, cadmium mercury, crystalline silica (except for chalkboard resurfacing paint) or the EPA regulated or hazard materials.

D. Mildew and Water Stains: Provide spot priming of product equal to Bulls Eye Odorless or Cover Stain, as required for existing stains.

E. Interior Paints: Provide low odor solvent free paints, semi-gloss unless scheduled otherwise.
   1. Interior Acrylic Semi-Gloss Paint complete with tint bases to color as scheduled or to match existing including dark and specialty colors (not limited to green, blue, red, yellow, and brown), products must meet or exceed the following:

      a. Acrylic semi-gloss, interior finish for wood, masonry, metal, plaster, and drywall.

      b. Semi-gloss/satin finish: Gloss at 60 degrees 55-70.

      c. Resin: 100 percent acrylic.

      d. Pigment: Minimum 90 percent titanium dioxide.

      e. Viscosity: 90- 100 K.U.

      f. Percent Solids by Volume: 34 percent minimum.

      g. Weight per Gallon: 10.3 pounds minimum.

      h. To be as scheduled, except Sherwin Williams Metalatex Semi-Gloss with accepted deviations of above performance requirements is accepted as an equal.

F. Primers: Provide universal type that is capable of being used over existing alkyd and latex substrates or primers that are specifically compatible with each existing substrate.
   1. Typical Primer/Sealer including tinting to match color of finish paint:

      a. Primer, interior/exterior, oil base, all purpose for wood, concrete, clean galvanized metal, aluminum, plaster, drywall, and hardboard.

      b. Undercoat for gloss latex or alkyd enamels.

      c. Able to sand and recoat in one hour.

      d. Virtually VOC free product.

      e. Tinting: Light to mid-tone.

      f. Stain killer.

      g. To be Zinsser Cover Stain, Sherwin Williams PrepRite Quick Seal Y24W980, or equal.

   2. Odorless Interior Primer/Sealer including tinting to match color of finish paint.

a. Primer, interior, oil base, for wood, plaster, drywall, hardboard, paneling, stucco, and metal.

b. Odorless.

c. Undercoat for gloss latex or alkyd enamels.

d. Able to sand and recoat in 2 hours.

e. Virtually VOC free product.

f. Tinting: Light to mid-tone.

g. Stain killer.

h. To be Zinsser Bulls Eye Odorless, Sherwin Williams PrepRite ProBiock Odorless B49W20, or equal.

G. Paints shall be as manufactured by Ace, Benjamin Moore, Cabot's, Carboline, Dupont, Dutch Boy, Fine Line Paint Corp., ICI Ameritone, ICI Decratrend, ICI Devoe, ICI Dulux, ICI Fuller-O'Brien, ICI Glidden, ICI Sinclair, Martin Senour, Olympic Stain, Pervo, Pittsburg, Porter Inti., Pratt & Lambert, Rust-Oleum, Sherwin-Williams, Smiland (Styletone), Spectra-Tone, Thoro Systems, Tnemec, United Paint and Coatings, Zinsser, or approved equal.

H. Except for metal primers all paint shall contain the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint. Contractor shall pre-mix mildewcide into all interior and exterior paints and primers except as specified otherwise. Mercurial fungicide shall not be used.

2.2 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.

PART 3 -EXECUTION

3.1 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, are within acceptable alkalinity and dried to meet paint manufacturer's recommendations.

      b. 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) Plaster and Gypsum Wallboard: 12 percent.

         2) Masonry, Concrete and Concrete masonry units: 12 percent.

         3) Interior Wood: 15 percent, measured in accordance with ASTM D 2016.

      c. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.

3.2 COORDINATION OF WORK

A. 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.

B. Notify Engineer about anticipated problems when using the materials specified over substrates primed by others.

3.3 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 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. 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 paragraph entitled "Mildew Removal Preparation" hereinbelow.

   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. Remove all loose or cracked caulkings.

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.

   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). Reseal all joints where loose or cracked caulkings were removed. 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. Cementitious Materials: Seal all cracks hairline to 1/8-inch in width with concrete patching compound. All cracks over 1/8-inch in width and holes 1/4- inch diameter or greater shall be sealed with a latex modified or epoxy modified reinforced patching system before paint application. All patching shall be done in accordance with the patching manufacturer's recommendations and instructions. All patching shall be done in accordance with the manufacturer's recommendations and instructions. Apply texture, if required, to match existing textured surfaces.

   a. Concrete Floors: Remove contamination, efflorescence, acid etch, neutralize and rinse floors with clean water. Verify required acid-alkalai balance is achieved. Allow to dry.

6. 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.

7. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

8. 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.

9. 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.

10. Aluminum Surfaces Scheduled for Paint Finish:

a. Remove surface contamination by steam or high pressure wash.

b. Remove oxidation with acid etch and solvent washing.

c. Apply etching primer immediately following cleaning.

11. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish:

a. Remove foreign particles to permit adhesion of finishing material.

b. Apply compatible sealer or primer.

12. Insulated Coverings: Remove dirt, grease, and oil from covering material.

13. Copper Surfaces Scheduled for Paint Finish:

a. Remove contamination by steam, high pressure wash, or solvent clean.

b. Apply vinyl etch primer immediately following cleaning.

14. Copper Surfaces Scheduled for Natural Oxidized Finish:

a. Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid.

b. Rub on repeatedly for required effect. Once attained, rinse surface with clear water and allow to dry.

D. Mildew Removal Preparation:

1. Remove mildew and sterilize the surface to be painted using one of the following methods:

a. Apply a commercial mildew remover applied per manufacturer's instructions.

2. Following treatment, clean the surface with potable water and allow to thoroughly dry before priming, painting or applying sealing and caulking compounds.

E. 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.

4. 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, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.4 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, covers, 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. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

7. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.

8. Sand lightly between each succeeding enamel or varnish coat.

9. Ensure primers are top coated within the times required by the paint manufacturers. Top coats not applied within the recoating window may be rejected.

10. Exterior wood decking treated with oil-borne preservatives shall be primed with oil base primer prior to painting.

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.

4. Be aware of the requirements and restrictions of paragraph entitled "PROJECT CONDITIONS" hereinabove on spray painting.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

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.

3. Spray Equipment: Use airless spray equipment with orifice size 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. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

F. Mechanical items to be painted include, but are not limited to, the following:

1. Uninsulated metal piping.

2. Uninsulated plastic piping.

3. Pipe hangers and supports.

4. Tanks that do not have factory-applied final finishes.

5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.

6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.

7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

G. Electrical items to be painted include, but are not limited to, the following:

1. Switchgear.

2. Panelboards.

3. Electrical equipment that is indicated to have a factory-primed finish for field painting.

H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

I. 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.

J. 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.

K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

2. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.5 FIELD QUALITY CONTROL TESTING

A. Inspection and Approvals: Unless directed otherwise by the Engineer, 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 Engineer one day in advance when completing any phase of work. Provide access to areas to be inspected.

B. 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.

C. Right of Rejection: Non conforming work will be rejected by the Engineer Remove rejected material from the job site immediately. Redo rejected work at no cost to the State.

1. Where the required paint thickness is deficient, provide additional coats to the affected surface(s) to meet the required paint thickness.

3.6 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.7 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 Engineer.

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.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.8 SCHEDULE OF FINISHES

A. The Schedule of Finishes is made for the convenience of the Contractor and indicates the types and quality of finishes to be applied to the surfaces. Provide additional systems for surfaces to be painted not listed hereinafter.

B. The Schedule or Finishes is as follows: Provide prime coat and one finish coat unless otherwise noted/scheduled or specified herein.

1. Provide primer and 2 finish coats over existing paint surfaces in poor condition; where color of existing paint is darker than new paint color; where one finish coat will not hide differences in color and shows streaking; where existing paint is peeling and flaking; and where there is rust and scaling on ferrous metal surfaces.

2. Provide primer and 2 finish coats on all new surfaces.

3. Paint with appropriate primer for the material being painted as per the manufacturer's recommendations.

4. Paint with appropriate finish coats for material being painted to match existing sheen and color unless otherwise noted/scheduled or directed by the Engineer.

5. Touch up paint with appropriate paint where noted/scheduled or directed by the Engineer

C. Any existing painted surface not specifically noted in the finish schedule shall be finished to match adjoining work.

D. Provide stain and finish coat to match existing for re-finishing and/or repainting of existing stained doors, cabinets, etc. where indicated or where required.

END OF SECTION

DIVISION 12 – FURNISHINGS

SECTION 12700

SYSTEMS FURNITURE

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS
As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

A. Provide all scheduled furniture and furnishings as indicated on the drawings and specifies herein including the following:

1. Powered Modular Workstations.

1.3 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data - Submit each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and published product literature. Include installation methods.

C. Shop Drawings: Submit shop drawings including plans and details showing the following:

1. Relationship between each furniture item and Sizes of each furniture item.

2. Anchorage conditions.

3. Type of installation.

4. All furniture and furnishings parts and components including but not limited to, panels, trims, supports, equipment, connectors, mounts, brackets, coverplates, hardware, and all associated accessories.

5. Type, color, Finish surfaces, material types, edges, transitions, and other accessories.

6. Electrical and Telecom raceway, panels, interface requirements for facilities power and telecom interface.

D. Samples: Submit samples for each color and texture required for furniture(s) products proposed for. Label each sample with manufacturer’s name, material description, color, pattern, and designation indicated on Drawings.

1. Workstation frame finish, profile finish, fabric tackable panel surface, laminates, worksurface finish, edges and trims.

2. Storage file tops and common tops, metal components, seamless edge banding, powder coated drawer and cabinet fronts and doors, lock finishes, pedestal cases, caster color.

3. Bookcase storage panel bottoms, false backs, hinged doors, tops, edge banding, shelves, glides, drawers.

4. Casegoods tops and common tops, metal components, seamless edge banding, powder coated drawer and cabinet fronts and doors, lock finishes, pedestal cases, caster color, worksurfaces, tackboards, and metal parts.

E. Maintenance Data - Submit for project records only: Include methods for maintaining furniture, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule, and precautions for cleaning materials and methods that could be detrimental to material surfaces.

F. Substitutions: Comply with the General Interim Conditions provisions, except that Contractors will not be required to "pre-approve" their products before bid, but can furnish other manufacturers' products that are comparable in quality to named products in paragraph entitled "PRODUCTS" hereinbelow.

G. Warranty: Submit written warranty as specified in paragraph entitled "WARRANTY" hereinbelow.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: An experienced manufacturer who can demonstrate quality manufacturing methods, shipping to Hawaii experience, and product placement within the State of Hawaii related to specified furniture requirements.

B. Installer Qualifications: An experienced installer who can demonstrate compliance with powered modular furniture installations and program requirements, multiple product installations within the past five years, and list of product installations within the State of Hawaii.

C. Product Options: Products and manufacturers named in Part 2 establish requirements for product quality in terms of appearance, construction, and performance. Other manufacturers' products comparable in quality to named products and complying with requirements may be considered.

D. ADA Compliance: Meet ADAAG 2010 requirements for clearances, circulation, knee clearances, heights, changes in level, operable parts, and other items.

E. Recycled Materials: CRI Green Label for recycling.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with and in accordance with Manufacturer's Project specific requirements as fully submitted and successfully reviewed by the Engineer.

1.6 WARRANTY

A. Contractor's Warranty: Submit written warranty from the Furniture Installer and countersigned by the Contractor, covering all materials and workmanship for a period of one year from the project acceptance date. The warranty shall cover the correction by the Contractor of any defects in materials or workmanship which occur during the period of warranty by the repairing or replacing with new material at his own expense.

B. Manufacturer's Warranty:

1. Powered modular workstations: The manufacturer to submit a limited lifetime warranty which includes but not limited to:

   a. 10-year warranty on electrical (non-USB) and A/V accessories.

   b. 5-year warranty on Power Base Receptacles with USB.

   c. 5-year warranty on vertical fabrics, fabrics rated Heavy Duty (A) under the Association of Contract Textile Guidelines.

   d. A product modified under the Tailored Solutions program will have the same warranty period as the standard catalog product that is modified. However, any material modification of the standard catalog product's features, construction, function or aesthetics will have a 1-year warranty.

   e. For warranty terms and conditions refer to Manufacturer's warranty in affect from the project acceptance date.

2. Casegoods, Bookcases, and High-density storage: The manufacturer shall provide a limited lifetime warranty which includes but not limited to:

   a. 12-year warranty on casegood mechanisms (hinges, slides, latches, glides, casters, etc.)

   b. 10-year warranty on electrical (non-USB) and A/V accessories.

   c. For warranty terms and conditions refer to Manufacturer's warranty in affect from the project acceptance date.

PART 2 – PRODUCTS

2.1 FURNITURE

A. Products: Basis of Design for each product type:
   1. As scheduled.

   2. Or preapproved equal.

B. Powered modular workstation:
   1. Materials and Construction:
      a. Panel Frame Construction:

         i. Panel Frame is fully welded 16-gauge and constructed with roll formed steel tubes welded together at the corners, forming a rectangular frame.

         ii. Panel 20-gauge painted steel base rail covers encompass bottom 4" of all panel sides. Slots of base rail covers affix to the tabs at bottom of glide towers and snap into place at top of each glide tower.

         iii. Construction of the frame allows for horizontal routing of power & data at the beltline, below worksurface & base raceway.

         iv. Horizontal tubes are punched to allow vertical routing of cables through each side of the panel frame.

         v. Steel legs are welded to the frame, creating a bottom trough to support the optional power system and cabling pathway when raceway covers are installed.

         vi. A steel base raceway cover conceals a pathway for power and communication cabling.

         vii. Vertical tubes are slotted to allow components to be mounted in 1" (25.4mm) increments.

         viii. Horizontal aligner/light blocks provide support for segmented tiles and block light between them.

         ix. Tiles in Fabric, Painted Metal, may be attached, providing an assembled thickness of 3" (76mm).

      b. Panel Assembly Construction:

         i. All panels have an overall assembled thickness of approximately 3".

         ii. Tiles are removable and monolithic.

         iii. Four top trim options are offered:
            1) Full Profile – made from aluminum finished with powder-coat and provides a rectilinear profile.

iv. Panel assemblies include a powder-coated steel pan/trough attached to the bottom. The trough is used with raceway covers to capture and enclose the power and data cabling in the base, ensuring it does not touch the surface of the floor.

v. Raceway covers can be specified independently for each side of the panel and have up to two electrical or data openings per side. The covers are constructed from powder-coated steel and attach to the bottom of the panel frame with friction fit fasteners.

vi. Leveling glide is positioned at each end of the panel and provides 2.5" (64mm) of vertical adjustment capability.

vii. Panels can be connected in inline 90-degree conditions using combinations of block connectors and trim covers.

c. Tile Construction:

i. All tile types have metal engagement clips or brackets for attachment to panel frame.

ii. Tiles are offered with the following surface options:
1) Fabric: Tackable panels receive an inner core of approximately 1/4" thick hexacomb and fiberglass. Full metal frame on all sides to facilitate panel connection and provide structural rigidity.

2. Finishes:
a. As indicated on Architectural Drawings.

b. Finishes are to be consistent across manufacturer product platforms for consistency, compatibility, availability and longevity.

c. All aluminum and steel show surfaces are powder coated in specified color. Steel slotted verticals of the panels are powder coat painted.

3. Full Panel Frames:
a. Widths: Dimensions as indicated on Architectural Drawings.

b. Heights: 35" – 80", and as indicated on Architectural Drawings.

c. Provide Full Panel Frames with a base raceway, tile to the floor.

d. Provide panels with power: Include pre-wired, factory installed electrical distribution system and inline flexible power connector.

e. Power is available in four locations:

i. Base Raceway (factory installed)

f. Panels have capability to be easily converted in the field from powered to non-powered if necessary, by removing the electrical distribution system.

4. Tiles:
   a. Monolithic applications can be accommodated.

   b. Each tile may be used in any position (top, bottom, mid) on the panel.

   c. Tiles can be removed from the panel in any order during installation or reconfiguration.

   d. Multiple tile configurations can be accommodated on each side of panel.

   e. Concealed aligner light blocks are used in applications with multiple tiles per side of the panel to provide additional rigidity, alignment and light block between individual tiles.

   f. Spanning tiles will be Fabric and span across two panels, or two panels and a 3-way intersection, allowing for a seamless, non-segmented aesthetic.

   g. Tiles can span vertically over a base frame to create a monolithic aesthetic.

   h. All fabric tiles are tackable and have a metal frame for rigidity.

5. Panel Connectors and Trim Covers:
   a. The same universal connectors are used for 2-way, 3-way, and 4-way conditions.

   b. Provide intersections and covers facilitate the connection of panels in inline, 2-way, 3-way and 4-way conditions.

   c. T-Mount Kits are non-marring and available for off-modular panel and wall mount connections.

   d. 2¼" square connectors allow for in-line extended straight, 90°'L', 3-way 'T', or 4-way 'X' connections. Constructed of extruded aluminum, connectors are finished with a powder coat paint in the specified color. Slots are included down the length of each post for use with stackers and holes are included for use with variable height connections. Connectors are available in six heights: 35", 42½", 50", 57½", 65" and 80" and should be specified to match the tallest panel at a panel intersection. The included powder coat painted zinc top cap presses into the top of the connector post and has windows that can be broken out for various configurations. An included bracket joins connector posts to the panels by press-fit over the edges of the post and vertical steel tube portion of the panel and is secured to the top of the panel with two #10–¾" screws.

e. The top cap is painted 22-gauge steel and snaps into place over the connecting brackets.

f. Finished End Cover (A): The end cover is used to finish the end of a panel run and enclose the end of the raceway. The assembly consists of an extruded aluminum cover, up to three plastic connector clips (D), and a zinc end transition bracket. The zinc end transition cover is screwed onto the top of the panel. The cover is then held into position by screwing connector clips onto the panel with 3/4" screws and snapping the cover into position.

g. In-line Panel Connector: This kit joins two panels in an in-line configuration. It includes the in-line bracket, four #10-¾" screws, and 1 glide tower screw. The bracket joins the panels by press fit over the edges of the steel tubes. It is secured to the panels with two #10-¾" screws in each panel.

6. Power and Communication:
   a. Panel base rails have integrated receptacle knockouts that must be removed in positions needed for electrical, wire and data management components. Replacement duplex covers are available only in Black, Muslin or Shadow. Openings are 25/8" W x 15/16" H. There are two openings on each side of the panel, except for 24" wide panels, which are standard with one per panel side and the 20" wide panel, which does not have an opening. The center of each opening is 12" from the end of the panel. The base rail is 2" x 4¼" overall.

   b. Electrical components are UL listed and CSA certified. Duplex receptacles must be ordered separately for all receptacle openings to be utilized. There are a maximum 13 duplexes to a circuit.
   c. The base pathway accepts up to 64 voice/data cables (.25" dia) (6.27 sq. in.) at 60% fill ratio.

   d. When the electrical system shares the base pathway, the cable capacity is reduced to 20 cables (.25" dia) (2.03 sq. in.) at 60% fill ratio.

   e. Electrical Compliance:

      i. Meet or exceed current applicable ANSI/BIFMA and ISTA Performance Standards.

      ii. Meet the SCS Indoor Advantage™ GOLD certification which certifies conformance with LEED-CI criteria for EQ4-5, the BIFMA e3 level™ sustainability certification.

7. Systems Worksurfaces:
   a. Key dimensions: Overall Thickness: 1-3/16", Overall Depths vary: 18", 24" or 30" Overall Widths: 23-15/16", 30", 36", 42", 48", 54", 60", 66", 72", Overall dimensions of corner units vary from standard worksurfaces, but remain consistent to match panel widths with 36", 42" and 48" sides.

b. Construction: Worksurfaces are constructed of 1-1/8" thick high-density particleboard with high pressure laminate and a low-emitting paper backer on the bottom surface, for an overall thickness of 1-3/16". Worksurfaces are available with 2 mm plastic edgeband edge treatment. All edges have specified treatment applied, leaving no unfinished surfaces.

c. Wire Management:

   i. Grommets are available in most worksurfaces, providing the ability to route wires and wire connections. Rectangular worksurfaces 48” and wider have two grommets, peninsulas and 42“wide and smaller have one centered. Corner work surfaces have one grommet centered.

   ii. D-Shaped Half Round, Quarter Round, 60°Wedge worksurfaces do not have grommets. If wire management is not needed, worksurfaces are available with a "no grommet" option.

d. Universal Support Leg: Double wall construction with an inside and outside steel panel with a powder coat paint finish. These end panels are available for use in a 24” and 30” configuration, are 28-5/32” tall and 13” deep and are non-handed. A flat bracket is provided as standard, as well as a bracket to attach the end panel to the frames, which is 2” deep. Two leveling glides are included and provide 2” of adjustment. This support leg can be used along with a “Z” bracket to adjoin worksurfaces at different heights and must be used only in a shared position.

e. Worksurface Brackets: Constructed of steel, this accessory contains a left and a right-hand bracket. The finish is a powder coat paint in the specified color. These brackets are used to attach the end of a worksurface to a panel of the same width.

8. Overheads:
   a. Construction:
      i. Manufactured using cold rolled steel, overhead storage units are available with flipper doors, receding doors, hinged doors, without doors, or as an open shelf. The pre-assembled units feature an anti-dislodgement device, and a backstop is present to prevent contents inside from coming in contact with panels or tiles.

      ii. Overhead cabinets and shelves may be mounted vertically in 1” increments. The maximum height for installation on Abound frames is 65”. Flipper Door and Receding Door Overhead cabinets may be mounted on a panel equal to or up to 18” narrower than the cabinet.

   b. Flipper Doors:
      i. Each door operates on two ball bearing slides which guide the door over top of the cabinet when opened. 60” wide models are a one-piece cabinet, with two doors. Doors have two stiffeners for added rigidity and are ¾” thick.

C. Pedestals:
1. Materials and Construction:
a. Outside Case Dimensions:
ii. 22-7/8" Deep Models –14-15/16" x 22-7/8" x 28" (W-D-H)

b. Inside Drawer Dimensions:
iii. 22-7/8" Deep Models

iv. Box-12-1/16" x 20-1/2" x 5-1/2" (W-D-H)

v. File-12-1/16" x 20-1/2" x 11-1/2" (W-D-H)

c. Construction:
vi. Case: Welded steel case construction, Vertical Uprights (4) constructed of steel, Split bottom pan constructed of steel.

vii. Drawer: Double wall pre-painted steel drawer sides, Tog-L-Loc steel drawer construction.

viii. High drawer sides on file drawer, accommodating the use of letter width hanging file folders without the need for hang rails.

ix. Suspension: Medium-duty steel ball-bearing type suspension on box drawers and file drawers. 90% extension on box and file drawers.

x. Lock: Polished chrome interchangeable core removable cam lock activates horizontal and vertical lock bars, which engage the left-hand side of the drawer. HON "One Key" interchangeable cores may be ordered separately to key units alike. Two keys per lock are supplied.

xi. Finish: Steel parts are finished with a baked enamel over a rust-inhibiting phosphate pre-treatment.

xii. Counterweight standard on all mobile units.

xiii. Welded top front corners.

xiv. Front casters are fixed, rear casters swivel

xv. Pencil Tray is standard in top box drawers.

xvi. Accessories: Available accessories include Follower Blocks, Hanging File Rails, Caster Packs, Counterweight Kits, Glide Packs, Lock Cores and Kickplates.

PART 3- EXECUTION

3.1 EXAMINATION

A. Field Verification: Verify that tolerances and other required conditions provided by other Installers are in conformance with requirements to ensure successful installations. Refer to Division 1 for additional general requirements.

3.2 INSTALLATION

A. General: Install in accordance with the Manufacturer's Project specific requirements as fully submitted and successfully reviewed by the Engineer.

B. Layout:
1. Comply with Architectural drawing layout and clearances.

2. Comply with ADAAG requirements for accessible clearances.

3.3 DAMAGES, CLEANING AND PROTECTION

A. Perform the following operations immediately after installing furniture and furnishings:

1. General: Refer to Division 1 requirements.

2. Remove excess adhesive, other surface blemishes using cleaner recommended by manufacturer.

3. Protect furniture against damage from construction operations and placement of equipment and other fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by furniture manufacturer.

END OF SECTION

DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13281

ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to asbestos particulates.

1.02 DESCRIPTION OF WORK

A. Furnish all labor, materials, equipment, and services, necessary to carry out the safe removal and disposal of asbestos-containing material in compliance with these specifications, EPA, OSHA, State of Hawaii regulations, and any other applicable Federal and State regulations. Whenever there is a conflict or overlap of the above references, the most stringent shall apply. The asbestos work at the school, if applicable, shall generally include:

1. Removal and disposal of the beige/tan vinyl floor tile (VFT) and associated black mastic.

2. All work is to be completed after business hours or when the area is vacated.

3. Contractor to coordinate all work with the Engineer and the State's hired Qualified Consultant. Contractor is responsible to satisfy himself as to the total extent of all work, including to but not limited to the quantity, location, thickness, layers, accessibility, etc. of all material prior to commencement of any work.

B. In general, the principal items of the asbestos removal work shall be as follows:

1. Worker Protection

2. Decontamination Enclosure System

3. Preparation of Work Area

4. Removal of asbestos-containing materials

5. Removal of protective sheeting

6. Disposal

C. Cleaning shall include areas within and immediately around the work area affected by the abatement work and all areas contaminated by the Contractor's work.

D. The asbestos abatement work shall include removal of all asbestos-containing materials within the work area as specified herein and noted on the drawing.

E. Contractor shall comply with all regulations pertaining to asbestos removal. If there is a conflict with the specifications, the more stringent requirement shall apply.

1.03 COORDINATION WITH OTHER SECTIONS

A. Prior to commencement of work, an annotated description of all existing damaged and missing items shall be submitted to the Engineer. It will be the Contractor's responsibility to repair and/or replace to the Engineer satisfaction all items identified as damaged and/or missing that cannot be proven to have been in this condition prior to the commencement of this project.

1.04 SUBMITTALS PRIOR TO WORK

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Final payment will not be made until copies of all submittals have been furnished to and accepted by DAGS. Submit 6 copies of the submittal package, no later than 10 consecutive working days from award notice, which will include the items listed below.

C. Notices: As early as possible but prior to commencement of work, as regulated by each agency and before commencement of any on-site project activity, send a courtesy 10-day notice in accordance with 40 CFR Part 61.145 of Subpart M, of the proposed asbestos abatement work with copies to the Engineer and to the following agencies:

1. The Administrator of the Environmental Protection Agency (EPA) Regional Office having jurisdiction over the project.

2. State of Hawaii, Department of Health, "Notification of Demolition and Renovation" form. Send to: Noise, Radiation and Indoor Air Quality Branch, Asbestos Abatement Office, State Department of Health, P.O. Box 3378, Honolulu, Hawaii 76801-9984.

D. Permits & Licenses: Copies of all permits, licenses (C-19) and arrangements for removal, transportation and disposal of asbestos-containing materials and waste water, no later than 20 consecutive working days from notice of award unless otherwise instructed in writing by the Engineer.

E. Insurance: Proof of insurance for Workman’s Compensation and General Liability that covers asbestos, lead, and pollution.

F. Qualifications of the Qualified Consultant

G. Manufacturer's Data: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to asbestos handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.

H. Samples: Samples of the following items for approval prior to ordering materials:

1. Surfactant: copies of manufacturer's literature including all laboratory data, mixing and application instructions.

2. Tapes and Adhesives: copies of manufacturer's literature including all laboratory data.

3. Warning Labels and Signs: copies of examples of all required signage.

4. Protective Clothing: copies of manufacturer's literature on all protective clothing and one sample of each item which will be returned to the Contractor.

5. Respirator Equipment: copies of manufacturer's literature on all respirator equipment and one sample of each item which will be returned to the Contractor.

6. Asbestos Encapsulant(s): copies of manufacturer's literature including all laboratory data, application instructions.

I. Work Plan: Submit a project Work Plan for the asbestos-containing material disturbance work written and signed by the Contractor's State of Hawaii, Department of Health certified Asbestos Project Designer. The Contractor shall also provide detailed information concerning:
   1. Preparation of the work area including erecting a negative pressure enclosure system for the removal of interior floor tiles/adhesives and exterior paint/coat.

   2. Personal protective equipment including respiratory protection and protective clothing.

   3. Decontamination procedures for the personnel who may be exposed to asbestos.

   4. Handling and disposal methods and procedures to be used.

   5. Required air monitoring procedures and sampling protocols.

   6. Procedures for final cleanup.

   7. A sequence of work and performance schedule in coordination with other trades.

   8. Emergency procedures.

J. Shop Drawings: Submit shop drawings for the following items as a minimum:
   1. Descriptions of any equipment to be employed not discussed in this section.

   2. Security provisions, if any, in and around the project area.

   3. Outline of work procedures to be employed.

   4. Location and construction of all airtight barriers including temporary air tight negative pressure enclosure containment system for the removal of exterior paint and coating material

   5. Location of waste dumpster.

6. Staging of the work, the sequence

7. Entrances and exits to the work place

8. Location and construction of worker decontamination units

9. Water filtration system for all contaminated water. Description of water disposal and copy of water disposal permit from the City & County of Honolulu, Environmental Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge* Permit.

10. Proposed method of attaching plasticizing (polyethylene sheeting) shall be approved in advance to minimize damage to equipment and surfaces. Method of attachment may include any combination of duct tape or other approved waterproof tape, furring strips, spray glue, staples, nails screws or other effective procedures capable of sealing adjacent sheets of polyethylene sheeting and capable of sealing polyethylene to dissimilar finished or unfinished surfaces both under wet and dry conditions (including amended water).

11. Proposed method of patching and repairing all damage to existing finishes from the attachment of polyethylene sheeting (as applicable).

K. Documentation for Instruction: Submit documentation that each and every individual, including foremen, supervisors, and other company personnel or agents and any other individual who may be exposed to airborne asbestos fibers, who may be responsible for any aspect of abatement activities, or who is allowed or permitted to enter areas where such exposure may occur has currently attended and passed the Abatement Worker and/or Abatement Contractor/Supervisor course whichever is relevant to that workers responsibilities as specified in 40 CFR Part 763, "Asbestos Materials in Schools". These courses shall be EPA-approved or approved by a State Accreditation Program in the most current listing of the Federal Register. No worker shall be allowed on site if they are found to have either an expired accreditation certificate or does not comply with the requirements set forth in 40 CFR Part 763 on training. All workers shall be certified for asbestos related work in accordance with Department of Health, Chapter 11-504, Hawaii Administrative Rules, *Asbestos Abatement Certification Program*.

The Contractor shall be responsible for keeping the documentation up to date and subsequent submittals to the Engineer before any additional employee or individual, not currently on the list, is allowed within the project site.

Submit completed and signed "Employee Acknowledgment of Instruction and Release" forms. A sample "Employee Acknowledgment of Instruction and Release" form is provided at the end of this section.

L. Documentation from Physician: Submit documentation from a physician that all employees or agents who may be exposed to airborne asbestos have been provided with an opportunity to be medically monitored to determine whether they are

physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that all individuals permitted within the project site have received medical monitoring or had such monitoring made available to them as required in OSHA 29 CFR 1926.1101, and HIOSH 12-145.1. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities. The Contractor shall keep and make available to all affected individuals a record and the results of such examinations.

M. HEPA Vacuums: Submit manufacturer's certification that vacuums conform to ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems as applicable to this project.

N. Rental Equipment: When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy submitted to the Engineer.

O. Emergency Planning Procedures: Contractor shall submit for review and acceptance by the Engineer an emergency plan prior to abatement initiation.
   1. Emergency procedures shall be in written form and prominently posted adjacent to the Worker Protection Notices specified hereinafter. Everyone prior to entering the work area must read and sign these procedures to acknowledge receipt of emergency exits and emergency procedures.

   2. Emergency planning shall include notification of police, fire, and emergency medical personnel of planned abatement activities work schedule, and layout of the work area, particularly barriers that may affect response capabilities.

   3. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, and heat related injury. Written procedures shall be developed and employee training procedures shall be provided in Contractors plan.

1.05 SUBMITTAL AFTER WORK IS COMPLETED

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Engineer. Six copies of the report shall be submitted and shall include the items listed below.

C. The project name, Abatement Contractor, Abatement Contractor license number, notification form to the Hawaii Department of Health and EPA, work duration, material removed, respiratory protection employed, asbestos waste manifest, total quantity of waste, employee exposure air sample results, and results of the most current PAT round results for the laboratory or laboratories conducting the employee exposure, ambient, and TEM air sample analysis (if applicable).

D. Certification of the Abatement Contractor's employees.

E. Visitor/Worker Entry Log: The daily log of all personnel including the Contractor's employees and agents who enter the work area while asbestos abatement operations are in progress, until final clearance is received that the work area is asbestos free. The log shall contain the listed information as a minimum and shall be certified by the Qualified Consultant.
   1. Date of visit/worker entry

   2. Visitor/Worker's name, employer, business address and telephone number

   3. Time of entry and exit from work area

   4. Purpose of visit

   5. Type of protective clothing and respirator worn

   6. Certificate of release signed and filed with the contractor

F. Clearance certifications received from the Qualified Consultant.

G. A statement signed by the Asbestos Abatement Contractor that all asbestos abatement and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

1.06 PRODUCT HANDLING

A. Delivery and Storage of Materials: Deliver materials to the site in original packages, containers or bags fully identified with manufacturer's name, brand and lot number. Store materials in a dry well-ventilated space, under cover, off the ground and away from surfaces subject to dampness or condensation as approved by the Engineer Material that becomes contaminated with asbestos shall be disposed of in accordance with applicable regulations. Replacement materials shall be stored outside the contaminated work area until abatement is completed.

1.07 PROTECTION

A. Site Security: The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, employee's of subcontractors, the Engineer and its representatives, State and local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start.
   1. Entry to the work area by unauthorized individuals shall not be permitted without the express approval of the Engineer and any such entry shall be reported immediately to the Engineer by the Contractor.

   2. A Visitor/Worker Entry Log shall be maintained.

   3. The Contractor shall have control, subject to approval of the Engineer, of security in the work area and in proximity of Contractor's equipment and materials.

B. Site Protection and Safety: As a minimum follow the requirements of EPA, HIOSH (State of Hawaii), OSHA and NIOSH. Take all necessary precaution to ensure there is no asbestos contamination to those areas not included in the work schedule.

C. Protective Covering: The Contractor shall provide and install protective covering on an "as required" or "upon request" by the Qualified Consultant. Protective covering shall be clean plastic sheets minimum thickness of 6-mil.

D. Safeguarding of Property: The Contractor shall take whatever steps necessary to safeguard his work and also the property of the State and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages by his employees negligence. Do not load structure with weight that will endanger the structure.

E. Completed Work: The Contractor shall provide all necessary protection for surfaces encapsulated under this section.

1.08 ABBREVIATIONS

A. ANSI: American National Standards Institute, Inc.

B. CFR: Code of Federal Regulations

C. HIOSH: Division of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii

D. EPA: U.S. Environmental Protection Agency

E. NESHAP: National Emission Standards for Hazardous Air pollutants

F. NIOSH: National Institute for Occupation Safety and Health

G. OSHA: Occupational Safety and Health Administration

1.09 GENERAL REQUIREMENTS

A. Contractor shall examine and have at all times in his possession at his office (one copy) and in view at each job site office (one copy) a current issue of the following publications:

1. State of Hawaii: Occupational Safety and Health Standards; Title 12, Subtitle 8, Chapter 145.1, Asbestos

2. State of Hawaii, Department of Health, Title 11, Chapter 501-1, Asbestos Requirements

3. State of Hawaii, Department of Health, Title 11, Chapter 501-2, Asbestos Containing Materials in Schools

4. State of Hawaii, Department of Health, Title 11, Chapter 501-4, Asbestos Abatement Certification Program

5. Title 29, Code of Federal Regulations, Section 1910.134 - General Industry Standard for Respiratory Protection, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

6. Title 29, Code of Federal Regulations, Section 1926.1101 - Asbestos, Construction Industry, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

7. Title 29, Code of Federal Regulations, Section 1910.2 - Access to Employee Exposure and Medical Records, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

8. Title 29, Code of Federal Regulations, Section 1910.1200 - Hazard Communication, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

9. Title 40, Code of Federal Regulations, Part 61, Subparts A and M (Revised Subpart B), National Emission of Standards for Hazardous Air Pollutants, U.S. Environmental Protection Agency (EPA)

10. Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA 560/5-85-024 (Purple Book), U.S. Environmental Protection Agency (EPA)

11. Title 34, Code of Federal Regulations, Part 231, Appendix C, Procedures For Containing and Removing Building Materials Containing Asbestos, U.S. Environmental Protection Agency (EPA)

12. Title 29, Code of Federal Regulations, Section 1910.145 Specifications for Accident Prevention, Signs and Tags, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

13. ANSI Z88.2-80 Practice for Respiratory Protection

14. EPA, Final Response to the Asbestos Hazard Emergency Response Act (AHERA), 40 CFR, Part 763, Subpart E.

B. The Contractor shall comply with the above requirements and any applicable State and City & County regulations. Where conflict or any inconsistency among requirements or with this specification exists, the more stringent requirements shall apply. Ignorance of the above requirements and any applicable State and City & County regulations resulting in additional cost to the Contractor shall be solely the Contractor's responsibility.

C. All regulations shall govern over these specifications, except that any more stringent specification 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 specification and/or regulations should be directed to the Engineer.

D. Whenever approval of the Engineer is required prior to proceeding with other work, the following shall be complied with:
   1. The Contractor shall allow the Engineer 72 hours from notification to respond to the request for inspection.

   2. The Contractor shall designate one person (either a foreman or superintendent) who will be authorized to request for inspections. The name of the designated person shall be submitted in writing to the Engineer prior to commencing with the work. Request from any other person will not be considered an official request.

   3. The designated person when requesting for inspection shall provide the following information:
      a. Name of caller.

      b. Building and rooms to be inspected (as applicable).

      c. Work phase of inspection, as specified.

1.10 DEFINITIONS

A. Abatement: Procedure to control fiber release from asbestos-containing building materials.
   1. Removal: All herein specified procedures necessary to remove asbestos-containing materials at an approved site in an acceptable manner.

   2. Post-Removal Surface Encapsulation: Procedures necessary to coat surfaces from which asbestos-containing materials have been removed and where designated on the drawings to control any residual fiber release.

B. Air Monitoring: The process of measuring the fiber content of a specific, known, volume of air in a stated period of time.

C. Amended Water: Water to which a surfactant has been added to reduce water surface tension and thereby provide a more rapid penetration.

D. Authorized Visitor: the Engineer, the Qualified Consultant, his representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

E. Holding Area: A secure area used for the storage of double-bagged asbestos containing material before removal from the project site to an approved disposal site.

F. Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area without dismantling.

G. Friable Asbestos: Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.

H. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 micron in length.

I. HEPA Vacuum Equipment: Vacuuming equipment that utilizes a High Efficiency Particulate Absolute (HEPA) filter.

J. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

K. Post-Removal Encapsulation: A liquid material which can be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant). Selected product shall be compatible with the existing finishes including wood, metal, and plastic.

L. Qualified Consultant: Consultant hired by the Contractor who will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Asbestos Building Inspector, Contractor Supervisor, Project Monitor; and NIOSH 582 certified.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Plastic Sheeting: Minimum thickness is 6-mil polyethylene film.

B. Plastic Bags: Minimum thickness 6-mil polyethylene film labeled as specified hereinafter.

C. 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, by Nashua, 3-M, Arno, or approved equal.

D. Adhesives: Adhesives (3-M #76, #77, or approved equal) shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

E. Surfactant (Wetting Agent): 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether, or equivalent, and shall be mixed with water to provide a concentration of one ounce, or more as needed, of surfactant to 5 gallons of water. (An equivalent surfactant shall be understood to mean material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM method D 1331-56 (R 1980), "Surface and Interfacial Tension of Solutions of Surface-Active Agents.")

F. Warning Labels and Signs: As required by OSHA regulations 29 CFR 1926.1101 and HIOSH 12-145.1. Permanent signage for access panels and areas with encapsulated asbestos-containing materials shall be as specified hereinafter. Signage shall be as approved by the Engineer.

G. Protective Clothing: As specified hereinafter. The Contractor shall have all the required sets of coveralls required for this project on island prior to the start of work. There will be no time extension for the unavailability of coveralls or related equipment.

H. Post-Removal Encapsulation: The encapsulant shall be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant) and shall be compatible with the existing finishes including wood, metal, and plastic.

I. Other Materials: Provide all other materials, such as, but not limited to lumber, plywood, nails, fasteners, metal studs, hardware, foam sealants, and caulking which may be required to properly prepare and complete this project.

2.02 TOOLS AND EQUIPMENT

A. General: Provide and fabricate suitable tools for the asbestos abatement procedures.

B. Water Sprayer: Airless or a pressure sprayer for amended water application as applicable.

C. Air Purification Equipment: High Efficiency Particulate Absolute (HEPA) filtration systems.

D. Paint/Encapsulant Sprayer: Airless type.

E. Other tools and equipment as necessary.

2.03 PERSONNEL PROTECTION REQUIREMENTS

A. The contractor acknowledges he alone is responsible for instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard.

B. Provide workers with sufficient sets of disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear. Provide hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as asbestos contaminated waste. Protective clothing shall be worn by all personnel within the work area from the start of the removal and post-removal encapsulation work until the work area has received its final clearance.

C. Insulated non-skid rubber boots or an approved equal shall be required for all individuals entering the work area. Protective full body clothing without elastic at sleeves and legs shall require separate elastic or taped protection to seal the opening. Visitors shall be provided full body protective clothing.

D. No visitors shall be allowed in work areas, except as authorized by the Engineer. Visitors must supply their own respiratory protection and show proof training in accordance with DOH 11-501-504.

Provide authorized visitors with suitable disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear including hard hat when required and insulated rubber boots or equal. The Contractor shall include in his Bid the expense of a total of 4 changes of clothing per day for each day of asbestos abatement work for visitor's use. The quantity shall accumulate and may be used at any time during asbestos abatement work at the discretion of the Engineer.

E. All electrical systems used for asbestos abatement operations shall as a minimum be protected with "Ground Fault Circuit Interrupters" selected and installed in strict accordance with the manufacturer's instructions, the National Electric Code and all other pertinent codes.

F. Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z-89.1-1981, eye protection meeting the requirements of ANSI Z87.1-1979, safety shoes meeting the requirements of ANSI Z41.1-1967, disposable PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

PART 3 - EXECUTION

3.01 SEPARATION OF WORK AREAS FROM NON WORK AREAS

A. Visual Separation: Visual separation shall be accomplished at all glazed areas using opaque polyethylene. This separation shall not be incorporated within the other seals required on this project.

B. Air Systems: Shut down and isolate all ventilation air systems to prevent contamination and fiber dispersal to other areas of the building. During the abatement operations, air intake vents within the work area shall all be sealed with tape and two layers of 6-mil polyethylene sheeting.

C. Penetrations: Ceiling and wall penetrations, windows and doors, shall be sealed with two layers of 6-mil poly sheeting and secured with duct tape.

D. For exterior paint/coating removal work, the Contractor shall construct an air-tight negative pressure mini enclosure.

E. Emergency Exits: Designate and maintain emergency and fire exits from the work area in accordance with local codes and regulations. Provide knockout/cut away

panels in the barriers in the direction of emergency egress. Properly mark the knockout/cut away panels, seal them airtight, and on a continuing basis instruct workers and authorized personnel as to their locations. Post a diagram in each Clean Room and Equipment Room locating the emergency exits. In case of fire while doing work in the work areas, emergency exit procedures have priority over normal work exiting procedures.

F. Inspection: The Contractor shall inspect all barriers at least twice a day (once prior to the start of each day's abatement operations and following the day's abatement operations). Document the inspections and observations in a daily project log.

3.02 DECONTAMINATION ENCLOSURE SYSTEMS

A. General: The Contractor shall construct the decontamination enclosure system or use portable units acceptable to the Qualified Consultant and as described in the approved Work Plan.

B. Personnel Decontamination Unit: As deemed necessary by the Qualified Consultant, provide a personnel decontamination enclosure system contiguous to the work area consisting of three totally enclosed chambers as follows:
   1. An Equipment Room with two curtained doorways, one to the work area and one to the shower.

   2. A Shower Room with two curtained doorways, one to the Equipment Room and one to the Clean Room. The Shower Room shall contain at least one shower. Careful attention must be paid to the shower enclosure to insure against leakage of any kind. Ensure a supply of soap at all times in the shower. Drainage from the shower shall be disposed of as contaminated waste water or filtered as specified hereinafter.

   3. A Clean Room with one curtained doorway to the Shower Room and one entrance/exit door to non-contaminated area. The Clean Room shall have sufficient space for storage of worker's street clothes and personal effects, towels, and other non-contaminated items.

C. Maintenance of Decontamination Units: At the beginning of each work shift and throughout abatement operations, all seals and curtained doorways shall be inspected and if not found in proper condition, repaired immediately. All areas shall be kept clean at all times. Ensure that drainage filtering systems are kept clean and operational at all times.
   1. Personnel Decontamination Unit:
      a. The Contractor shall maintain Clean Room and shall repair and sanitize respirator equipment after each use.

      b. Soap and shampoo shall be in the showers at all times.

      c. Fresh towels shall be available at all times.

      d. Provide a disposal bag for contaminated filters in the Shower Room at all times.

e. Provide storage for wet and dry towels.

f. Provide a fine bristle brush outside the Equipment Room in the work area.

g. At the end of each work shift the shower shall be thoroughly disinfected, the filter bag (if applicable) shall be returned to the Equipment Room for disposal, and the Equipment Room shall be thoroughly HEPA vacuumed and wet cleaned. The decontamination enclosures shall be sealed and removed (as necessary) and area restored after each work day.

D. Worker Protection Notice: Post the following notice in each Clean Room and Equipment Room:
   1. Workers and authorized personnel, in order to enter the work area, shall:
      a. Remove all clothing, unless it is to remain in the Equipment room for eventual disposal.

      b. Don the appropriate respiratory protection, follow all training procedures and manufacturer's instructions. Once all of the above has been completed, proceed to the shower. Check the equipment out for proper operation before proceeding any further.

      c. Don protective clothing (full body coveralls, gloves, boots, headgear etc.) after donning respirator.

   2. All workers and authorized personnel, in order to leave the work area, shall:
      a. Remove gross (visible) contamination from themselves and their equipment. Brush off dust with a fine bristle brush and leave the brush outside the Equipment Room in the work area.

      b. Enter the Equipment Room and, keeping your respirator in place, remove all protective clothing, including full body coveralls, gloves, boots, and headgear. Place contaminated clothing in the bag(s) provided. Store reusable gloves and boots in their respective areas in the Equipment Room.

      c. Respirator still in place, move into the Shower Room and rinse off thoroughly.

      d. Accomplish complete showering, thoroughly soaping and shampooing.

      e. Proceed to the Clean Room: Dry off, get dressed and return respirator to its proper place.

      f. No smoking, eating, drinking shall be allowed inside the work area or the decontamination enclosures.

3.03 WASTE WATER FILTERING SYSTEM

A. Prior to any waste water disposal into the sanitary sewer system, the Contractor shall be responsible for obtaining from the City and County of Honolulu, Environmental

Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge* Permit.

B. Filter: All waste water that will be discharged into the sanitary sewer system shall be treated as contaminated with asbestos and shall be filtered using two in-line filter cartridges with 2" inlets and outlets. The outlet of the first cartridge shall connect to the inlet of the second cartridge. The first cartridge shall contain six 100-micron prefilters and a second cartridge shall contain six 0.5-micron filters or equal staging according to type filtering unit.

C. One spare set of 100-micron prefilters shall be maintained at the site at all times to replace prefilters during cleaning. Maintain at least one set of 0.5-micron or equal filters at the site at all items form replacement as necessary.

D. When prefilters become clogged, replace with spares, and wash out the prefilters in the Shower Room, allowing drainage from the cleaning operation to go through the filtering system.

E. When the final filters become clogged, remove the filters, replace with new, and dispose of the clogged filters as contaminated waste.

F. Provide a holding tank for contaminated waste water as required to prevent backup of water into the shower when the amount of water generated exceeds the flow rate of the filters.

3.04 COMMUNICATIONS

A. Provide a communications system suitable to monitor all activities within the work area and to readily transfer messages from one location to another.

3.05 WORK AREA PREPARATION

A. Work by the Asbestos Abatement Contractor:
   1. Step 1:
      a. Posting of Danger Signs: Post danger signs in and around the work area to comply with 29 CFR 1926.1101, HIOSH 12-145.1 and all other Federal, State and local requirements. Signs shall be posted at a distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.

      b. 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 and locked (as applicable).

      c. Barrier Enclosures: Cover all openings between the work area and the occupied portions of the building with opaque plastic. Construct all general and separation barriers.

d. Sealing Openings: Seal all openings including but not limited to ducts, vents, electrical penetrations, and any other penetrations of the work areas, with plastic sheeting sealed with tape.

e. Erect an air tight negative pressure enclosure containment system attached to the exterior surfaces for the removal of paint/coating material.

2. Step 2:
   a. Provide Decontamination Units where appropriate: Personnel Decontamination Unit(s) specified hereinafter shall be required.

   b. Air Filtration Units: Install sufficient number of HEPA air filtration units to create a minimum of four air changes per hour and create a negative pressure differential of 0.2 inches of water. Contractor to monitor the pressure differential for the duration of the project using a portable manometer. Contractor will keep one spare unit at the job site for the duration of the work.

   c. Pre-cleaning/Wet-wiping:
      1) Preclean fixed object within the work area, first using HEPA vacuum equipment and then wet cleaning methods as appropriate and separately enclose with minimum 6-mil plastic sheeting sealed with tape. Fixed objects shall include, but not be limited to exposed electrical conduits and all other permanently fixed items.

3. Step 3:
   a. Plasticizing: Objects which may be contaminated during abatement or difficult to clean shall be taped and sealed in a minimum of 6-mil polyethylene plastic sheeting. A minimum of 2 layers of 6-mil polyethylene plastic sheeting shall be used for preparation of critical barriers and containments.

   b. When sealing (plasticizing), plastic sheet shall be protected against damages by sharp edges, projections, etc. Provide 2" squares of duct tape at all sharp projections prior to applying plastic sheet to prevent puncture and tearing.

   c. NOTE: Combining lower mil thickness sheets to total the minimum mil thickness is not acceptable.

   d. Marking Exits: Maintain and mark both normal and emergency exits from the work areas to include large tape or spray painted orange arrows in the direction of egress and at curtained doorways which side of plastic sheeting to access first. One arrow marking shall be visible from every work location. Establish a color or designation system to distinguish normal exiting to the personnel decontamination unit and emergency exiting when life safety conditions prevail.

4. Step 4: Temporary utility services:
   a. Temporary Electricity and Lighting:

1) Existing electrical service to the building may be used for temporary electrical power during abatement and replacement work; however, the electrical power to the work area will be shut down during abatement work.

2) The Contractor shall verify the locations(s) of available electrical service outside the work areas and shall tie into the existing system at a location approved by the Engineer.

3) Install circuit and branch wiring, with area distribution boxes located so that power is available throughout the project by use of construction type power cords. All lighting shall be three wire with a ground fault interrupter.

4) Provide a minimum of 35 foot-candles of illumination on surface for finishing operation and 100-foot candles for removal operations. Provide 24 volt safety lighting.

b. Temporary Water:
   1) Existing domestic water service to the building may be used for temporary water during construction. Location of tie-in shall be approved by the Engineer.

   2) Install branch piping as necessary throughout the construction area.

c. Temporary Fire Protection:
   1) Provide and maintain temporary fire protection equipment during the asbestos abatement operations.

   2) Equipment shall be of the appropriate type to fight fires associated with the existing building materials and those materials used during the construction operations.

   3) The Contractor shall clearly mark the location of all fire extinguishers.

5. Step 5: After the sealing and temporary facility work is completed, notify the Qualified Consultant and get his approval prior to proceeding with abatement.

3.06 VINYL FLOOR TILE WITH MASTIC REMOVAL

A. Removal work will be conducted in a negative pressure enclosure containment system.

B. Thoroughly wet the affected floor covering with amended water before starting the removal.

C. Spray the flooring material repeatedly during the removal operations to maintain a wet condition and to minimize asbestos fiber dispersion. The Qualified Consultant shall have the authority to stop all work due to improper work techniques.

D. The asbestos-containing materials shall be removed in small sections. Before beginning the next section, the material shall be packed while still moist into 6-mil double polyethylene bags and sealed airtight. No removed material, bagged or unbagged, shall be allowed to dry, fall to the ground, be crumbled into small pieces, pulverized, or made friable.

E. The Contractor is prohibited from using methods of removal that create excessive amounts of dust and debris.

F. Exposed raw surfaces will be completely sealed using an appropriate encapsulant.

3.07 EQUIPMENT CLEANING

A. All contaminated equipment and tools used for removal work shall be washed and cleaned in the work area prior to removing them from the work area. No washing of contaminated equipment and tools will be allowed outside the work area.

3.08 ASBESTOS-CONTAINING WASTE HANDLING

A. Collect and bag all asbestos debris and any other contaminated debris found in the work area. Clean the visible residual by HEPA vacuuming.

B. Clean fixed object within the work area, using HEPA vacuum equipment. Fixed objects shall include, but not be limited to pipes, wiring and all other permanently fixed items. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not use HEPA vacuum equipment on wet surfaces.

C. Debris shall be bagged and sealed in 6-mil plastic bags immediately after removal. All gross debris created by the removal process shall be bagged and sealed at the end of each removal day.

D. The bags containing the asbestos waste material shall be checked for evidence of waste material attached to the outside of the bags. If dirty, the bags shall be washed down in the work area. The bags are then moved to the Holding bin. Bags and containers shall be marked with OSHA label prescribed by the Hawaii OSHA regulations referenced in these specifications. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA 40 CFR 61.150; or EPA 40 CFR 763 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.

E. Asbestos contaminated waste with sharp edges (e.g. nails, screws, metal lath, etc.) will tear the polyethylene bags and sheeting and therefore shall be placed in drums or enclosed with cardboard and double wrapped and sealed with plastic.

F. During the removal process, if plastic sheeting tears, or the duct tape loosens from the surface, the Abatement Contractor shall immediately stop work, cleanup loose asbestos–containing materials, and then reseal the surface by taping over the torn or loosened surface, before commencing again.

G. Protect the plastic sheeting against tearing caused by sharp projection, corners, edges, etc., of all equipment being used in the removal process. However, if the plastic sheeting tears, the Abatement Contractor shall follow repair procedure specified above.

H. Any housing or penetration concealing asbestos–containing materials shall be removed and protected to provide access to the materials. Replacement or reattachment of these shall be in a manner such that function and appearance is equal or exceeds the original condition.

3.09 CLEANING AND CLEARANCE OF THE WORK AREA

A. Should the Contractor fail to commence work to clean-up and make the work area asbestos free within one working day after the clean-up thereof has been requested by the Engineer, and thereafter to expeditiously complete the said clean-up, Engineer may without further notice and without termination of contract, have the clean-up done and deduct the cost thereof from the contract.

B. Visual Clearance of Removal Work Areas: Remove all visible accumulation of asbestos-containing materials and debris by HEPA vacuums, sponging, and wet-wiping. The work areas shall be totally visibly clean and remaining material encapsulated. The Contractor, in the presence of the Qualified Consultant, shall make a complete visual inspection of the work area to ensure dust-free conditions.

C. Once the Qualified Consultant verifies that the work areas are essentially clean of visible asbestos-containing debris, the Qualified Consultant will collect post abatement PCM air clearance samples.

D. For interior removal work, air clearance samples will be collected by the Qualified Consultant until an air clearance level of 0.01 fibers/cc is obtained.

E. Should the Contractor fail to achieve the respective clearance level lower than 0.01 f/cc in the removal work area. The Contractor will re-clean the area at no additional cost to the State and all additional fees to perform the sampling and analysis by the Qualified Consultant shall be paid for by the Contractor.

F. After achieving a respective clearance level lower than 0.01 f/cc, the work area will be cleared of all remaining containment enclosure sheeting and released to the Engineer. Signage applicable to job site safety and the performance of the remaining portions of the work shall remain as applicable.

3.10 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL

A. Painted asbestos-containing waste shall be TCLP tested by the Contractor prior to disposal to determine if the asbestos-containing waste must be disposed of as hazardous waste or as asbestos-containing waste. If painted asbestos-containing waste passes the TCLP test, the waste may be disposed of as asbestos-containing waste. If the painted asbestos-containing waste fails the TCLP test, the waste must be disposed of as hazardous waste.

B. As the work progresses asbestos-containing waste is generated the Contractor shall transport all waste generated on a pre-scheduled day to the State of Hawaii, Department of Health's authorized disposal site, or as specifically approved by the Engineer to delay a disposal operation. Transport all waste to the predesignated disposal site in accordance with EPA regulations and specific landfill requirements.

   Contaminated material shall be double–bagged in bags with OSHA label prescribed by the HIOSH regulations referenced in these specifications. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA requirement 29 CFR 1926.1101, HIOSH 12–145.1 or EPA 40 CFR 61.150 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.

C. Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The marking must be displayed in such a manner and location that a person can easily read the legend. Refer to 40 CFR Part 61.149 for lettering size, fonts and wording of sign requirements. For all loading and unloading activities, the sign referred to in 40 CFR Part 61.150 (b) (3) shall be displayed prominently.

D. Vehicles used for transporting waste to the disposal sites shall have a completely enclosed, lockable storage compartment. Storage compartments shall be plasticized and sealed with a minimum of one layer of 6 mil polyethylene sheeting on the sides and top and two layers of 6 mil polyethylene on the floor (bed). Waste materials, except those with sharp edges (metal lath, screws, nails, metal suspension system, etc.), properly double bagged may be transported to the disposal site without being placed in drums if the transporting vehicle is prepared as specified above in addition to any more stringent requirements by HIOSH. The compartments shall be thoroughly wet–cleaned and/or HEPA vacuumed following the disposal of each load at the disposal sites at an approved location with electrical power as required. At the conclusion of the asbestos abatement, or before transport vehicles are used for other purposes, the polyethylene sheeting shall be properly removed and disposed of as contaminated waste. After this has been accomplished, compartments shall once again be wet–cleaned and HEPA vacuumed in order to eliminate all debris.

E. At the landfill, upon delivery of the waste for disposal, the Contractor shall notify the Scale Attendant and Landfill Spotter that the waste to be disposed of is asbestos material.

F. Workers unloading bags at the disposal sites shall be dressed in full body protective clothing and dual cartridge respirators.

G. Waste disposal manifest forms shall be properly completed to assure custody and disposal of all asbestos–containing material and asbestos contaminated waste at approved disposal sites. Forms shall be kept on file as directed by the Engineer with copies submitted to the Qualified Consultant the next working day after each trip.

NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ANY LANDFILL USED FOR DISPOSAL OF ASBESTOS–CONTAINING OR ASBESTOS CONTAMINATED WASTE IS APPROVED FOR THAT PURPOSE.

H. Bags must be placed in the hole for burial. Dumping of bags from the containers will not be allowed. However, if a bag is torn and if acceptable by the landfill, the entire container may be buried.

I. Liquid waste for disposal shall be filtered as specified herein.

J. The Contractor shall pay the waste disposal charge and any special handling charges at the landfills. All expenses for landfills shall be the complete responsibility of the Contractor. The bagged material shall be loaded in drums except as noted previously and transported to a landfill authorized by the State Department of Health to accept material containing asbestos. In the event the bag is torn, the tear shall be immediately mended with duct tape and the bag placed into another bag and sealed, and the wrapped material covered with another wrap and sealed. The Contractor shall make all prior arrangements with the landfill.

3.11 LOCK DOWN

A. After clean-up of gross contamination and final visual inspection, a compatible post removal (lockdown) encapsulant shall then be spray applied to all surfaces. The removal area shall include but not to be limited to constructed enclosures, barriers, polyethylene sheeting that covers any equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and on-site constructed decontamination unit.

This 3-page form is to be filled in and filed with both state and regional officials a minimum of 10 working days before start of the asbestos abatement contract. An electronic version can be found at:
http://hawaii.gov/health/environmental/noise/asbestoslead/asbestoslead/pdf/asbnotificationinfo.pdf

Asbestos Notification of Demolition & Renovation
(Ref. HAR Chapter 11-501)

SEND TO: **STATE DEPARTMENT OF HEALTH**
INDOOR AND RADIOLOGICAL HEALTH BRANCH
99-945 HALAWA VALLEY STREET
AIEA, HAWAII 96701
Phone (808) 586-5800 Fax (808) 586-5811

I. Type of notification: O=original R=revised C=cancelled		
II. Type of operation: D=Demolition R=Renovation OD=Ordered Demolition ER=Emergency Renovation		
III. Facility information		
Owner name:		
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
Removal contractor:		License #:
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
Other operator:		
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
IV. Is asbestos present (y/n): Inspector's name:	Certification #:	State of certification:
V. Facility description (Include building number, floor and room number)		
Building name:		
Address:		
City:	State:	Zip code:
Location(s) on site:		
Building size (sq. ft.):	# Floors:	Age:
Present use:	Prior use:	
Official Use Only		
Postmark Date:	**Received by:**	**State Record Number:**

Page 1 of 3

This 3-page form is to be filled in and filed with both state and regional officials a minimum of 10 working days before start of the asbestos abatement contract. An electronic version can be found at:
http://hawaii.gov/health/environmental/noise/asbestoslead/asbestoslead/pdf/asbnotificationinfo.pdf

VI. Procedure used to detect the presence of asbestos Laboratory name: Analytical method:			
VII. Specify the nature of the asbestos material (TSI, surfacing, VAT, miscellaneous):			
Amount of asbestos, including: 1. RACM to be removed 2. CAT I left in place, and 3. CAT II left in place	RACM to be removed	Nonfriable ACM (not) to be removed	
		Category I	Category II
Pipes (linear ft.)			
Surfacing (square ft.)			
Facility components (cu. ft.)			
Scheduled asbestos abatement dates Start (mm/dd/yy): Finish (mm/dd/yy) Circle workdays and times: weekdays: daytime nighttime weekends: daytime nighttime			
Scheduled renovation/demolition dates Start (mm/dd/yy): Finish (mm/dd/yy) Circle workdays and times: weekdays: daytime nighttime weekends: daytime nighttime			
Description of the planned renovation/demolition work and methods to be used:			
Description of the work practices and engineering controls to be used to prevent emissions of asbestos from the work-site: Project designer name: Certification #: State:			
XII. Waste transporter #1			
Name:			
Address:			
City:	State:	Zip code:	
Contact Person:	Telephone:		
Waste transporter #2			
Name:			
Address:			
City:	State:	Zip code:	
Contact Person:	Telephone:		
XIII. Waste disposal site			
Facility Name:	Telephone:		
Address:			
City:	State:	Zip code:	

Page 2 of 3

This 3-page form is to be filled in and filed with both state and regional officials a minimum of 10 working days before start of the asbestos abatement contract. An electronic version can be found at:
http://hawaii.gov/health/environmental/noise/asbestoslead/asbestoslead/pdf/asbnotificationinfo.pdf

XIV.	**For demolition ordered by a government agency, please identify**	
	Name:	Title:
	Authority (Agency):	
	Date of order (mm/dd/yy):	Date ordered to begin (mm/dd/yy):
XV.	**For emergency renovations (Please call 808-586-5800 for additional instructions)**	
	Date and time of emergency Date (mm/dd/yy): Time: (a.m./p.m.)	
	Description of sudden, unexpected event and the damage caused:	
	Explanation of how the event caused an unsafe condition or would cause equipment damage or an unreasonable financial burden:	
	Person contacted for approval at the Indoor and Radiological Health Branch: Name: Date (mm/dd/yy): Time: (a.m./p.m.)	
XVI.	**Description of procedures to be followed in the event that unexpected asbestos is found or previously nonfriable asbestos material becomes crumbled, pulverized or reduced to powder:**	
XVII.	**I certify that an individual trained in the provisions of Hawaii administrative rules chapter 11-501, and certified as a contractor/supervisor, will be on-site during the entire renovation and/or demolition and evidence that the required training has been accomplished for this and all workers will be available at the work-site.** Signature of owner/operator Date (mm/dd/yy):	
XVIII.	**I certify that the information on this notification is correct.** Signature of owner/operator Date (mm/dd/yy):	
XIX.	**Additional Comments:**	

Page 3 of 3

VISITOR/WORKER ENTRY LOG
(Sample)

DATE

PROJECT

ALL PERSONNEL MUST SIGN-IN AND SIGN-OUT EVERY TIME THEY ENTER/EXIT THE WORK AREA. PLEASE PRINT CLEARLY. ATTACH EMPLOYEE RELEASE FORM FOR ALL VISITORS.

NAME	EMPLOYER Name, *Address, *Phone	TIME IN	TIME OUT	*PURPOSE OF VISIT	**TYPE OF PPE ISSUED

*NOT required of Contractor's employees

** Type of PPE (Personal Protective Equipment) Issued to include list of protective clothing worn and type of respirator used (Type "C", half-face dual cartridge, etc.

EMPLOYEE ACKNOWLEDGMENT OF INSTRUCTION AND RELEASE FORM
(sample)

Employee Name:

Employee Address:

Employee Telephone No.:

DOH Asbestos Certification Number:

Classification of Worker:

Have you had in the past, or present, any respiratory problems?

Yes No

Have you worked in the past with asbestos or fiberglass type materials?

Yes No

The project you will be working on involves the use of asbestos and the removal of the asbestos from the building. Asbestos is considered a health hazard.

The company is supplying all necessary safety clothing and working conditions required and necessary for your protection from asbestos hazard.

You shall be instructed a commencement of the job on the required use of safety equipment, clothing, working conditions and procedures. These must be rigidly adhered to. Smoking is not permitted in the work areas. Disregarding of safety instructions shall result in instant dismissal.

I acknowledge that safety instructions have been given to me by the company at my work commencement and I am thoroughly conversant with them and have answered the above questions truthfully.

Signed:
Employee

Date:

ASBESTOS DISPOSAL FORM
(sample)

Date: .

Owner or Operator of Landfill

Name

Address

City State Zip

Phone:

Name of Landfill

Name

Address

City State Zip

Phone:

Hauler

Approximate Volume of Asbestos Received

Type of Container Asbestos in

Asbestos Container Labeled? YES NO

I certify that the above statements are true and that the landfill has been approved for the disposal of asbestos. The delivered material will be covered within 6 inches (15 cm.) of non-asbestos material within 24 hours.

signed
Landfill Owner-Operator

END OF SECTION

SECTION 13288

TESTING AND AIR MONITORING

PART 1 - GENERAL

1.01 SUMMARY

A. In performing this project, all possible safeguards, precautions and protective measures should be utilized to prevent exposure of any individual to hazardous substances.

These specifications are based upon procedures and standards derived from U.S. regulatory agencies (EPA, OSHA, NIOSH) and the Hawaii State Division of Occupational Safety and Health as well as from industry and sound industrial hygiene practice. They must be followed to ensure that no measurable amount of asbestos or lead is released to the uncontrolled work and public areas.

B. Testing, daily area air monitoring and visual inspections shall be provided by the third party independent industrial hygienist for the purpose of:

1. Verifying compliance with the specifications and the applicable regulations listed in Section 13281 – ASBESTOS ABATEMENT.

2. Ensuring that the documentation required by these specifications and by law is collected and reported to the Engineer;

3. Providing engineering control during the project.

1.02 DEFINITIONS

A. Building representative(s): The person or persons designated by the users of the building to act on their behalf.

B. Contractor: The construction firm engaged to remove, encapsulate and/or dispose of the hazardous materials.

C. Industrial Hygienist: An individual trained in air monitoring and project supervision. A member of the construction management team who enters the work area to set up the air monitoring device and then collects the various air samples to be sent to the laboratory for analysis.

D. Project Manager: The State employee responsible for administering the construction contract and ensuring that the work of the contractor is conducted according to the contract documents and in compliance with applicable laws, regulations, ordinance, etc.

E. Third Party Independent Industrial Hygienist: The State shall hire an independent third party qualified environmental Industrial Hygienist who is a State of Hawaii certified Project Monitor licensed to perform work in Hawaii (and employed by a company licensed to perform work in Hawaii). The Third Party Independent

Industrial Hygienist will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA (29 CFR 1926.1101), Hawaii State Law (12-145.1) and all other applicable laws and as required in these specifications. The Contractor shall provide all required documentation to the Engineer. Contractor shall collect daily personal air samples on at least 25% of the personnel performing removal work with the most exposure for the duration of the project.

B. The Contractor shall procure legally required reports for air monitoring as part of the contract. All air monitoring reports shall include all field data, laboratory reports, test results and other pertinent information about the daily work activities.

C. Third party independent industrial hygienist shall make available, one copy of daily area air monitoring reports for the Contractor's use. The Contractor may accept such reports as they are offered at his own risk. Availability of additional copies of the reports during the work or at any future time shall not be considered a part of the contract. The Contractor shall be responsible for his own personnel air monitoring as required by law and these specifications.

D. Air monitoring and testing which becomes necessary in order to follow up on work by the Abatement Contractor, rejected as not conforming to the requirements shall be the responsibility of the Abatement Contractor. The full cost of such additional monitoring shall be borne by the Abatement Contractor, and shall not be a part of the final contract payment.

E. The Abatement Contractor shall be responsible for the proper required notifications to the State of Hawaii Department of Health.

3.02 TESTING/AIR MONITORING

A. The third party independent industrial hygienist shall have the authority to implement engineering controls during the project.

B. Daily area air monitoring shall be performed to detect airborne fiber concentrations in and outside the work area for the duration of the project.
   1. On-site environmental air monitoring as required by EPA, OSHA, and the project specifications.

2. Laboratory analysis by PCM analysis using NIOSH 7400 method of asbestos and flame atomic absorption spectrometry analysis using NIOSH 7082 method of lead.

3. Monitoring of decontamination procedures at site entry/exit.

4. Monitoring of containment maintenance by visual and instrumental inspection.

5. Interface with project inspectors, building representatives, representatives of regulatory agencies, and project designers during site visits.

6. Ensure that proper respiratory protection is utilized by all persons at the project site.

7. Relay to the Engineer any discrepancies in contractor's action with provisions of project specifications.

8. Act quickly in case of emergencies with appropriate response.

C. Any testing above and beyond what is specified and initiated by the Contractor shall be paid for by the Contractor at no additional cost to the Engineer

D. Air monitoring will be conducted according to the method prescribed by NIOSH 7400 method (asbestos) and NIOSH 7082 (lead). Final visual clearance inspection will be performed by the third party independent industrial hygienist together with the Abatement Contractor's foreman.

3.03 SAMPLING DESIGN

The following is a typical sampling design per containment area during the actual abatement. The number of samples and volume quantities may vary, depending on each project's specifications.

A. Background Samples: Background baseline samples shall be taken prior to abatement to establish pre-abatement airborne concentration levels.

B. Work Area Samples: Low volume samples (as per NIOSH 7400 and NIOSH 7082) shall be taken in the work areas. Ambient air samples shall be taken in the work area for comparison to barrier samples in an effort to ensure that containment systems are secure and that the persons entering the work area are wearing proper respiratory protection. If monitoring inside and outside the abatement work area shows airborne concentrations have reached the predetermined specified TWA, the third party independent industrial hygienist shall stop all work, notify the Engineer immediately, have the Contractor correct the condition(s) causing the increase and ensure that the Contractor obtains the Engineer's approval prior to restarting the removal work.

C. Barrier Samples: Monitoring outside the temporary barriers determines if leakage is occurring outside the work area due to loss of negative pressure or

faulty seals. At minimum of one sample upwind of the work area and two samples downwind of the work area shall be collected.

D. Outside Environmental Samples: Each removal area shall be sealed so that airborne fibers cannot escape into occupied areas. Air is forcibly drawn from the removal area by a negative air machine, filtered and exhausted to the outside environment. High volume samples shall be taken at the negative air unit exhaust to ensure compliance with the levels required by the project specifications and/or any applicable regulations. One sample per eight-hour day per containment area shall be taken.

E. Final Clearance Samples: Visual inspections will be conducted at the completion of removal work. After air in containment has been exchanged by High Efficiency Particulate Absolute (HEPA) filtration at least 72 times, (air clearance) samples shall be taken to determine if air is cleaned below the specified rate. If not, the area must be cleaned again and a second set of clearance samples run. When the fiber count is below the specified level, a final set of samples shall be collected for analysis by phase contrast microscopy depending on the size of the abatement area. If these tests reveal that the air has been cleaned to the acceptable standards, the area may be opened for re-occupancy.

3.04 LABORATORY ANALYSIS

The third party independent industrial hygienist shall maintain testing facilities in the vicinity of the project site. An industrial hygiene monitoring setup with low-volume pumps, calibrators and all filtering needs, in addition to a fully-equipped laboratory for rapid sample analyses to the field, shall be included in this facility.

3.05 DAILY TESTING RECORDS

At the conclusion of every day's testing, the third party independent industrial hygienist shall have available copies of all air monitoring records of each containment area for the Engineer.

END OF SECTION

SECTION 13851

ADDRESSABLE FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

Furnish all labor, tools, equipment, materials, and accessories required to modify the existing addressable, electrically supervised, closed circuit fire alarm system as specified herein and as shown on the plans.

1.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

Section 16100 - ELECTRICAL WORK: Raceways.

1.4 PAYMENT PROCEDURES

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

1.5 SCOPE

A. System Description: This work includes designing and modifying existing multiplex, analog/addressable, programmable Edwards System Technology (EST) fire alarm system at the Kalanimoku Building. The system shall include all wiring, raceways, pull boxes, cabinets, outlet and mounting boxes, alarm notification appliances, and all other accessories and miscellaneous items required for a complete operating system even though each item is not specifically mentioned or described. The system layout on the drawings is conceptual.

B. Equipment, materials, installation, workmanship, inspection, and testing shall be in strict accordance with the required and advisory provisions of NFPA 72 except as modified herein.

C. Existing Fire Alarm Equipment: Existing fire alarm equipment shall be maintained fully operational until the new equipment has been tested and accepted. As new equipment is installed, it shall be tagged “NOT IN SERVICE” until the new equipment is accepted. Once the new system is completed, tested, and accepted by the State it shall be placed in service. All new equipment shall have tags removed and the existing equipment shall be tagged “NOT IN SERVICE” until removed from the building.

D. Equipment Removal: After acceptance of the work by the State, all existing equipment not connected to the new system shall be removed, all unused exposed conduit shall be removed, and all damaged surfaces shall be restored.

1.6 APPLICABLE PUBLICATIONS

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

1. Code of Federal Regulations (CFR):
   - 29 CFR 1910.36 Occupational Safety and Health Standards, Subpart E - Means of Egress, General Requirements
   - 29 CFR 1910.37 Occupational Safety and Health Standards, Subpart E - Means of Egress, General

2. National Electrical Manufacturers Association (NEMA):
   - NEMA ICS 1 Industrial Control and Systems

3. National Fire Protection Association (NFPA):
   - NFPA 1 (2018) Uniform Fire Code
   - NFPA 70 (2020) National Electrical Code
   - NFPA 72 (2016) National Fire Alarm Code

4. American Electricians Handbook by Croft (latest edition), McGraw-Hill.

5. Practical Electrical Wiring by Herbert P. Richter and W. Creighton Schwan, McGraw-Hill.

6. Copper Development, Inc.'s "Copper Building Wire Handbook."

7. National Electrical Safety Code.

8. Local ordinances and regulations of the City & County of Honolulu.

9. International Municipal Signal Association Inc. Specification No. 19-1, polyethylene insulated, polyvinyl chloride jacket signal cable.

10. Applicable fire alarm system manufacturer instructions for the equipment and materials supplied for the project.

1.7 SUBMITTALS

A. Submit in accordance with Section 01300 - SUBMITTALS.

B. Partial submittals will not be acceptable. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Do not commence work until all submittals have been reviewed and approved. Review and acceptance of shop drawings by Engineer shall not relieve the Contractor of responsibility to provide for a complete and proper installation.

1. Manufacturer's Catalog Data:
   a. Notification appliances.
   b. Wire and cables.

2. Shop (Working) Drawings:
   a. Riser Wiring Diagrams: Drawings shall be job-specific. "Typical" or "generic" drawings are not acceptable. The diagrams shall include but not be limited to the following:
      1) Locations of All System's Elements: Indicate all devices, junction boxes, and pass-through devices and entities where the cables and conductors can be accessed by personnel. Indicate the number of devices provided.
      2) Labeling of All Elements: All devices, junction boxes, etc. shall be labeled by functional designations, locations and numbers such as building alphabet, room function and room number, and handhole number.
      3) Fire Alarm Wiring and Color Codes: All cable and conductor color codes, the wire marking system and marker designation as specified herein shall be shown.

3. Equipment and/or Modular Systems Wiring Diagram: Wiring diagrams showing all equipment (control panel and annunciator in separate panel) modules, components and key internal cabinet wiring that should be accessed for tests and maintenance. Drawings shall include but not be limited to the following:
   a. Input and Output Circuits Labeling: Label the input and output circuits by circuit designations specified herein.
   b. Internal - External Circuits Interface Information: Only information that interfaces with external circuits and internal equipment wiring need be shown. All external wiring and circuits shall be shown in the riser diagram and the Contractor furnished Point-To-Point Wiring Diagrams.
      1) Changes in or deletion of the modular system wiring diagrams shall not require changes to the riser diagrams and the Contractor furnished Point-To-Point Wiring Diagrams and vice versa except for the panel deletion or change.

4. Design Data:
   a. Standby battery capacity calculations shall list the type of devices and modules, quantities, unit amperage draw for standby and alarm conditions, total amperage draw and battery amp/hour rating.

   b. Provide detailed voltage drop calculations for new or modified notification appliance circuits.

   c. Provide data on each new or modified circuit to indicate that there is at least 25 percent spare capacity for notification appliances.

5. Operations and Maintenance Manual: Provide as follows:

a. The manual may be provided in several volumes if so approved by the Engineer.
b. All drawings shall be folded to letter size by individual sheets so they can be retained in the manual.
c. The manual shall contain the following:
    1) Manufacturer's Printed Equipment/System Operations and Maintenance Manual, and Device Brochures:
        a) Start-up, operating, preventative maintenance, adjustment and troubleshooting procedures, and parts list.
        b) System Control Diagrams.
        c) Internal equipment wiring diagrams.
    2) Manufacturer's Representatives: The names, addresses and phone numbers of the fire alarm system manufacturer, the nearest manufacturer's representative, and the nearest supplier of the manufacturer's equipment and parts.
    3) Fire Alarm System Test Results: Provide completed test data sheets with the recorded measured data obtained during pre-final testing in the designated spaces and a printout of the equipment program. The test plan shall be developed in accordance with NFPA 72, Chapter 7. Submit the following information:
        a) Test information applicable for the project.
        b) Standard attendance signature sheets.

6. As-Built Drawings: Submit in accordance with Section 01300 - SUBMITTALS Upon completion and before final acceptance of the work, submit complete set of as-built drawings of the system for record purposes. Drawings shall include all components and circuit diagrams complete with conductor color codes and a listing of initiating devices.

7. Qualifications of the fire alarm system installer and technician as stipulated in item entitled "QUALITY ASSURANCE" hereinbelow.

8. Guaranty and Certificate: Submit guaranty as stipulated in item entitled "GUARANTY AND CERTIFICATE" hereinbelow.

9. Written notification of all tests and test results as specified in item entitled "TESTING" hereinbelow.

1.8 QUALITY ASSURANCE

A. Qualification of Installer: Installation shall be accomplished by an electrical contractor with a minimum of 5 years' experience in the installation of fire alarm systems in the State of Hawaii. The services of a technician provided by the control equipment manufacturer shall be provided to supervise installation, adjustments, and tests of the system. Prior to installation, submit data for approval by the Engineer showing that the Contractor has successfully installed addressable, programmable analog intelligent interior fire alarm systems of the same type as specified herein, or that the Contractor has a firm contractual agreement with a subcontractor having such required experience. Include the names and locations of at least 2

installations where the Contractor or the subcontractor referred to above, has installed such systems. Indicate the type and design of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 18 months. Submit names and phone numbers of points of contact at each site.

B. Qualifications of System Technician: Installation drawings, shop drawings, and "as-built" drawings shall be prepared by, or under the supervision of, a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein and is currently certified by the National Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level-III certification in Fire Alarm Systems program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings.

C. Regulatory Requirements: Devices and equipment for fire alarm service shall be listed by Underwriters Laboratories, Inc. or approved by the Factory Mutual System or listed by other nationally recognized testing laboratories.

D. Requirements for Fire Protection Service: Equipment and material shall have been tested by Underwriters Laboratories, Inc. and listed in UL FPED or approved by Factory Mutual and listed in FM P7825. Where the terms "listed" or "approved" appear in this specification, they shall mean listed in UL FPED or FM P7825. The omission of these terms under the description of any item of equipment described shall not be construed as waiving this requirement.

E. Standard Products: Materials and equipment shall be standard new products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least one year prior to bid opening. Select material from one manufacturer, where possible, and not a combination of manufacturers, for any particular classification of materials.

F. Modification of References: In NFPA publications referred to herein, consider advisory provisions to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears.

1.9 GUARANTY AND CERTIFICATE

A. The Contractor shall guaranty and certify in writing all work in this section for period of one year. Should any equipment or material fail due to defective equipment, material or workmanship within this period, the Contractor shall replace the item at no cost to the State.

B. The one-year guaranty shall start at the end of 30 consecutive days of trouble free operation after certification by the Fire Department and acceptance by the State, whichever date is the latest.

PART 2 - PRODUCTS

2.1 MANUFACTURER QUALIFICATIONS

All components of each new system shall be provided by a single manufacturer, compatible with the existing Edwards EST-3 fire alarm system, shall be of current design and shall be in regular and recurrent production. Provide design, materials, and devices for a protected premises fire alarm system, complete, conforming to NFPA 72, except as otherwise or additionally specified herein.

2.2 SYSTEM DESIGN

A. Notification Appliances:

1. Visual Alarm Signals: Provide strobe light visual alarm signals which operate on a supervised 24 volt DC circuit. The strobe lens shall comply with UL 1971 and conform to the Americans with Disabilities Act. The light pattern shall be disbursed so that it is visible above and below the strobe and from a 90 degree angle on both sides of the strobe. The strobe flash output shall be a minimum of 15 candela based on the UL 1971 test. The strobe shall have a xenon flash tube. All visual alarms shall be synchronized.

2. Fire Alarm Speakers: Provide fire alarm speakers conforming to UL 1480 having a minimum of 4 tap settings and separate terminations for each in and out connection. Tap settings shall include taps of 1/4, 1/2, 1, and 2 watts. Speaker shall initially utilize the 1/2 watt tap in the system. Speakers shall have an output rating of 84 dBA at 10 feet as determined by the reverberant room test; data on peak output as determined in an anechoic chamber is not suitable. All speakers shall be synchronized.

3. Notification appliances and mounting plates shall be flush mounted and have a red finish.

4. Connections: Provide screw terminals for each notification appliance. Terminals shall be designed to accept the size conductors used in this project without modification.

B. System Wiring:

1. Alarm Wiring: Notification appliance conductors shall be Type THHN/THWN, #14 AWG minimum. Type TW is not permitted. Speaker circuits shall be copper, No. 16 AWG size conductors at a minimum. Wire size shall be sufficient to prevent voltage drop problems. Circuits operating at 24 VDC shall not operate at less than 21.6 volts. Circuits operating at any other voltage shall not have a voltage drop exceeding 10 percent of nominal voltage. Shielded wiring shall be utilized where recommended by the manufacturer. For shielded wiring, the shield shall be grounded at only one point, which shall be in or adjacent to the FACP. Color coding is required for circuits and shall be maintained throughout the circuit.

PART 3 - EXECUTION

3.1 EXAMINATION OF THE DRAWINGS AND SPECIFICATIONS

Confirm and coordinate voltages and requirements of equipment furnished by other trades which will be connected to the fire alarm system. They include any equipment connected to the fire alarm system. Include the above information on the field-posted as-built drawings.

3.2 EXAMINATION OF SITE CONDITIONS

A. Notification appliances and other equipment and devices shall be installed in the locations and heights shown on the drawings and/or as specified herein.

B. The location of the equipment and devices shown on the plans are approximate. Before installing, the Contractor shall study adjacent construction, verify all dimensions and sizes of equipment at the job site and perform installation in what he considers the most logical manner.
   1. Any changes from the locations shown on the drawings must be approved by the Engineer and shown on the “field-posted as-built” drawings.

   2. Any device may be relocated within 10’-0” before installation at the direction of Engineer without additional charge to State.

3.3 INSTALLATION

A. Protect dissimilar metals with approved fittings and treatment.

B. All metallic conduits and boxes shall be grounded with a green wire ground conductor.

C. Equipment Installation: Equipment, materials, installation, workmanship, inspection, and testing shall be in accordance with NFPA 70, NFPA 72, and as modified herein.
   1. Notification Appliances: Locate notification appliances where shown on the drawings.

D. Cables and Conductors:
   1. Conductors shall not be installed in the same conduits, ducts, junction boxes, etc. with non-fire alarm circuits. 120 volt AC fire alarm circuit conductors shall not be in the same cable nor installed with cables and other conductors in the same conduits, ducts, enclosures, junction boxes, etc. with 24 volt DC fire alarm circuits.

   2. Conductors shall be installed in continuous lengths. Splices shall be made in junction boxes by terminating wires with wirenut connections.

   3. Cable pulling tensions shall not exceed manufacturer's recommended pulling tensions.

4. Wire-nut connectors: Permitted for connections in above grade locations only, in junction boxes and equipment and to devices that are not available or manufactured with screw-type connections.

5. Multi-conductor cable green, white, and gray colors shall not be used.

E. Field Touch-up Painting: Touch-up painted surfaces and fire alarm system components damaged during installation to match the existing or specified paint and color.

3.4 TESTING

A. Disconnection and Removal of Existing System:
1. The existing fire alarm system shall remain in operation at all times during the modifications to the system. The Contractor shall take precautions to avoid any accidental activation of the existing fire alarm system. When making modifications to the existing systems, the Contractor shall minimize the time the existing system is out of service. Prior to any impairment of the existing system the Contractor shall notify the State and County Fire Department. The Contractor shall comply with 29 CFR 1910.36 and 29 CFR 1910.37. No impairment shall exceed 4 hours. The Contractor shall establish a fire watch to monitor the impaired area until the entire fire alarm system is returned to full operation. The Contractor shall schedule outages 30 days in advance.

2. Disconnect and remove the existing fire alarm systems where indicated and elsewhere in the specification.

3. Properly dispose of fire alarm outlet and junction boxes, wiring, conduit, supports, and other such items.

B. Testing of the Fire Alarm System:
1. The Contractor and Authorized Fire Alarm Contractor shall conduct an operational test of the existing fire alarm system prior to any work or modifications to the existing fire alarm system. Test shall be witnessed by the Engineer.

2. Arrange with the Engineer for a pre-final fire alarm system test and inspection. The test and inspection shall demonstrate that all Contractor-installed fire alarm system equipment, devices cables and conductors are operating acceptably and have been installed in accordance with this specification.
   a. Accordingly, the test demonstrates that the system is ready for a final test of the overall fire alarm system.
   b. Representatives at the pre-final test shall include the Contractor, fire alarm system manufacturer's representative, user, and Engineer. Representatives at the Final test shall include all the foregoing representatives and the County Fire Department Inspector, if required.

3. Preliminary Test Results: Include the control panel and initiating and indicating devices, a unique identifier for each device with an indication of test results, and signature of the factory-trained technician of the control panel manufacturer and

equipment installer. With reports on preliminary tests, include a hard copy of printer output information from preliminary testing, i.e. download historical file so that all test data is available for State review.

a. Tests:

1) Preliminary Testing: Conduct preliminary tests to ensure that all devices and circuits are functioning properly. Tests shall meet the requirements of paragraph entitled "Minimum System Tests" of this section. After preliminary testing is complete, provide a letter certifying that the installation is complete and fully operable to the State a minimum of 7 calendar days before the formal acceptance test date required in the paragraph below. Without the submission of this report, the final acceptance test is automatically canceled.

4. Formal Acceptance Testing: Notify the Engineer in writing when the system is ready for final acceptance testing. Submit request for test at least 7 calendar days prior to the test date. A final acceptance test will not be scheduled until the O&M Manuals are submitted and the following are provided at the job site:

a. Marked-up red line drawings of the system as actually installed.

b. Minimum System Tests: Test the system in accordance with the procedures outlined in NFPA 72. The required tests are as follows:

1) Verify the absence of unwanted voltages between circuit conductors and ground. The tests shall be accomplished at the preliminary test with results available at the final system test.

2) Verify that the control unit is in the normal condition as detailed in the manufacturer's operating and maintenance manual.

3) Test each new or modified indicating device and circuit for proper operation and response at the control unit. In addition, 10 percent of existing, non-related devices shall be tested to confirm that software changes have not altered the function of the system.

4) Test the system for all specified functions in accordance with the contract drawings and specifications and the manufacturer's operating and maintenance manual.

5) Determine that the system is operable under trouble conditions as specified.

6) Visually inspect all wiring.

7) Verify that red-line drawings are accurate.

8) Measure voltage readings for modified circuits to assure that voltage drop is not excessive.

9) Test the battery charger and batteries.

10) Verify that all software control and data files have been entered or programmed into the FACP. Hard copy records and 2 identical CD copies of the software and data files shall be provided to the Engineer.

11) Measure and record the ambient sound pressure level and the alarm sound pressure levels in each area or room. Tests shall be conducted with the door closed.

C. Concealed Work: Concealed work re-opened and re-closed at random during the formal inspection as requested by the Engineer shall be done at no additional cost to the State.

D. Testing Tools and Equipment: The Contractor shall provide the tools and equipment, including handheld radios, etc. necessary to accomplish the testing.

END OF SECTION

DIVISION 16 - ELECTRICAL

SECTION 16011

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

A. This section specifies the general electrical requirements for all labor, materials, equipment, and services provided under DIVISION 16 - ELECTRICAL.

B. Related Work Described Elsewhere: Section 13851 - ADDRESSABLE FIRE ALARM SYSTEM.

1.3 SUMMARY

A. The Contractor under this Division shall provide all labor, materials, equipment, supervision, and services required for the construction of the electrical systems. The finished installations shall be complete, operable and shall include all work specified herein and shown on the Drawings.

B. The work shall include complete testing of all equipment and wiring at the completion of the work and making any minor connection changes or adjustments necessary for the proper functioning of the system and equipment. All systems shall be properly adjusted and in working order at the time of final acceptance.

C. All miscellaneous metal-work and painting shall conform to the applicable requirements of the detailed equipment specifications as prescribed in appropriate sections.

D. It is the intent of these Specifications and other Contract Documents to require an installation complete in every detail. Consequently, the Contractor will be responsible for minor details or for any special construction which may be found necessary to properly furnish, install, adjust, test, and place in successful and continuous operation, the entire electrical system, and the cost of same shall be included in the contract price.

1.4 DESCRIPTION OF WORK

Work specified in this Division shall include, but not be limited to the following:

1. Complete electrical system wiring including branch circuits, outlets, and control devices.

2. Fire alarm system raceways.

3. Testing.

1.5 REFERENCES

A. Comply with local ordinances; National Electrical Code; National Electrical Safety Code; applicable regulations of the National Board of Fire Underwriters; specifications of ANSI, NEMA, UL, IES, and IPCEA; and regulations of the City & County of Honolulu.

B. In the event of conflict between pertinent codes and regulations, and the requirements of the referenced standards, or those indicated in Specifications and on drawings, the provisions of the more stringent shall govern.

1.6 SUBMITTALS

A. Submit in accordance with Section 01300 SUBMITTALS.

B. Certificates: Submit written certification that electrical systems are complete and operational as stipulated in item entitled "DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS" hereinbelow.

C. Test records.

D. Warranty: Submit warranty as stipulated in item entitled "WARRANTY" hereinbelow.

E. As-Built Drawings: Submit in accordance with Section 01300 SUBMITTALS.

1.7 QUALITY ASSURANCE

A. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Engineer. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

B. Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design, and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where 2 or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section.

C. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

D. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70.

1.8 COORDINATION

A. Refer to all project Drawings and to all Sections of the project Specifications. Coordinate and fit all work accordingly so that all electrical outlets and equipment will be properly located and readily accessible. The Drawings indicate the relation of wiring and connections and must not be scaled for exact locations.

B. Verify all construction dimensions at the project and make changes necessary to conform to the building as constructed. Work improperly installed due to lack of construction verification shall be corrected at the Contractor's expense.

C. Work shall be scheduled to avoid delays, interferences, and unnecessary work. If any conflicts occur, necessitating departures from the Drawings and Specifications, details of departures and reasons therefore shall be submitted immediately for consideration by the Engineer.

1.9 DELIVERY, HANDLING AND STORAGE

A. Deliver all materials of this Division in manufacturer's original unopened packages or containers with label intact and legible.

B. Use means necessary to protect the materials of this section before, during and after installation; to protect the installed work and materials of all other trades; and to protect the original structure, work, and materials of the State.

C. In the event of damage, immediately make all repairs and replacements necessary to the acceptance of the Engineer and at no additional cost to the State.

1.10 DRAWINGS AND SPECIFICATIONS

A. Electrical system drawings are diagrammatic and symbolic. Locations of outlets, devices, raceways, apparatus, etc., shown are approximate and shall be installed with the required maintenance and code clearances and to avoid conflict with other systems and trades. Visit site and verify lineal footages required and check scales and dimensions shown on architectural drawings prior to bidding to verify locations, routing and lineal footages of electrical work required for inclusion into bid. Study the project drawings and specifications and make installation in most logical manner for eye appeal and coordination with other systems and trades. Unless dimensioned or noted otherwise, orderly configuration and visual composition are fully intended.

B. Include additional components and wiring which are not shown or specified herein but are required for proper control and operation to provide for a complete and operable system within intent indicated on the drawings and specifications.

C. Study the project drawings and specifications prior to bidding and provide additional wiring including apparatus and devices for equipment furnished by others without additional cost.

D. Relocate devices, apparatus and associated wiring including raceways, from locations shown, without additional cost, for code compliance and to avoid conflict with other systems or trades, structures, utilities and when directed before installation.

1.11 WARRANTY

A. Installation shall be complete in every detail as specified and ready for use. Unless otherwise indicated, any items supplied by Contractor developing defects of design, construction, or quality within one year of final acceptance by Engineer shall be replaced by such new materials, apparatus, or parts to make such defective portion of the complete system conform to the true intent and meaning of the Drawings and Specifications at no additional cost to the State.

B. The warranty shall be countersigned by the General Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS AND WORKMANSHIP

A. All materials shall conform to the latest issue of all applicable standards as established by NEMA, NFPA, ANSI, IEEE, IES, ASTM and Underwriters' Laboratories, and shall bear the manufacturer's name and trade name and when available, the Underwriters' Label.

B. Neat appearances in the finished work will be required. Only experienced electrical workers shall be employed for the electrical installation.

C. All work not installed and completed in accordance with the latest rules and regulations of the NEC, OSHA and all local ordinances shall be removed and reinstalled correctly at the Contractor's expense.

PART 3 - EXECUTION

3.1 GENERAL

A. Install all electrical materials and equipment in accordance with manufacturer's recommendations and as accepted by the Engineer for the seismic zone classification at the project site in accordance with the Building Code.

B. Cut, break, drill and patch as required, to install electrical system. Repair any surface damaged or marred by notching, drilling, or any other process necessary for installation of electrical work. Patch any damaged surfaces to match the existing surface.

C. The Electrical Contractor shall coordinate his work with other trades to avoid conflicts with architectural elements of this project.

3.2 JOBSITE CONDITIONS

A. These specifications are accompanied by construction drawings including building plans showing locations of outlets, switches, devices, and other electrical equipment. The locations are approximate and before installing, study adjacent architectural details and make installation in most logical manner. Any device may be relocated within 10'-0" before installation at the direction of the Engineer without additional cost to the State.

B. Before installing, verify all dimensions and sizes of equipment.

C. Verify that electrical system may be installed in strict accordance with the original design, the Drawings and Specifications and the manufacturer's recommendations.

D. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.3 DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

A. Submit written certification that electrical systems are complete and operational. Submit certification with Contractor's request for final review.

B. At the time of final review of electrical work, demonstrate the operation of electrical systems. Provide labor, apparatus, and equipment for systems' demonstration. The various tests shall be under the direction and supervision of the Engineer.

C. The Contractor shall provide all test equipment, materials, labor, and temporary power hook-ups to perform start-up and all tests as required, to obtain final field acceptance from the State. All tests shall be conducted in the presence of the Engineer or his representative. All test procedures shall conform to this specification and applicable standards. (ANSI, IEEE, NEMA, OSHA, NFPA, NETA, etc.)

D. The Contractor shall be responsible for all tests and test record. Testing shall be performed by and under the immediate supervision of the Contractor. Test records shall be kept for each piece of equipment. Copies shall be furnished to the Engineer for his review and/or acceptance.

E. A visual inspection of all electrical equipment, to check for foreign material, tightness or wiring and connection, proper grounding, matching nameplate charts with specification, etc., shall be made prior to actual testing.

END OF SECTION

SECTION 16100

ELECTRICAL WORK

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

As specified in Section 01019 - GENERAL SPECIFICATIONS, Special Provisions, and the General Conditions of the Contract.

1.2 DESCRIPTION OF WORK

This section includes, but is not limited to, electrical systems as indicated in the drawings.

1.3 SUMMARY

SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS applies to this section with additions and modifications specified herein.

1.4 APPLICABLE PUBLICATIONS

The publications cited within this specification form a part of this specification to the extent referenced. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials shall be new and those items listed by the Underwriters' Laboratories shall bear "UL" label of approval.

B. Electrical equipment shall be supplied through the manufacturer's designated representative by a local distributor.

C. Proof of compliance shall be furnished when shop drawings are submitted.

D. Where 2 or more similar type items are furnished, all shall be of the same manufacture, e.g., safety switches shall be of the same manufacturer unless otherwise noted.

2.2 RACEWAYS

A. Electrical Metal Tubing (EMT): Thin walled steel tubing, zinc-coated. ANSI C80.3.

B. Fittings for EMT: UL 514B. Ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514B.
   1. EMT: Steel compression type.

2.3 OUTLET BOXES AND COVERS

A. Outlet and Small Junction Boxes: Nominal 4 inches square, 2 1/8 inches minimum depth exclusive of plaster ring, pressed steel, galvanized for corrosion protection.

B. Extension Rings for Outlet Boxes: Pressed steel, zinc-coated for corrosion protection.

2.4 WIRING DEVICES AND DEVICE PLATES

A. Toggle Switches: Switches: Brown, 20A, 120/277V, non-mercury quiet type, specification grade with nylon body. Provide 3-way switches, as indicated.

B. Device Plates: Stainless steel Type 302, gangs as required.

2.5 CONDUCTORS

A. Solid or stranded copper, sizes according to American Wire Gauge, as shown on Drawings and #12 AWG minimum unless otherwise indicated. Stranded conductors only for #8 AWG and larger. All wiring shall be color coded.

B. Branch Circuits: Type THWN.

C. Conductors for Equipment Connection: Stranded flexible type.

D. Cabling: Not acceptable.

E. Fire Alarm Conductors: As indicated in SECTION 13851 - ADDRESSABLE FIRE ALARM SYSTEM.

F. Color Coding: Provide for branch circuit conductors. Color shall be green for grounding conductors and white for neutrals; except where neutrals of more than one system are installed in same raceway or box, other neutrals shall be white with a different colored (not green) stripe for each. Color of ungrounded conductors in different voltage systems shall be as follows:

1. 480/277 Volt, 3-Phase
    a. Phase A – brown.
    b. Phase B – orange.
    c. Phase C - yellow

2.6 SPLICES AND TERMINATION COMPONENTS

UL 486A-486B for wire connectors and UL 510 for insulating tapes. Connectors for No. 10 AWG and smaller diameter wires shall be insulated, pressure-type in accordance with UL 486A-486B or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

2.7 HARDWARE, SUPPORTS, BACKING, ETC.

Provide all hardware, supports, backing and other accessories necessary to install electrical equipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Electrical installations, including ducts, plenums, and other air-handling spaces, shall conform to requirements of NFPA 70 and IEEE C2 and to requirements specified herein.

B. Conductors:

1. Provide insulated conductors installed in EMT, except where specifically indicated or specified otherwise or required by NFPA 70 to be installed otherwise. Utilize non-wax type lubricants for pulling, chemically neutral to insulation and sheath. Mechanical means for pulling to be tongue-limiting type and not be used for #2 AWG wires and smaller. Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated green equipment grounding conductor for circuit(s) installed in conduit and raceways.

2. Clean all raceways, boxes, and enclosures before pulling wires and cables. Form neatly in enclosures for minimum of cross-overs.

C. Conduit Installation:

1. Unless indicated otherwise, conceal conduit within finished walls, ceilings, and floors. Keep conduit minimum 6 inches away from parallel runs of flues and steam or hot water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project.

2. Use conduits with approved coupling and connectors. All cuts square, using saw. Ream the ends. Bends made with approved tools. Reject flattened or crushed conduit. No running thread. Bushing and 2 locknuts at connection to boxes and enclosures.

3. All raceways shall be blown and swabbed after installation to remove any water then immediately sealed to prevent water infiltration during construction. Raceways must remain sealed except when pulling conductors. If water is discovered during the warranty period the Contractor shall remove water from raceways and associated boxes at no additional cost to the State.

4. Minimum conduit diameter shall be 3/4-inch trade size except that 1/2-inch conduit will be permitted for branch circuit (non-signal) raceways with a maximum of 2 current carrying conductors #10 AWG and smaller.

5. Restrictions Applicable to Flexible Conduit: Provide flexible steel conduit between 3 and 6 feet in length for final connections to recessed lighting fixtures only. Flexible

conduit not allowed for all other installations. Install flexible conduit to allow 20 percent slack. Minimum flexible steel conduit size shall be 1/2 inch diameter.

6. Conduit Support: Support conduit by pipe straps, wall brackets, hangers, or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; and by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. Load applied to fasteners shall not exceed 1/4 proof test load. Fasteners attached to concrete ceiling shall be vibration resistant and shock-resistant. In suspended-ceiling construction, run conduit above ceiling. Do not support conduit by ceiling support system. Conduit and box systems shall be supported independently of both (a) tie wires supporting ceiling grid system, and (b) ceiling grid system into which ceiling panels are placed. Supporting means shall not be shared between electrical raceways and mechanical piping or ducts. Installation shall be coordinated with above-ceiling mechanical systems to assure maximum accessibility to all systems. Spring-steel fasteners may be used for lighting branch circuit conduit supports in suspended ceilings in dry locations.

7. Directional Changes in Conduit Runs: Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of obstructions.

8. Locknuts and Bushings: Fasten conduits to sheet metal boxes and cabinets with 2 locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use at least minimum single locknut and bushing. Locknuts shall have sharp edges for digging into wall of metal enclosures. Install bushings on ends of conduits, and provide insulating type where required by NFPA 70.

D. Boxes, Outlets, and Supports:
   1. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Provide separate boxes for flush or recessed fixtures when required by fixture terminal operating temperature; fixtures shall be readily removable for access to boxes unless ceiling access panels are provided.

   2. Install boxes serving opposite sides of walls a minimum of 6 inches apart to minimize noise transmission.

E. Conductor Identification: Provide conductor identification within each enclosure where tap, splice, or termination is made. For conductors No. 6 AWG and smaller diameter, color coding shall be by factory-applied, color-impregnated insulation. For conductors No. 4 AWG and larger diameter, color coding shall be by plastic-coated, self-sticking markers;

colored nylon cable ties and plates; or heat shrink-type sleeves. Identify control circuit terminations in accordance with manufacturer's recommendations.

F. Grounding and Bonding: Provide in accordance with NFPA 70. Ground exposed, non-current-carrying metallic parts of electrical equipment, metallic raceway systems, and grounding conductor in raceways.

1. Ground connections to equipment, raceways, and other metallic parts directly exposed to ungrounded conductors by insulated conductors, No. 12 minimum, AWG copper, N.E.C. Type TW, green insulation, or continuous approved metal raceways unless indicated otherwise.

2. All grounding wire runs where exposed and within building in raceways. Run equipment ground wires together with circuit conductors.

3.2 FIELD QUALITY CONTROL

Inspect conduit system for completeness, loose couplings, and proper support.

END OF SECTION