

CONSTRUCTION SERVICES FOR RESTORATION OF BLDG 90T,  
KALAELOA, OAHU, HAWAII, STATE OF HAWAII, DEPARTMENT  
OF DEFENSE, FMO, JOB NO. CA-202209-C.

ISSUED BY:  
STATE OF HAWAII  
DEPARTMENT OF DEFENSE  
3949 DIAMOND HEAD ROAD,  
HONOLULU, HAWAII 96816-4495  
TELEPHONE: 808-369-3567

April 2024

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STATE OF HAWAII  
DEPARTMENT OF DEFENSE  
OFFICE OF THE ADJUTANT GENERAL  
3949 DIAMOND HEAD ROAD  
HONOLULU, HAWAII 96816-4495

**NOTICE TO BIDDERS**

SEALED BIDS for furnishing labor, materials, tools and equipment for "CONSTRUCTION SERVICES FOR RESTORATION OF BUILDING (Bldg.) 90T, KALAELOA, OAHU, HAWAII, STATE OF HAWAII, DEPARTMENT OF DEFENSE, FMO, JOB NO. CA-202209-C" will be received in the Engineering Office, State of Hawaii, Department of Defense, located in Building 306-A, Room 228, 3949 Diamond Head Road, Honolulu, Hawaii, up to **2:00 P.M. on Wednesday, May 22, 2024** and will then and there be publicly opened and read aloud. Bids may also be mailed to State of Hawaii, Department of Defense, 3949 Diamond Head Road, Honolulu, HI, 96816-4495, **ATTN: HIENG, Room 228**. Bids must be received in the Engineering Office, Room 228, prior to the time and date fixed for opening to be considered. All bids received in the Engineering Office after the time and date fixed for opening will not be considered.

Bidders are advised that the Department of Defense facility at 3949 Diamond Head Road is a secure facility. In order to access the property, Bidders and/or their authorized personnel shall present a current driver's license or other form of official identification (with photograph) to the security personnel at the entry gate, and shall inform the security personnel of the building and room number they require access to (State Contracting Section 369-3491). Lack of official identification or knowledge of the building and room to which access is needed are grounds for denial of access onto the property.

Bidders should be aware and allow for security screening and random vehicle inspections. The state will not be responsible for late bids due to the afore mentioned reasons.

Proposed work consists of, but not limited to, the following:

- Replace sewer and waterlines serving the building.
- Removal of existing plumbing fixtures, piping, and accessories.
- Demolition work.
- Construct new toilet rooms.
- Painting.
- New lighting.
- Provide new electric tank type hot water heating system to support the restrooms.
- Change the exterior roofing and siding.
- Changing all windows in the structure.
- New building doors.
- Removal of existing HVAC systems, including equipment, ductwork, and accessories.
- Mechanically ventilate the electrical room, janitor's closet, and men's and women's restrooms.
- Disconnect existing electrical power switch within Building 785T which serves Building 90T will be disconnected and removed.
- Communication service.
- Pavement removal.
- Removal of tree stumps.
- See attached project's construction plans and specifications.

The estimated cost is between \$3,000,000.00 and \$3,750,000.00.

A Site Visit/Pre-bid meeting will be held on **MAY 10, 2024 at 1:00 pm**. Bldg 90T is located in Kalaeloa off of Enterprise Street, enter through gate into parking lot of Bldg. 90T, see attached map. Contractors are to meet Mr. Virgil Cadiente at the entrance to Bldg. 90T PARKING LOT prior to 1:00 pm. Please call Mr. Cadiente at (808) 844-6555 before 3:00 pm on **MAY 9, 2024** to register for the site visit. If no answer, please leave your company information, attendees names and a contact number, you may assume that you are registered for the site visit. All interested bidders and sub-contractors are welcome, but not required to attend.

All documents can be downloaded from the State Procurement Office website at <http://spo.hawaii.gov/> and at the State Department of Defense website at <http://dod.hawaii.gov/hieng/>. If prospective bidders obtain copies of the bid documents from sources other than the Contracting and Engineering Office address listed above, then bidders are responsible for registering by sending their company name, address, telephone and facsimile number, and email address via email to [jesper.h.andersen@hawaii.gov](mailto:jesper.h.andersen@hawaii.gov) with the subject line "**CA-202209-C CONSTRUCTION SERVICES FOR RESTORATION OF BLDG 90T, KALAELOA, OAHU, HAWAII**".

All requests for substitution, clarification of bidding documents, specifications and/or questions must be received via email to [jesper.h.andersen@hawaii.gov](mailto:jesper.h.andersen@hawaii.gov) with the subject line "**CA-202209-C Questions**" via email, prior to **TUESDAY, MAY 14, 2024, 2:00 pm**.

Late submittals for this solicitation will not be reviewed by this agency.

An Intent to Bid is NOT required to be submitted for this project.

Bidders are required to register on the Hawaii Compliance Express web site for all tax clearances by going to <http://spo.hawaii.gov/> click on "HCE" and registering there.

Bidders are responsible for checking for any addenda for this project. The addenda will be posted on the State Procurement Office web site under the project name at <http://spo.hawaii.gov/>

**HAWAII PRODUCTS' PREFERENCE.** In accordance with ACT 174, SLH 2022, effective June 27, 2022, Hawaii Products Preference shall not apply to solicitations for public works construction. Therefore, the Hawaii Products Preference shall not apply to this project.

**CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED.** If awarded a contract in response to this solicitation, offeror agrees to comply with HRS §11-355, which states that campaign contributions are prohibited from a State and County government contractor during the term of the contract if the contractor is paid with funds appropriated by the legislative body between the execution of the contract through the completion of the contract.

#### **REQUIREMENT FOR CONTRACTORS LICENSING CLASSIFICATIONS**

Due to the nature of the work contemplated bidder must possess a valid State of Hawaii Contractor's license in the appropriate **classification B is required.**

General Engineering Contractors holding an 'A' license and General Building Contractors holding a 'B' license 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.

Bidders are solely responsible to review the project requirements, determine the appropriate licenses required, and ensure that they possess and that the Subcontractor(s) listed in their OFFER FORM possess the necessary specialty licenses to perform the work for this project.

Kenneth S. Hara  
Major General  
Adjutant General

Posted on: April 30, 2024.

**CONSTRUCTION SERVICES FOR RESTORATION OF BUILDING 90T, KALAELOA, OAHU, HAWAII, STATE OF HAWAII, DEPARTMENT OF DEFENSE, FMO, JOB NO. CA-202209-C / PN15H00074**

Adjutant General  
State Department of Defense  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495

Dear Sir:

The undersigned has carefully read and understands the terms and conditions specified in the Specifications, and all documents attached hereto, and hereby submits the following offer to perform the work specified herein, all in accordance with the true intent and meaning thereof. The undersigned further understands and agrees that by submitting this offer, 1) he/she is declaring his/her offer is not in violation of Chapter 84, Hawaii Revised Statutes, concerning prohibited State contracts, and 2) he/she is certifying that the price(s) submitted was (were) independently arrived at without collusion.

The undersigned represents: **(Check / one only)**

- A **Hawaii business** incorporated or organized under the laws of the State of Hawaii; **OR**  
 A **Compliant Non-Hawaii business** not incorporated or organized under the laws of the State of Hawaii. Business shall be registered prior to award at the State of Hawaii Department of Commerce and Consumer Affairs Business Registration Division to do business in the State of Hawaii. State of incorporation: \_\_\_\_\_

Offeror is:

- Sole Proprietor     Partnership     Corporation     Joint Venture  
 Other \_\_\_\_\_

Federal I.D. No.: \_\_\_\_\_

Hawaii General Excise Tax License I.D. No.: \_\_\_\_\_

Payment address (other than street address below): \_\_\_\_\_  
City, State, Zip Code: \_\_\_\_\_

Business address (street address): \_\_\_\_\_  
City, State, Zip Code: \_\_\_\_\_

Respectfully submitted:

(x) \_\_\_\_\_  
Authorized (Original) Signature (\*1)

Date: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

\_\_\_\_\_  
Name and Title (Please Type or Print)

Fax No.: \_\_\_\_\_

\* \_\_\_\_\_  
**Exact Legal Name of Company (Offeror) (\*2)**

E-mail Address: \_\_\_\_\_

(\*2) If Offeror is a "dba" or a "division" of a corporation, furnish the exact legal name of the corporation under which the awarded contract will be executed:

(\*1)

Original signature in ink. If unsigned or the affixed signature is a facsimile or a photocopy, the offer shall be automatically rejected unless accompanied by other material, containing an original signature, indicating the Offeror's intent to be bound.

The undersigned has carefully examined the attached plans and specifications and hereby proposes to furnish at his own expense all labor, materials, tools and equipment necessary to construct all work as shown and called for, in strict accordance with the specifications, schedules and drawings pertaining thereto, all for the LUMP SUM of:

\_\_\_\_\_ DOLLARS (\$\_\_\_\_\_).

(Including the cost of delivery, unloading, freight charges, all applicable taxes, and other cost involved) and will fully complete all the work under this contract within 365 consecutive calendar days from the date of commencement specified by the written order of the Adjutant General including the date of said order.

**NOTE:**

1. This project falls under the requirement of the "Buy American Act".
2. Davis-Bacon Act prevailing wage rate or State wage rates apply to this contract.
3. Contract will be awarded based on the total lump sum bid.
4. A Site Visit/Pre-bid meeting will be held on **MAY 10, 2024 at 1:00PM**. Bldg 90T is located in Kalaeloa off of Enterprise Street, enter through gate into parking lot of Bldg 90T, see attached map. Contractors are to meet Mr. Virgil Cadiente at the entrance to BUILDING 90T prior to 1:00PM. Please call Mr. Cadiente at (808) 844-6555 **before 3:00PM on MAY 9, 2024** to register for the site visit. If no answer, please leave your company information, attendees names and a contact number, you may assume that you are registered for the site visit. All interested bidders and sub-contractors are welcome, but not required to attend.

All requests for substitution, clarification of bidding documents, specifications and/or questions must be received via email to [jesper.h.andersen@hawaii.gov](mailto:jesper.h.andersen@hawaii.gov) with the subject line "CA- 202209-C Questions" via email, prior to **TUESDAY, MAY 14, 2024, 2:00 pm**.

5. The State reserves the right to determine the extent of the contract by selecting and/or omitting bid items (not necessarily in sequence) to the extent required to come within the funds available for the project. The award of the contract shall be made to the responsible bidder whose total bid is the lowest.
6. **CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED**. If awarded a contract in response to this solicitation, offeror agrees to comply with HRS §11-355, which states that campaign contributions are prohibited from a State and County government contractor during the term of the contract if the contractor is paid with funds appropriated by the legislative body between the execution of the contract through the completion of the contract.
7. The Surety shall not be held liable beyond two (2) years of the project acceptance date.

## HAWAII PRODUCTS PREFERENCE

In accordance with ACT 174, SLH 2022, effective June 27, 2022, Hawaii Products Preference shall not apply to solicitations for public works construction. Therefore, the Hawaii Products Preference shall not apply to this project.

## APPRENTICESHIP AGREEMENT PREFERENCE

The estimated value of the public works contract is \$250,000 or more and the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (Act 17, SLH 2009) **shall apply**.

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 the 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 of Bidder's Participation – Form 1* verifying participation in an apprenticeship program registered with the DLIR. "Apprenticeable trade" shall have the same meaning as "apprenticeable occupation" pursuant to Hawaii Administrative Rules (HAR) §12-30-5.
  - a. The *Certification of Bidder's Participation – 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 *Certification of Bidder's Participation – Form 1* for each trade must be submitted with the bid. A facsimile or copy is acceptable to be submitted with the bid, however the signed original must be submitted within five (5) working days of the bid open date. If the signed original is not received within this timeframe, the preference may be denied. Previous certifications shall not apply.

- d. When filling out the *Certification of Bidder's Participation – Form 1*, the name of Apprenticiable 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 State Department of Labor and Industrial Relations website. "Registered apprenticeship program" means a construction trade program approved by and registered with the DLIR pursuant to HAR § 12-30-1 and §12-30-4.
  - e. The *Certification of Bidder's Participation – 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 of Bidder's participation – 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 (5) percent for evaluation purposes.
  5. Should the bidder qualify for other preferences, all applicable preference shall be applied to the bid price.
  6. If the winning bidder has submitted Form 1 with his bid packet, the Form 2 will be required the first week of each month for the prior month beginning with the month of the start of work.

#### CHARACTER OF WORKERS OR EQUIPMENT

The Contractor shall perform with his own organization, work amounting to not less than twenty percent (20%) of the total contract cost. The Engineer may require the Contractor to verify the percentage of work he will be providing with his own organization by furnishing pertinent information such as all of the actual subcontractor(s)' quotations he received for the bid. If requested, the Contractor shall provide such verification within 5 working days of the request.

#### CERTIFICATION FOR SAFETY AND HEALTH PROGRAM FOR BIDS IN EXCESS OF \$100,000

In accordance with HRS 396-18, by submitting this proposal, the undersigned certifies that his company 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).

## TAX CLEARANCES FROM THE STATE DIRECTOR OF TAXATION AND INTERNAL REVENUE SERVICE

Contractors are required to provide a state and federal tax clearance as a prerequisite to entering into a public contract of \$2,500 or more. To meet this requirement, all bidders shall submit valid tax clearances with their bid proposals when the bid is \$2,500 or more.

Failure to submit the required tax clearance may be sufficient grounds for the State to refuse to receive or consider the prospective bidder's proposal.

**In accordance with Act 190 Amendment to HRS 103D-310(c), required as a prerequisite** to entering into a contract, the contractor shall register on the Hawaii Compliance Express web site for all tax clearances by going to <http://vendors.ehawaii.gov> and registering there.

A Certificate of Vendor Compliance generated from this website should be included with their bid proposal. A Compliant status is required prior to awarding the contract.

## LICENSE

Due to the nature of the work contemplated, bidder must possess a valid State of Hawaii Contractor's license in the appropriate classification.

1. The Adjutant General or his designated representative reserves the right to reject any and/or all bids and waive any defects when, in his opinion, such rejection or waiver will be in the best interest of the State.
2. The award of the contract shall be conditioned upon funds being made available for these projects and further upon the right of the Adjutant General or his designated representative to hold all bids received for a period of ninety (90) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.
3. The liquidated damages per working day for failure to complete the work on time shall be at \$189.00 per working day or as stipulated in the General Conditions, whichever is higher.
4. By submitting this proposal, the undersigned is declaring 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.
5. Upon the acceptance of the proposal by the Adjutant General or his designated representative, the undersigned must enter into and execute a contract for the same and furnish a bond, as required by law. This bond shall conform to the provisions of Section 103D-324 of the Hawaii Revised Statutes and any law applicable thereto.



6. If the lowest bid received by the State exceeds the funds available for this project, the State reserves the right to negotiate with the lowest responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes, as amended, to reduce the scope of work and award a contract therefore.
7. This contract may be awarded as an informal contract as determined by the Adjutant General or his designated representative in accordance with the applicable Hawaii Revised Statutes as amended, whereby a purchase order will be executed and used as the formal contract.

Receipt of the following addenda issued by the Department is acknowledged by the day(s) of the receipt indicated below:

Addendum No. 1 \_\_\_\_\_ Addendum No. 2 \_\_\_\_\_  
Date  
Addendum No. 3 \_\_\_\_\_ Addendum No. 4 \_\_\_\_\_

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted. (See Special Notice to Bidders for information regarding addenda.)

**ALL JOINT CONTRACTORS & SUBCONTRACTORS TO ENGAGE ON THIS PROJECT**

The bidder certifies that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes, who will be engaged by the bidder on this project to perform the nature and scope of work indicated pursuant to Section 103D-302, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the bid.

The bidder further certifies that only those joint contractors or subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the bidder with his own employees. If no joint contractor or subcontractor is listed, it shall be construed that all of the work shall be performed by the bidder with his own employees.

All bidders must be sure that they possess and that the subcontractors listed in the proposal possess all the necessary specialty licenses needed to perform the work for this project. The bidder shall be solely responsible for assuring that all of the specialty licenses required to perform the work is covered in his bid.

The bidder shall include the license number of the joint contractors or subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor's Licensing Board may cause rejection of the bid submitted.

Complete Firm Name of Joint Contractor or Subcontractor for Lump Sum Bid

License Number

Nature and Scope of Work to be performed

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Enclosed herewith as required by law:

- Surety Bond
  - Certificate of Deposit
  - Certified Check
  - Cashier's Check
  - Share Certificate
  - Legal Tender
- (Check off Applicable)

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_).

\_\_\_\_\_  
\*Signature HAWAII GENERAL EXCISE TAX  
Title \_\_\_\_\_ I.D. NO. \_\_\_\_\_

\_\_\_\_\_  
Name of Company

\_\_\_\_\_  
Address LICENSE CLASSIFICATION  
\_\_\_\_\_  
AND/OR SUBCLASSIFICATION  
\_\_\_\_\_  
NO.

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Date

(CORPORATE SEAL)

\*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.

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

# FORM I

## CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17

<b>I. Bidder's Identifying Information</b>			
A. Legal Business Name: _____			
B. Project Bid Title & Reference No.: _____			
C. Contact Person's Name: _____			
1. Phone No.: _____		2. E-Mail: _____	
<b>II. Apprenticeable Trades To Be Employed*</b>			
<b>A. (List)</b>	<b>B. Apprenticeship Sponsor* (One Sponsor Per Form)</b>	<b>C. No. Enrolled</b> (# of apprentices currently enrolled as of bidder's request date)	<b>D. No. Completed</b> (# of apprentices who completed the apprenticeship program in the 12 months prior to request date)
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
<b>III. Bidder's Certification</b>			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
A. Name (Type) _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	
<b>IV. Apprenticeship Sponsor's Contact Information</b>			
A. Training Coordinator's Name: _____			
B. Address: _____			
C. Phone No.: _____		D. E-Mail: _____	
E. Fax No.: _____		_____	
<b>V. Apprenticeship Program Sponsor's Certification</b>			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
A. Name of Authorized Official _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	

\* 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 State Department of Labor and Industrial Relations website.

(Name of Corporation)  
Corporate Resolution

I, \_\_\_\_\_, Secretary of \_\_\_\_\_  
Corporation,  
a \_\_\_\_\_ Corporation, do hereby certify that the following is a full, true  
and correct copy of a resolution duly adopted by the Board of Directors of said corporation, at its  
meeting duly called and held at the office of the Corporation \_\_\_\_\_  
Street, \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, at  
which a quorum was present and acting throughout, and that said resolution has not been  
modified, amended or rescinded and continues in full force and effect:

“RESOLVED that any individual at the time holding the position of President, Vice  
President, Secretary or Treasurer be, and each of them hereby is, authorized to execute on behalf  
of the Corporation any bid, proposal or contract for the sale or rental of the products of the  
Corporation or for services to be performed by the Corporation, and to execute any bond  
required by any such bid, proposal or contract with the United States Government or the State of  
Hawaii or the City and County of Honolulu, or any County or Municipal Government of said  
State, or any department or subdivision of any of them.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said  
\_\_\_\_\_ Corporation this \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Secretary

(Names and Address of:)

President:

Vice President:

Secretary:

Treasurer:

## SPECIAL NOTICE TO BIDDERS - CONSTRUCTION

QUALIFICATIONS OF BIDDERS - Prospective bidders must be capable of performing the work for which bids are being called.

The Department of Defense no longer requires a submittal of "INTENTION TO BID" unless otherwise stated in the notice to bidders.

If two (2) or more prospective bidders desire to bid jointly as a joint venture on a single project, they must file an affidavit of joint venture with their notice of intention to bid or if no intent to bid is required, shall submit an affidavit of joint venture prior to bid opening. Such affidavit of joint venture will be valid only for the specific project for which it is filed. No further license is required when all parties to the joint venture possess current and appropriate contractor's licenses. Joint venture are required to be licensed in accordance with Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board when any party to the joint venture agreement does not hold a current or appropriate contractor's license.

The Adjutant General or his designated representative may, in accordance with Section 103D-310, Hawaii Revised Statutes, require the prospective bidder to submit answers to questions in the "Standard Questionnaire and Financial Statement for Bidders," on the form provided by the Department, properly executed and notarized, setting forth a complete statement of the experience of such prospective bidder and his organization in performing similar work and a statement of the equipment proposed to be used, together with adequate proof of the availability of such equipment, at least forty-eight (48) hours prior to the time advertised for the opening of bids. If the information in the questionnaire proves satisfactory, the bidder's proposal will be received. All information contained in the answers to the questionnaire shall be kept confidential. The questionnaire will be returned to the bidder after it has served its purpose.

If upon review of the Questionnaire, or otherwise, the bidder appears not fully qualified or able to perform the intended work, the Adjutant General or his designated representative shall, after affording the bidder an opportunity to be heard and if still of the opinion that the bidder is not fully qualified to perform the work, refuse to receive or to consider any bid offered by the prospective bidder.

Failure to complete the prequalification questionnaire, (IF SENT TO YOU), will be sufficient cause for the Department to disqualify a prospective bidder.

INTERPRETATION OF QUANTITIES IN BID SCHEDULE - When quantities for individual items of work are listed in the bid form for which respective unit prices are asked, said quantities are to be considered as approximate and are to be used by the Department only for the purpose of comparing on a uniform basis bids offered for the work. The Department does not, expressly or by implication, agree that the actual quantity of work

will correspond therewith. The undersigned agrees that his is satisfied with and will at no time dispute said estimated quantities as a means of comparing the bids.

After determining the low bidder by comparison of bids submitted in accordance with the proposal form, the Adjutant General or his designated representative reserves the right to increase or decrease the scope of the improvement.

On unit price bids, payment will be made only for the actual number of units incorporated into the finished project at the unit price bid.

It is understood and agreed that the contractor will make no claim for anticipated profit or loss of profit due to the Department's right to eliminate entirely portions of the work or to increase or decrease any or all of the quantities shown in the proposal form and/or scope of work.

CONTENTS OF CONTRACT FORMS – The Statement of Work will provide the location, description, and the contract time of the work contemplated for which a lump sum bid price is asked or containing a schedule of items, together with estimated quantities of work to be performed and materials to be furnished, for which unit bid prices and/or lump sum bid prices are asked.

Proposal forms will include a listing of joint contractor and/or subcontractors asking the name of each person or firm to be engaged on the project as a joint contractor or subcontractor.

All papers bound with or attached to the offer form shall be considered a part thereof and shall not be detached or altered when the bid is submitted.

The plans, specifications and other documents designated in the bid document package, will also be considered a part thereof whether attached or not.

BIDDERS RESPONSIBILITY FOR EXAMINATION OF PLANS, SPECIFICATIONS, SITE OF WORK, ETC. - The bidder shall examine carefully the site work contemplated and the proposal, plans, specifications, supplemental specifications, special provisions and contract and bond forms therefore. The submission of a bid shall be considered as a warranty that the bidder has made such examination and is satisfied with the conditions to be encountered in performing the work and with the requirements of the plans, specifications, supplemental specifications, special provisions, contract and bond.

No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge of the requirements of the work to be accomplished or the conditions to be encountered in performing the project.

Where an investigation of subsurface conditions has been made by the Department in respect to foundation or other design, the bidders may inspect the records of the Department as to such investigation, including examination of samples, if any. It is

understood, however, that any such information furnished is for the bidders' convenience only and no assurance is given that conditions found at the time of subsurface investigation, such as the presence or absence of water, will be conditions that prevail at the time of construction.

When the contract plan includes a log of test borings showing a record of the data obtained by the Department's investigation of subsurface conditions, said log represents only the opinion of the Department as to the character of material encountered by it in its test borings and there is no warranty, either expressed implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that unforeseen developments may not occur.

Information regarding the site of work given on the drawings or specifications has been obtained by the Department and is believed to be reasonably correct, however, it is the responsibility of the bidder to verify all such information. Any utilities that the Contractor encounters during the progress of the work, such as telephone ducts, electric ducts, water lines, sewer lines, electric lines and drainage pipes, whether shown or not on the contract plans, shall not be disturbed or damaged unless otherwise instructed in the plans and specifications.

In the event the utilities are damaged or disturbed by the Contractor, the Contractor shall be held liable for the damage or disturbed utilities which were:

- A. Shown on the plan.
- B. Located and exposed on the job as it progressed.
- C. Pointed out to the Contractor in the field.

The Contractor shall repair the damaged or disturbed utilities to the existing condition at no cost to the Department or the project. Any damage claims due to the disruption of service caused by the utilities being damaged shall be paid by the Contractor who shall save harmless the Department from all suits, actions, or claims of any character brought on account of such damages.

In the event utilities which were not shown on the plans and specifications are damaged or disturbed by the Contractor, the Contractor shall not be held liable but shall notify the Engineer. Upon instruction from the Engineer, the Contractor shall repair all damages which shall be considered to be additional work.

Utilities which must be relocated due to construction and not so indicated in the plans and specifications shall also be considered to be additional work. The Contractor shall not in any case, if he encounters underground utilities, proceed with any work until he has notified the Engineer.

No information derived from such inspection of records of subsurface investigations made by the Department or from the Engineer or from his authorized representative or from maps, plans, specifications or drawings will in any way relieve the Contractor from



any risk or from properly fulfilling all the terms of the contract. The log tests borings if included in the plans are only for the convenience of the bidder and do not constitute a part of the contract. The Contractor is solely responsible for all assumptions, deductions, or conclusions he may make or derive from the subsurface records furnished.

ADDENDA AND INTERPRETATIONS - Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated via email as directed in the Notice to Bidders and must be received by the Engineering Office, Department of Defense, no later than the date stated in the Notice to Bidders for submittal of questions. Any interpretation, if made, and any supplemental instructions will be in the form of written addenda. All addenda will be posted on the State Procurement Office website <http://spo.hawaii.gov> . Failure of any bidder to receive any such addendum or interpretations shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

PREPARATION OF PROPOSAL - The bidder's proposal must be submitted on the proposal form furnished by the Department. The proposal must be prepared in full accordance with the instructions therein. The bidder must state, both in words and numerals, the lump sum price at which the work contemplated is proposed to be done. These prices must be written in ink or typed. Prices written in pencil are not acceptable. In case of a discrepancy between the prices written in words and those written in figures, the words shall govern over the figures. The bidder shall sign the proposal in the spaces provided with ink.

If the proposal is made by an individual, his name and post office address must be shown in the space provided. If made by a partnership, the name and post office address of each member of the partnership must be shown and the proposal signed by all partners or evidence in the form of a partnership agreement must be submitted showing the authority of the partner to enter, on behalf of said partnership, into contract with the State. If made by a corporation, the proposal must show the name, titles, and business address of the president, secretary and treasurer and also evidence in the form of a corporate resolution must be submitted showing the authority of the particular corporate representative to enter on behalf of said corporation into contract with the State. (See sample). If made by a joint venture the name and post office address of each member of the individual form, partnership or corporation comprising the joint venture must be shown with other pertinent information required of individuals, partnerships or corporations as the case may be. The proposal must be signed by all parties to the joint venture or evidence in the form of a Joint Venture Agreement must be submitted showing the authority of the Joint Venture's representative to enter on behalf of said Joint Venture into contract with the State.

Pursuant to the requirements of Section 103D-302, Hawaii Revised Statutes, each bidder shall include in his bid the name of each person or firm to be engaged by the bidder on the project as joint contractor or subcontractor indicating also the nature and scope of work to be performed by such joint contractor and/or subcontractor.

**BID SECURITY** - No proposal totaling \$25,000 or more will be considered unless accompanied by one of the following forms of bidder's security:

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

B. Legal Tender.

C. Certificate of Deposit; share certificate; or cashier's, treasurer's, tellers or official check drawn by, or 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.

(1) These instruments may be utilized only to a maximum of \$100,000.

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

**THE BID SECURITY SHALL BE AT LEAST FIVE (5) PERCENT OF THE BID AMOUNT.**

If the bidder is a corporation, evidence in the form of a corporate resolution, authorizing the corporate representative to execute the bond must be submitted with the proposal. If the bidder is a partnership, all partners must sign the bond or evidence in the form of a partnership agreement must be submitted showing the authority of the partner.

If the bidder is a joint venture, all parties to the joint venture must sign the bond or evidence in the form of a joint venture agreement must be submitted showing the authority of the bidder to sign the bond on behalf of the joint venture.

In the case where the award will be made on a group or item basis, the amount of proposal guaranty shall be based on the total bid for all groups or items submitted.

Bidders are cautioned that surety bid bonds which place a limit in value to the difference between the bid amount and the next acceptable bid, such value not to exceed the purported amount of the bond, are acceptable. Also, surety bid bonds which place a time limit on the right of the State to make claim other than allowed by statutes or these General Conditions are not acceptable. Bidders are hereby notified that a surety bid bond containing such limitation(s) is not acceptable and a bidder's bid accompanied by such surety bid bond will be automatically rejected.

**DELIVERY OF PROPOSALS** - The entire proposal shall be placed together with the bid security, in a sealed envelope so marked as to indicate the identity of the project, the project number, the date of bid opening and the name and address of the bidder and then delivered as indicated in the Notice to Bidders. Bids which do not comply with this requirement may not be considered. Proposals will be received up to the time fixed in the

public notice for opening of bids and must by that time be in the hands of the officials indicated. The words 'SEALED BID' must be clearly written or typed on the face of the sealed envelope containing the proposal guaranty.

WITHDRAWAL OR REVISION OF PROPOSALS - Any bid may be withdrawn or revised at any time prior to, but not after, the time fixed in the public notice for the opening of bids, provided that a request in writing, executed by the bidder or his duly authorized representative, for the withdrawal or revision of such bid is filed with the Adjutant General before the time set for the opening of bids. The withdrawal of a bid shall not prejudice the right of a bidder to file a new bid. Whether or not bids are opened exactly at the time fixed in the public notice for opening bids, a bid will not be received after that time, nor may any bid be withdrawn after the time fixed in the public notice for the opening of bids.

PUBLIC OPENING OF PROPOSALS - Proposals will be opened and read publicly at the time and place indicated in the Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

DISQUALIFICATION OF BIDDERS - Any one or more of the following cause will be considered as sufficient for the disqualification of a bidder and the rejection of his proposal or proposals:

- A. Non-compliance with "QUALIFICATION OF BIDDERS".
- B. Evidence of collusion among bidders.
- C. Lack of responsibility and cooperation as shown by past work.
- D. Being in arrears on existing contracts with the State of Hawaii or having defaulted on a previous contract.
- E. Lack of proper equipment and/or sufficient experience to perform the work contemplated as revealed by the Standard Questionnaire and Financial Statement for Bidders.
- F. No contractor's license or a contractor's license which does not cover type of work contemplated.
- G. More than one proposal for the same work from an individual, firm, partnership, corporation, or joint venture under the same or different name.
- H. Delivery of bids after the deadline specified in the advertisement calling for bids.
- I. Failure to pay, or satisfactorily settle, all bids overdue for labor and material on former contracts in force at the time of issuance of proposal forms.

CONSIDERATION OF PROPOSALS - After the proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared and the results of such comparison shall immediately be made public. In the comparison of bids, words written in the proposals will 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.

IRREGULAR PROPOSALS - Proposals will be considered irregular and may be rejected for the following reasons:

- A. If the proposal is unsigned.
  - B. Bid security not in accordance with paragraph "BID SECURITY".
  - C. If proposal is on a form other than that furnished by the Department or if the form is altered or any part thereof detached.
  - D. If the proposal shows any non-compliance with applicable law, alteration of form, additions not called, conditional bids, incomplete bids, uninitiated erasures, other defects, or if the prices are obviously unbalanced, or if sufficient funds are not available to prosecute the work.
  - E. If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- This does not exclude a proposal limiting the maximum gross amount of awards acceptable to any one bidder at any one bid letting, provided that any selection of awards will be made by the Department.
- F. When a proposal is signed by an officer or officers of a corporation and a currently certified corporate resolution authorizing such signer(s) to submit such proposal is not submitted with the proposal or when the proposal is signed by an agent other than the officer or officers of a corporation or a member of a partnership and a Power of Attorney is not submitted with the proposal.
  - G. Where there is an incomplete or ambiguous listing of joint contractors and/or subcontractors the proposal may be rejected. All work which is not listed as being performed by joint contractor and/or subcontractors must be performed by the bidder with his own employees. Additions to the list of joint contractors or subcontractors will not be allowed. Whenever there is a doubt as to the completeness of the list, the bidder will be required to submit within five (5) working days, written confirmation that the work in question will be performed with his own force. Whenever there is more than one joint contractor and/or subcontractor listed for the same item of work, the bidder will be required to either confirm in writing within five (5) working days that all joint contractors or subcontractors listed will actually be engaged on the project or obtain with five (5) working

days, written releases from those joint contractor and/or subcontractors who will not be engaged.

AWARD OF CONTRACT - The award of contract, if it be awarded, will be made within ninety (90) consecutive calendar days after the opening of the proposals to the lowest responsible and responsive bidder (including the alternate or alternates which may be selected by the Adjutant General in the case of alternate bids) whose proposal complies with all the requirements prescribed, but in no case will an award be made until all necessary investigations are made. The successful bidder will be notified, by letter mailed to the address shown on the proposal that his bid has been accepted and that he has been awarded the contract.

No contract will be awarded to any person or firm suspended under the provisions of Chapter 104 and Chapter 444, Hawaii Revised Statutes, as amended.

CANCELLATION OF AWARD - The Adjutant General or his designated representative reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties without any liability to the awardee and to any other bidder.

RETURN OF BID SECURITY (excluding bid bonds) - All bid securities, except those of the four (4) lowest bidders, will be returned immediately following the opening and checking of the proposals. The retained bid securities of the remaining two (2) lowest bidders will be returned within five (5) working days following the execution of contract. The successful bidder's bid security may be returned after a satisfactory contract bond has been furnished and the contract has been executed.

RETURN OF BID BONDS – The bid bonds will be returned only after receipt of a written request from the contractor.

REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS - Performance and Payment Bonds shall be required for contracts exceeding \$50,000. At the time of the execution of the contract, the successful bidder shall file a good and sufficient performance and payment bonds on the form furnished by the Department or the contractors Surety, each in an amount equal to one hundred percent (100%) of the amount of the contract price unless otherwise stated in the solicitation of bids. Acceptable performance and payment bonds shall be limited to the following:

- A. Surety bond underwritten by a company licensed to issue bonds in this State; or
- B. Legal Tender; or
- C. 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.

(1) These instruments may be utilized only to a maximum of \$100,000.

(2) 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 acceptable.

If the contractor fails to deliver the required performance and payment bonds, the contractor's award shall be canceled, its bid security enforced, and award of the contract shall be made to the next lowest bidders.

EXECUTION OF THE CONTRACT - The contract shall be signed by the successful bidder and returned, together with a satisfactory performance and payment bonds, within ten (10) consecutive calendar days, after the bidder has received his contract for execution or within such further time as the Adjutant General or his designated representative may allow. No proposal or contract shall be considered binding upon the State until the contract has been fully and properly executed by all parties thereto and the Adjutant General or his designated representative has endorsed therein his certificate, as required by Section 103D-309, Hawaii Revised Statutes, that there is an available unexpended appropriation or balance of an appropriation over and above all outstanding contracts sufficient to cover the State's amount required by such contract.

On any individual award totaling less than \$50,000, the State reserves the right to execute the contract by the issuance of a State Purchase Order. Acceptance shall result in a binding contract between the parties without further action by the State. Executing the contract by Purchase Order shall not be deemed a waiver of these specification requirements.

FAILURE TO EXECUTE THE CONTRACT - If the bidder to whom a contract is awarded shall fail or neglect to enter into the contract and to furnish satisfactory security within ten (10) consecutive calendar days after such award or within such further time as the Adjutant General or his designated representative may allow, the award shall be canceled and the bid security shall be declared forfeited. The bid security shall thereupon become a realization of the State, not as a penalty, but in liquidation of the damages sustained. The Adjutant General may thereupon award the contract to the next lowest responsible bidder or may call for new bids, whichever method he may deem is to the best interest of the State.

NOTICE TO PROCEED - After the contract is fully executed, the Contractor will be sent a formal "Notice to Proceed" advising the Contractor of the date on which he may proceed with the work. The Contractor shall be allowed ten (10) consecutive working days from said date to begin his work. In the event that the Contractor refuses or neglects to start the work, the Adjutant General or his designated representative may terminate the contract.

## **SPECIAL PROVISIONS FOR CONSTRUCTION CONTRACTS**

### **RESPONSIBILITY OF OFFERORS**

Offeror shall furnish proof of compliance in accordance with Act 190 Amendment to HRS 103D-310(c)

Required as a prerequisite to entering into a contract, the contractor shall register on the Hawaii Compliance Express web site for all tax clearances by going to <http://vendors.ehawaii.gov> and registering there.

A Certificate of Vendor Compliance generated from this website should be included with their bid proposal. A Compliant status is required prior to awarding the contract.

### **COMPREHENSIVE ANNUAL FINANCIAL REPORTING**

For any project that involves work on multiple structures, including non-building structures, whether it be new work or renovation work, or when the project involves both site improvements and a structure, the Contractor shall provide the following information to the Project Manager for fixed asset allocation purposes:

1. Within 30 calendar days of award as applicable to the project, the following shall be submitted:
  - a. The total cost of each individual structure.
  - b. The total cost of on-site improvement work; and
  - c. The total cost of off-site improvement work.
  
2. After all work, including all change order work has been completed, and prior to a request for final payment, the following shall be submitted:
  - a. The total cost of each individual structure including any related change order cost.
  - b. The total cost of on-site improvement work including any related change order cost; and
  - c. The total cost of off-site improvement work including any related change order cost.
  
3. The sum total cost of each category noted above shall total to the contract amount awarded, plus all change order work issued.
  - a. The cost of each individual structure includes the cost of the structure and any work within five (5) feet of the structure or building line which may include, but is not limited to its foundation, foundation earthwork, and utility improvements within and immediately below the building line.
  - b. The on-site improvement cost includes all site improvement work from

five (5) feet and beyond the building line and up to the project's property line, which may include but is not limited to clearing and grubbing, grading, drainage system, site utility, walkway, parking lot, and landscape improvements.

- c. The off-site improvement cost includes all off-site improvement work outside of the project's property line, which may include but is not limited to walkway, landscape, drainage, utility, and roadway improvements.

## **LIABILITY INSURANCE**

The Contractor shall not commence any work until it obtains, at its own expense, all required liability insurance. Such insurance must have the approval of the State as to limit form and amount and must be maintained with a company acceptable to the State. Such insurance must be maintained for the full period of the contract and shall provide protection from claims arising out of or resulting from the Contractor's operations under the Contract itself Subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

The contractor shall take out and maintain during the life of this contract broad form public liability (Bodily Injury) and broad form property damage liability insurance in a combined single limit not less than \$1,000,000 and not less than \$2,000,000 in the aggregate to protect such contractor and all his subcontractors from claims for damages for personal injury, accidental death and property damage which may arise from operations under this contract, whether such operations be by himself or anyone directly or indirectly employed by either of them and to include automotive liability, workers compensation and employers liability.

The 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 final acceptance of the work by the State.

A certificate of insurance acceptable to the State shall be filed with the State prior to commencement of the work. Such certificate shall contain a provision that coverage afforded under the policy will not be canceled or changed until at least thirty days written notice has been given to the State by registered mail at the address denominated for the State in the Contract for official communications to it should any policy be canceled before final acceptance by the State, and the Contractor fails to immediately procure replacement insurance as specified, the State reserves the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor.



## **BID PREPARATION**

**Offer Form, Page Of-1.** Offeror is requested to submit its offer using Offeror's exact legal name as registered with the Department of Commerce and Consumer Affairs, if applicable; and to indicate exact legal name in the appropriate space on Offer Form, page OF-1. Failure to do so may delay proper execution of the contract.

The authorized signature on the first page of the Offer Form shall be an original signature in ink. If unsigned or the affixed signature is a facsimile or a photocopy, the offer shall be automatically rejected unless accompanied by other material, containing an original signature, indicating the Offeror's intent to be bound.

**Hawaii Business.** A business entity referred to as a "Hawaii business", is registered and incorporated or organized under the laws of the State of Hawaii.

**Compliant non-Hawaii business.** A business entity referred to as a "compliant non-Hawaii business," is not incorporated or organized under the laws of the State of Hawaii but is registered to do business in the State.

**Tax Liability.** Work to be performed under this solicitation is a business activity taxable under Chapter 237, Hawaii Revised Statutes (HRS), and vendors are advised that they are liable for the Hawaii GET at the current rate.

**4.712% tax rate.** All businesses located on Oahu are required to pay the ½% County Surcharge tax on all Oahu transactions for which they pay the 4% GE tax. Neighbor island and out-of-state businesses that deliver goods or services to Oahu and have a 'physical presence' on Oahu, must pay the new ½% County Surcharge tax on their Oahu transactions.

**4% tax rate.** Neighbor island and out-of-state businesses that do not deliver any goods or services to Oahu are not subject to the new ½% County Surcharge tax.

If, however, an Offeror is a person exempt by the HRS from paying the GET and therefore not liable for the taxes on this solicitation, Offeror shall state its tax-exempt status and cite the HRS chapter or section allowing the exemption.

**Taxpayer Preference.** For evaluation purposes, pursuant to §103D-1008, HRS, the Bidder's tax-exempt price offer submitted in response to an IFB shall be increased by the applicable retail rate of general excise tax and the applicable use tax. Under no circumstance shall the dollar amount of the award include the aforementioned adjustment.

## **AWARD OF CONTRACT**

**Method of Award.** Award, if made, shall be to the responsive, responsible offeror submitting the lowest Lump Sum Bid unless otherwise noted in the bid documents.

**Responsibility of Lowest Responsive Bidder.** Reference Responsibility of Offerors in §3-122-112, HAR. If compliance documents have not been submitted to the State Department of Defense prior to award, the lowest responsive offeror shall produce documents to the procurement officer to demonstrate compliance with this section.

### **HRS Chapter 237 tax clearance requirement for award and final payment.**

Instructions are as follows:

In accordance with Act 190 Amendment to HRS 103D-310(c)

Required as a prerequisite to entering into a contract, the contractor shall register on the Hawaii Compliance Express web site for all tax clearances by going to <http://vendors.ehawaii.gov> and registering there.

A Certificate of Vendor Compliance generated from this website should be included with their bid proposal. A Compliant status is required prior to awarding the contract.

A current Certificate of Vendor Compliance must accompany the invoice for final payment on the contract.

### **HRS Chapters 383 (Unemployment Insurance), 386 (Workers' Compensation), 392 (Temporary Disability Insurance), and 393 (Prepaid Health Care) requirements for award.** Instructions are as follows:

Pursuant to §103D-310(c), HRS, The Certificate of Vendor Compliance must have a "Compliant" rating with the DLIR.

### **Compliance with Section 103D-310(c)(1) and (2), HRS.**

Contractors are required to provide a state and federal tax clearance as a prerequisite to entering into a public contract of \$2,500 or more. To meet this requirement, all bidders shall submit valid tax clearances with their bid proposals when the bid is \$2,500 or more.

In accordance with Act 190 Amendment to HRS 103D-310(c), required as a prerequisite to entering into a contract, the contractor shall register on the Hawaii Compliance Express web site for all tax clearances by going to <http://vendors.ehawaii.gov> and registering there.

A Certificate of Vendor Compliance generated from this website shall be included with their bid proposal. A Compliant status is required prior to awarding the contract.

Failure to submit the required tax clearance will be sufficient grounds for the State to refuse to receive or consider the prospective bidder's proposal.

The Certificate of Vendor Compliance should be applied for as soon as possible. If a valid certificate is not submitted on a timely basis for award of a contract, an offer otherwise responsive and responsible may not receive the award.

**Final Payment Requirements.** A current Certificate of Vendor Compliance will be required for final payment.

## **SPECIAL PROVISIONS for Act 68, SLH 2010, CONSTRUCTION CONTRACTS**

### **DEFINITIONS FOR TERMS USED IN ACT 68, SLH 2010:**

- a. "Contract" means contracts for construction under 103D, HRS.
- b. "Contractor" has the same meaning as in section 103D-104, HRS, provided that "contractor" includes a Subcontractor where applicable.
- c. "Construction" has the same meaning as in section 103D-104, HRS.
- d. "Procurement Officer" has the same meaning as in section 103D-104, HRS.
- e. "Resident" means a person who is physically present in the State of Hawaii at the time the person claims to have established the person's domicile in the State of Hawaii and shows the person's intent is to make Hawaii the person's primary residence.
- f. "Shortage trade" means a construction trade in which there is a shortage of Hawaii residents qualified to work in the trade as determined by the Department of Labor and Industrial Relations.

### **EMPLOYMENT OF STATE RESIDENTS REQUIREMENTS – ACT 68, SLH 2010:**

- a. A Contractor awarded a contract 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 within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

- b. Prior to starting any construction work, the Contractor shall submit the subcontract dollar amount for each of its Subcontractors.
- c. The requirements of this section shall apply to any subcontract of \$50,000 or more in connection with the Contractor, that is, such Subcontractors must also ensure that Hawaii residents compose not less than eighty percent of the Subcontractors workforce used to perform the subcontract.
- d. The Contractor and any Subcontractor whose subcontract is \$50,000 or more shall comply with the requirements of Act 68 for the entire duration of the contract.
  - 1. Certification of Compliance for Employment of State Residents (attached) shall be made prior to submittal of the final invoice.
  - 2. The Certification of Compliance for Employment of State Residents shall be made under oath by an officer of the company by completing a Certification of Compliance for Employment of State Residents form and executing the Certificate before a licensed notary public.
  - 3. In addition to the certification as required above, the Contractor and Subcontractors shall maintain records such as certified payrolls for laborers and mechanics who performed work at the site and time sheets for all other employees who performed work on the project. These records shall include the names, addresses and number of hours worked on the project by all employees of the Contractor and Subcontractor who performed work on the project to validate compliance with Act 68. The Contractor and Subcontractors shall retain these records and provide access to the State for a minimum period of four (4) years after the final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the records has been started before the expiration of the four (4) year period, the Contractor and Subcontractors shall retain the records until completion of the action and resolution of all issues that arise from it, or until the end of the four (4) year period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any Subcontractor.
- e. A Contractor who fails to comply with this section shall be subject to any of the following sanctions:
  - 1. Temporary suspension of work on the project until the Contractor or its Subcontractor complies with Act 68.
  - 2. Withholding of payment on the contract until the Contractor or its Subcontractor complies with Act 68.

3. Permanent termination of the Contractor or Subcontractor from any further work on the project.
4. Recovery by the State, as applicable, of any moneys expended on the contract or subcontract as applicable; or
5. Proceedings for debarment or suspension of the Contractor or Subcontractor under Hawaii Revised Statutes §103D-702.

**Conflict with Federal Law:**

This section shall not apply if the application of this section is in conflict with any federal law, or if the application of this section will disqualify the State from receiving Federal funds or aid.

**Davis-Bacon Act:**

Davis-Bacon Act prevailing wage rates apply to all State of Hawaii Construction contracts over \$2,000.00.

**CERTIFICATION OF COMPLIANCE  
FOR  
EMPLOYMENT OF STATE RESIDENTS  
HRS CHAPTER 103B, AS AMENDED BY ACT 192, SLH 2011**

Project Title: \_\_\_\_\_

Agency Project No: \_\_\_\_\_

Contract No.: \_\_\_\_\_

As required by Hawai'i Revised Statutes Chapter 103B, as amended by Act 192, Session Laws of Hawaii 2011-Employment of State Residents on Construction Procurement Contracts, I hereby certify under oath, that I am an officer of \_\_\_\_\_ and  
(Name of Contractor or Subcontractor Company)  
for the Project Contract indicated above, \_\_\_\_\_ was in  
(Name of Contractor or Subcontractor Company)  
compliance with HRS Chapter 103B, as amended by Act 192, SLH 2011, by employing a workforce of which not less than eighty percent are Hawai'i residents, as calculated according to the formula in the solicitation, to perform this Contract.

I am an officer of the **Contractor** for this contract.

I am an officer of the **Subcontractor** for this contract.

***CORPORATE SEAL***

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Print Title)

Subscribed and sworn to me before this  
\_\_\_\_\_ day of \_\_\_\_\_, 2011.

Doc. Date: \_\_\_\_\_ # of Pages \_\_\_\_\_ 1<sup>st</sup> Circuit

Notary Name: \_\_\_\_\_

Doc. Description: \_\_\_\_\_

\_\_\_\_\_  
Notary Public, 1<sup>st</sup> Circuit, State of Hawai'i  
My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Signature \_\_\_\_\_ Date

NOTARY CERTIFICATION

SURETY BID BOND

Bond No.

KNOW TO ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
[Full name or legal title of bidder]  
as Offeror, hereinafter called Principal, and \_\_\_\_\_  
[Bonding Company]

\_\_\_\_\_,  
as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety in the State of Hawaii,  
are held and firmly bound unto the State of Hawaii, Department of Defense, as Owner, hereinafter called owner, in  
the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_),  
[Required amount of bid security]

lawful money of the United States of America, for the payment of which sum well and truly to be made, the said  
Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly  
and severally, firmly by these presents.

WHEREAS:

The Principal has submitted an offer for \_\_\_\_\_  
[Project number and Title]  
\_\_\_\_\_.

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the alternate, accept  
the offer of the Principal and the Principal shall enter into a Contract with the Owner in accordance with the terms  
of such offer, and give such bond or bonds as may be specified in the solicitation or Contract Documents with good  
and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material  
furnished in the prosecution thereof as specified in the solicitation then this obligation shall be null and void,  
otherwise to remain in full force and effect.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(Seal)

\_\_\_\_\_  
Name of Principal

\_\_\_\_\_  
Signature

Title \_\_\_\_\_

(Seal)

\_\_\_\_\_  
Name of Surety

\_\_\_\_\_  
Signature

Title \_\_\_\_\_

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**SAMPLE FORMS**

- Request for Substitution
- Name of Corporation
- Weekly Quality Control Report Form

## ARTICLE 1 - Definitions

Whenever the following terms or pronouns are used in these Bidding and Execution of Contract Requirements, and General Conditions, or in any contract documents or instruments where these Bidding and Execution of Contract Requirements, and General Conditions govern, the intent and meaning shall be interpreted as follows

- 1.1\_ ADDENDUM (plural - Addenda) A written or graphic document, including Drawings and Specifications, issued by the Engineer during the bidding period which modify or interpret the bidding documents, by additions, deletions, clarifications or corrections which shall be considered and made a part of the bid proposal and the contract when executed.
- 1.2\_ ADDITION (to the contract sum) Amount added to the contract Sum by Change Order.
- 1.3\_ ADMINISTRATIVE RULES - Hawaii Administrative Rules for Chapter 103-D of the Hawaii Revised Statutes.
- 1.4\_ ADMINISTRATOR - The Public Works Administrator, Department of Accounting and General Services
- 1.5\_ ADVERTISEMENT - A public announcement soliciting bids or offers.
- 1.6\_ AMENDMENT - A written document properly executed by the Contractor and DOD issued to amend the existing contract between the State and the Contractor.
- 1.7\_ BAD WEATHER DAY - When weather or other conditions prevent a minimum of four hours of work with the Contractor's normal work force on controlling items of work at the site.
- 1.8\_ BENEFICIAL OCCUPANCY - The point of project completion when the State can use the constructed facility in whole or in part for its intended purpose even though substantial completion may not be achieved.
- 1.9\_ BID See OFFER
- 1.10\_ BID SECURITY - The security furnished by the bidder from which the State may recover its damages in the event the bidder breaches its promise to enter into a contract with the State and fails to execute the required bonds covering

the work contemplated, if its proposal is accepted.

- 1.11\_ BIDDER - See Offeror
- 1.12\_ BIDDING DOCUMENTS (or SOLICITATION DOCUMENTS) - The advertisement solicitation notice and instructions, Offer requirements, Offer forms, and the proposed contract documents including all addenda, and clarifications issued prior to receipt of the Offer.
- 1.13\_ BULLETIN - A written notice to the Contractor requesting a price and / or time proposal for contemplated changes preparatory to the issuance of a field order or change order.
- 1.14\_ BY OR TO THE ENGINEER - To avoid cumbersome and confusing repetition of expressions in these General Conditions, it is provided that whenever the following words or words of like import are used, they shall be understood as if they were followed by the words "by the Engineer" or "to the Engineer", unless the context clearly indicates another meaning: contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected or condemned.
- 1.15\_ CALENDAR DAY - Any day shown on the calendar beginning at midnight and ending at midnight the following day. If no designation of calendar or working day is made, "day" shall mean calendar day.
- 1.16\_ CHANGE ORDER - A written order signed by the Engineer that establishes the full payment and final settlement of all claims for direct, indirect and consequential costs, including costs of delays, and establishes any adjustments to contract time related to the work covered and affected by one or more field orders, or for change work done or agreed to be done without issuance of a separate field order. A change order signed by all the parties to the contract constitutes a supplemental agreement.
- 1.17\_ COMPLETION - See SUBSTANTIAL COMPLETION and FINAL COMPLETION.

- 1.18\_ COMPROLLER - The Comptroller of the State of Hawaii, Department of Accounting and General Services. calendar (or working) days, the contract requires completion by a certain date, the work shall be completed by that date.
- 1.19\_ CONSULTANT - A person, firm or corporation having a contract with the State to furnish services with respect to the project
- 1.20\_ CONTRACT - The written agreement between the Contractor and the State of Hawaii by its Adjutant General, by which the Contractor is bound to furnish all labor, equipment, and materials and to perform the specified work within the contract time stipulated, and by which the State of Hawaii is obligated to compensate the Contractor therefore at the prices set forth therein. The contract shall include the Contract Documents and also any and all amendments and change orders which are required to complete the construction in an acceptable manner.
- 1.21\_ CONTRACT COMPLETION DATE - The calendar day on which all work on the project, required by the contract, must be completed. See CONTRACT TIME and FINAL COMPLETION.
- 1.22\_ CONTRACT DOCUMENTS - The Contract, Addenda (which pertain to the Contract Documents, Contractor's Proposal (including Wage Schedule, List of Subcontractors and other documentation accompanying the Bid and any post bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Contract, the Notice to Proceed, the Bonds, these GENERAL CONDITIONS, the SPECIAL CONDITIONS, the Specifications and the Drawings as the same are more specifically identified in the Contract together with all written Amendments, Change Orders, Field Orders, a written order for minor changes in the work and Engineer's written interpretations and clarifications issued on or after the effective date of the Contract.
- 1.23\_ CONTRACT PRICE - The amount designated on the face of the contract for the performance of work including allowances for extra if any.
- 1.24\_ CONTRACT TIME (or CONTRACT DURATION) - The number of calendar (or working) days provided for completion of the contract, inclusive of authorized time extensions. The number of days shall begin running on the effective date in the Notice to Proceed. If in lieu of providing a number of
- 1.25\_ CONTRACTOR - Any individual, partnership, firm, corporation, joint venture, or other legal entity undertaking the execution of the work under the terms of the contract with the State of Hawaii, and acting directly or through its agents, or employees.
- 1.26\_ DEPARTMENT - The Department of Defense, State of Hawaii (abbreviated DOD).
- 1.27\_ DRAWINGS (or Plans) - The contract drawings in graphic or pictorial form, which show the design, location, character, dimensions and details of the Work to be done and which shall be a part of the Contract Documents.
- 1.28\_ ENGINEER - The Department of Defense Engineer, or the authorized person to act in the Engineer's behalf.
- 1.29\_ EQUAL OR APPROVED EQUAL - Whenever this term is used in the drawings or specifications, it shall be interpreted to mean a brand or article, prequalified in accordance with Section 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT, that may be used in place of the one specified.
- 1.30\_ FIELD ORDER - A written order issued by the Engineer or the Engineer's authorized representative to the Contractor requiring the contract work to be performed in accordance with a change or changes in the work. A field order may (1) establish a price adjustment and/or time adjustment in an amount the Engineer believes is reasonable for the change; or (2) may declare that the Engineer does not intend to adjust contract time or price for the work; or (3) may request the Contractor to submit a proposal for an adjustment to the contract time and/or price by a certain date.
- 1.31\_ FINAL COMPLETION - The date set by the Engineer that all work required by the contract and any amendments or changes thereto is in full compliance with the contract.
- 1.32\_ FORCE ACCOUNT - Term used when Work is ordered to be done without prior agreements as to lump sum or unit price cost thereof and is to be billed for at cost of labor, materials and

- equipment, insurances, taxes, etc., plus an agreed percentage for overhead and profit.
- 1.33\_ GUARANTEE - Legally enforceable assurance of the duration of satisfactory performance of quality of a product or Work
- 1.34\_ GOODS - Materials. §103D-104
- 1.35\_ HAZARDOUS MATERIALS - Any and all radioactive materials, asbestos, polychlorinated biphenyls, petroleum, crude oil, chemicals known to cause cancer or reproductive toxicity, pollutants, contaminants, toxic substances or materials cited in Hazardous Material Laws. Abandoned motor vehicles or parts thereof are not hazardous material.
- 1.36\_ HOLIDAYS - The days of each year which are set apart and established as State holidays pursuant to Chapter 8, Hawaii Revised Statutes.
- 1.37\_ INSPECTOR - The person assigned by the Engineer to make detailed inspections of contract performance and materials supplied for the work.
- 1.38\_ LAWS - All Federal, State, City and County Laws, ordinances, rules and regulations, and standard specifications including any amendments thereto effective as of the date of the call for sealed bids.
- 1.39\_ PERFORMANCE LIQUIDATED DAMAGES  
The amount prescribed in the General Conditions, Section 7.26 FAILURE TO COMPLETE THE WORK ON TIME to be paid to the State or to be deducted from any payments due or to become due the Contractor for each working day or calendar day (as applicable) delay in completing the whole or any specified portion of the work beyond the Contract Time.
- 1.40\_ LETTER OF AWARD - A written notice from the Engineer to the successful bidder(s) stating that its proposal has been accepted by the State.
- 1.41\_ MAJOR UNIT PRICE ITEM - A unit price item which, when extended on its estimated quantities in the proposal form, exceeds five percent (5%) of the total base bid proposal less any allowance and contingent items included in the proposal.
- 1.42\_ NON-CONFORMING WORK - Work that does not fulfill the requirements of the Contract Documents.
- 1.43\_ NOTICE TO CONTRACTORS – See Solicitation.
- 1.44\_ NOTICE TO PROCEED - A written notice from the Contracting Officer to the Contractor advising it of the date on which it is to begin the prosecution of the Work, which date shall also be the beginning of Contract Time.
- 1.45\_ POST CONTRACT DRAWINGS - Drawings issued after the award of the contract for the purpose of clarification and / or changes to the work indicated in the original drawings and which may be made a part of the contract.
- 1.46\_ PROJECT ACCEPTANCE DATE - The calendar day on which the Engineer accepts the project as sufficiently completed in compliance with the contract so that the State can occupy or utilize the Work for its intended use. See SUBSTANTIAL COMPLETION.
- 1.47\_ PROJECT CONTRACT LIMITS (or Contract Zone) - The portion of the site as delineated on the drawings which define the Contractor’s primary area of operation for the prosecution of the work. It does not define the exact limits of all construction that may be required under the contract.
- 1.48\_ PROJECT GUARANTEE - A guarantee issued by the Contractor to the State. See GUARANTEE.
- 1.49\_ PROPOSAL (Bid) – See Offer (or Bid).
- 1.50\_ PROPOSAL FORM – See Offer Form (or Bid Form).
- 1.51\_ PUNCH LIST - A list compiled by the Engineer (or Contractor) stating work yet to be completed or corrected by the Contractor in order to substantially complete or finally complete the contract requirements.
- 1.52\_ QUESTIONNAIRE - The specified forms on which the bidder shall furnish required information as to its ability to perform and finance the work.
- 1.53\_ SHOP DRAWINGS - All drawings, diagrams illustrations, schedules and other data or information which are specifically prepared or

- assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
- 1.54\_ SPECIAL CONDITIONS - Supplements or modifies the standard clauses of the GENERAL CONDITIONS setting forth conditions or requirements peculiar to the individual project under consideration, which are not thoroughly or satisfactorily covered, described or explained in these GENERAL CONDITIONS.
- 1.55\_ SPECIFICATIONS - That portion of the Contract Documents consisting of written descriptions for materials, equipment, construction systems, standards, workmanship, directions, provisions and requirements that pertain to the method and manner of performing the work and certain administrative requirements applicable thereto.
- 1.56\_ STATE - The State of Hawaii acting through its authorized representative.
- 1.57\_ SUBCONTRACT - Any written agreement between the Contractor and its subcontractors which contains the conditions under which the subcontractor is to perform a portion of the work for the Contractor.
- 1.58\_ SUBCONTRACTOR - An individual, partnership, firm, corporation, joint venture or other legal entity, as covered in Chapter 444, Hawaii Revised Statutes, which enters into an agreement with the Contractor to perform a portion of the work for the Contractor.
- 1.59\_ SUBSTANTIAL COMPLETION - The status of the project when the Contractor has completed all the work and 1) all utilities and services are connected and working, 2) all equipment is in acceptable working condition, 3) additional activity by the Contractor to correct punch list items as described herein will not prevent or disrupt use of the work or the facility in which the work is located, and 4) the building, structure, improvement or facility can be used for its intended purpose.
- 1.60\_ SUPERINTENDENT - The employee of the Contractor who is charged with the responsibility of all the Work.
- 1.61\_ SURETY - The qualified individual, firm or corporation other than the Contractor, which executes a bond with and for the Contractor to insure its acceptable performance of the contract.
- 1.62\_ UNUSUALLY SEVERE WEATHER - Uncommonly harsh weather including but not limited to hurricanes, tornados, tropical storms and tropical depressions, or as otherwise defined in the SPECIAL CONDITIONS.
- 1.63\_ WORK - The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient for the successful completion of the project and the execution of all the duties and obligations imposed by the contract.
- 1.64\_ WORKING DAY - A calendar day, exclusive of Saturdays, Sundays and State-recognized legal holidays for the month in question.
- 1.65\_ OFFER (or Bid) - The executed document submitted by an Offeror in response to a solicitation request, to perform the work required by the proposed contract documents, for the price quoted and within the time allotted.
- 1.66\_ OFFEROR (or BIDDER) - Any individual, partnership, firm, corporation, joint venture or other legal entity submitting directly or through a duly authorized representative or agent, an Offer for the work or construction contemplated.
- 1.67\_ OFFER FORM (or BID FORM) - The form prepared by the Department on which the Offeror submits the written offer or bid. By submitting an offer or bid, the Offeror adopt the language on the form as its own.
- 1.68\_ PROJECT START DATE - The date established in the Notice to Proceed when the Contractor shall begin prosecution of the work and the start of contract time.
- 1.69\_ SOLICITATION - An Invitation to Bid or Request for Proposals or any other document issued by the Department to solicit bids or offers to perform a contract. The solicitation may indicate the time and place to receive the bids or offers and the location, nature and character of the work, construction or materials to be provided.

## **ABBREVIATIONS**

HAR      Hawaii Administrative Rules

HRS	Hawaii Revised Statutes
VECP	Value Engineering cost Proposal
DOTAX	State Department of Taxation
IRS	Internal Revenue Service

corporation, or (4) a partner or substantial investor in the firm is in arrears in any payment owed to the State of Hawaii or any of its political subdivisions or is in default of any obligation to the State of Hawaii or to all or to any of its political subdivisions, including default as a surety or failure to perform faithfully and diligently any previous contract with the Department.

## **BIDDING AND EXECUTION OF CONTRACT REQUIREMENTS**

### **ARTICLE 2 - Proposal Requirements and Conditions**

#### **2.1 QUALIFICATION OF BIDDERS**

Prospective bidders must be capable of performing the work for which bids are invited, and must be capable of entering into a public contract of \$25,000 or more.

##### 2.1.1 Notice of Intention to Bid

2.1.1.1 In accordance with Section 103D-310, Hawaii Revised Statutes, and Section 3-122-111, Hawaii Administrative Rules, a written notice of intention to bid need not be filed for construction of any public building or public work. A written notice of intention to bid need not be filed for mere furnishing and installing of furniture, equipment, appliances, material and any combination of these items when a Contractor's license is not required under Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board.

2.1.1.2 If two (2) or more prospective bidders desire to bid jointly as a joint venture on a single project, they must file an affidavit of joint venture. Such affidavit of joint venture will be valid only for the specific project for which it is filed. No further license is required when all parties to the joint venture possess current and appropriate contractor's licenses. Joint ventures are required to be licensed in accordance with Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board when any party to the joint venture agreement does not hold a current or appropriate contractor's license. The joint venture must register with the office of the Director of Commerce and Consumer Affairs in accordance with Chapter 425 of the Hawaii Revised Statutes, as amended.

2.1.1.3 No persons, firm or corporation may bid where (1) the person, firm, or corporation, or (2) a corporation owned substantially by the person, firm, or corporation, or (3) a substantial stockholder or an officer of the

2.1.1.4 The Engineer may, in accordance with Section 103D-310 Hawaii Revised Statutes, require the prospective Bidder to submit answers to questions contained in the STANDARD QUALIFICATION QUESTIONNAIRE FOR PROSPECTIVE BIDDERS ON PUBLIC WORKS CONTRACTS, on the form provided by the Department, properly executed and notarized, setting forth a complete statement of the experience of such prospective Bidder and its organization in performing similar work and a statement of the equipment proposed to be used, together with adequate proof of the availability of such equipment, at least two (2) working days prior to the time advertised for the opening of bids. If the information in the questionnaire proves satisfactory, the Bidder's proposal will be received. All information contained in the answers to the questionnaire shall be kept confidential. The questionnaire will be returned to the Bidder after it has served its purpose.

2.1.1.5 If upon review of the Questionnaire, or otherwise, the Bidder appears not fully qualified or able to perform the intended work, the Engineer shall, after affording the Bidder an opportunity to be heard and if still of the opinion that the Bidder is not fully qualified to perform the work, refuse to receive or to consider any bid offered by the prospective Bidder.

2.1.1.6 Failure to complete and submit the prequalification questionnaire by the designated deadline will be sufficient cause for the Department to disqualify a prospective Bidder.

##### 2.1.2 Compliance Certificate § 103D -310(c) HRS)

2.1.2.1 Contractors are required to provide proof of compliance in order to receive a contract of \$25,000 or more. To meet this requirement, Offerors may apply and register at the "Hawaii Compliance Express" website: <http://vendors.ehawaii.gov/hce/splash/welcome/html>

2.1.2.2 Tax clearances may be obtained by completing the Tax Clearance Application (Form A-6) and submitting it to the Hawaii State Department of Taxation (DOTAX) or the Internal Revenue Service (IRS). The application may be obtained from the DOTAX, or the IRS. The application may be mailed in or walked in to either the DOTAX or the IRS. Both tax agencies encourage the use of their mail-in process, which should

be completed within twenty-one (21) calendar days. Tax clearance certificates will be issued to the applicant upon determination that the applicant has filed all tax returns due, and has paid all amounts owing on such returns, including penalty and interest.

2.1.2.3 Only original tax clearance certificates or certified copies will be accepted for this purpose. Failure to submit the required tax clearance certificates may be sufficient grounds for the Department to refuse to receive or consider the prospective bidder's proposal.

2.1.2.4 Tax clearance certificates are valid for six (6) months. The six-month period will begin with the later approval date stamped on the tax clearance. An original copy of a tax clearance that bears an original green certified copy stamp will be accepted by the Department for final payment. The period of validity is two months.

2.1.2.5 The tax clearances submitted with the bid proposals must be valid on the solicitation's first legal advertisement date or any date thereafter up to the bid opening date. Valid tax clearances submitted with the proposal will remain valid for the contract award and encumbrance.

2.1.2.6 Any person, firm or corporation that is not presently doing business in the State of Hawaii and submits a Notice of Intention to Bid must submit along with said Notice of Intention to Bid a certified letter stating that said person, firm or corporation is not doing business in the State of Hawaii and is not in default of any obligations due to the State or any of its political subdivisions.

2.1.2.7 If a business cannot obtain a tax clearance certificate because of tax delinquencies, it may submit a "special letter" from DOTAX and/or the IRS. The "special letter" may only be obtained if (1) the business has an existing installment agreement with the tax agency, or (2) the delinquency is the subject of an administrative or judicial appeal. The bidder is cautioned that the "special letter" from the IRS must be certified by DOTAX. All conditions applied to tax clearance certificates for this purpose are applicable to these "special letters". Instructions to obtain the "special letter" are available from each respective tax agency.

2.1.2.8 Various combinations of tax clearance certificates and "special letters" are acceptable for this purpose as follows: Tax clearance certificate signed by both tax agencies;

- (a) Individual tax clearance certificates from each tax agency, respectively;

- (b) Tax clearance certificate from one tax agency and a "special letter" from the other tax agency;

- (c) "Special letters" from both tax agencies.

2.1.3 Wrongful Refusal to Accept a Bid - In the event the Engineer, for any reason, wrongfully refuses to accept what would otherwise be a responsive and responsible lowest bid, the exclusive remedy for such lowest bidder shall be the recovery of the reasonable actual costs of preparing the bid. No other bidder shall have any claim for damages. Refer to 2.13 PROTEST.

## 2.2 INTERPRETATION OF QUANTITIES IN BID SCHEDULE

2.2.1 When quantities for individual items of work are listed in the proposal form for which respective unit prices are asked, said quantities are estimated or approximate and are to be used by the Department only for the purpose of comparing on a uniform basis bids offered for the work. The Department does not, expressly or by implication, agree that the actual quantity of work will correspond therewith.

2.2.2 After determining the low bidder by comparison of bids submitted in accordance with the proposal form and Section 3.1 CONSIDERATION OF PROPOSALS; CANCELLATION in these specifications, the quantities of unit price items of work may increase or decrease.

2.2.3 On unit price bids, payment will be made only for the actual number of units incorporated into the finished project at the unit price bid, subject to Section 4.7 VARIATIONS IN ESTIMATED QUANTITIES.

## 2.3 CONTENTS OF PROPOSAL FORMS

2.3.1 Prospective bidders will be furnished with proposal forms giving the location, description, and the contract time of the work contemplated for which a lump sum bid price is asked or containing a schedule of items, together with estimated quantities of work to be performed and materials to be furnished, for which unit bid prices and/or lump sum bid prices are asked.

2.3.2 All papers bound with or attached to the proposal form shall be considered a part thereof and shall not be detached or altered when the proposal is submitted.

2.3.3 The drawings, specifications and other documents designated in the proposal form, will also be considered a part thereof whether attached or not.



2.3.4 By submitting a bid on the proposal form, a bidder accepts the language therein as its own.

## **2.4 THE SITE AND PROPOSED CONTRACT DOCUMENTS**

2.4.1 The Bidder shall examine carefully the Project Site contemplated and the proposal, drawings, specifications, supplemental specifications, SPECIAL CONDITIONS, and any documents or items referenced therein and contract and bond forms therefore. The submission of a bid shall be considered as a warranty that the Bidder has made such examination and is informed of the conditions to be encountered in performing the Work and of the requirements of the drawings, specifications, supplemental specifications, SPECIAL CONDITIONS and any documents and items referenced therein, and contract and bonds.

## **2.5 ADDENDA AND BID CLARIFICATIONS**

2.5.1 The terms and requirements of the bid documents (i.e. drawings, specifications and other bid and contract documents) cannot be changed prior to the bid opening except by a duly issued addenda or bid clarification.

2.5.2 The Department may alter, increase or decrease the scope of the work or the contract time, provisions and conditions by issuing a written addendum which sets forth such alterations, increase or decrease.

2.5.3 Bid Discrepancy - If a bidder discovers what it considers to be a discrepancy, ambiguity, omission or doubt as to the meaning of drawings, specifications and any other bid or contract documents, the bidder shall request in writing no later than 14 days before the bids are opened.

2.5.4 Addenda to the bid documents will be provided to all prospective bidders at the respective offices furnished for such purposes. Each addendum shall be an addition to the Contract Documents.

2.5.5 Upon providing an addenda, all bidders shall be deemed to be on notice of the information therein whether or not the addendum or bid clarification is actually received. All addenda and bid clarifications so issued shall become part of the Contract Documents.

2.5.6 No claim for additional compensation and/or time for performance will be allowed if the Contractor discovered, or in the exercise of reasonable care, should have discovered a discrepancy, ambiguity, omission or doubt for which an interpretation was not requested.

## **2.6 SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING**

2.6.1 Brand names of materials or equipment are specified or shown on the drawings to indicate a quality, style, appearance or performance and not to limit competition. The Bidder shall base its bid on one of the specified brand names unless alternate brands are qualified as equal or better in an addendum. Qualifications of such proposed alternate brands shall be submitted in writing and addressed to the Engineer. The face of the envelope containing the request must be clearly marked "SUBSTITUTION REQUEST". The request may be hand carried to the Department of Defense, State of Hawaii, 3949 Diamond Head Road, Honolulu, HI 96816-4495, or mailed. In either case, the written request must be received no later than the time and date specified in the NOTICE TO BIDDERS. The written request will be time stamped by the Department. For the purpose of this section, the time designated by the time stamping device in the Engineering Office shall be official. If the written request is hand carried, the bearer is responsible to ensure that the request is time stamped by the Engineering Office.

2.6.2 Submit three (3) sets of the written request, technical brochures, and a statement of variances. Refer to the Appendix for the Sample "Request for Substitution."

2.6.3 Statement of Variances - The statement of variances must list all features of the proposed substitution which differ from the drawings, specifications and / or product(s) specified and must further certify that the substitution has no other variant features. The brochure and information submitted shall be clearly marked showing make, model, size, options, etc., and must include sufficient evidence to evaluate each feature listed as a variance. A request will be denied if submitted without sufficient evidence. If after installing the substituted product, an unlisted variance is discovered, Contractor shall immediately replace the product with a specified product all at no cost to the State

2.6.4 Substitution Denial - Any substitution request not complying with the above requirements will be denied. Substitution requests sent to other agencies and received by the Engineering Office after the deadline above will be denied.

2.6.5 An addendum shall be issued to inform all prospective bidders of any accepted substitution in accordance with Section 2.5 ADDENDA AND BID CLARIFICATIONS.

2.6.6 For substitutions of materials and equipment after issuance of the Letter of Award, refer to Section 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING.

## 2.7 PREPARATION OF PROPOSAL

2.7.1 The Bidder's proposal must be submitted on the proposal form furnished by the Department. The proposal must be prepared in full accordance with the instructions thereon. The Bidder must state, both in words and numerals, the lump sum price or total sum bid at which the work contemplated is proposed to be done. These prices must be written in ink or typed. In case of a discrepancy between the prices written in words and those written in figures, the words shall govern over the figures. The Bidder shall sign the proposal in the spaces provided with ink. By submitting a bid, the Bidder adopts the language of the proposal as its own.

2.7.2 If the proposal is made by an individual, the person's name and post office address must be shown in the space provided. If made by a partnership the name and post office address of each member of the partnership must be shown and the proposal signed by all partners or evidence in the form of a partnership agreement must be submitted showing the authority of the partner to enter, on behalf of said partnership, into contract with the State. If made by a corporation the proposal must show the name, titles, and business address of the president, secretary and treasurer and also evidence in the form of a corporate resolution must be submitted showing the authority of the particular corporate representative to enter on behalf of said corporation into contract with the State. If made by a joint venture the name and post office address of each member of the individual firm, partnership or corporation comprising the joint-venture must be shown with other pertinent information required of individuals, partnerships or corporations as the case may be. The proposal must be signed by all parties to the joint-venture or evidence in the form of a Joint-Venture Agreement must be submitted showing the authority of the joint-venture's representative to enter on behalf of said joint-venture into contract with the State.

2.7.3 Pursuant to the requirements of Section 103D-302, HRS, each Bidder shall include in its bid the name of each person or firm to be engaged by the Bidder on the project as joint contractor or subcontractor indicating also the nature and scope of work to be performed by such joint contractor and/or subcontractor and their respective contractor's license number. If the Bidder fails to list a joint contractor or subcontractor, the State may accept the bid if it is in the State's best interest and the value of the work to be performed by the joint contractor or

subcontractor is equal to or less than one percent of the total bid amount. The Bidder shall be solely responsible for verifying that their joint contractor or subcontractor has the proper license at the time of the submitted bid.

## 2.8 BID SECURITY §3-122-223(d) HAR

2.8.1 Subject to the exceptions in Section 3-122-223(d) HAR, all lump sum bids of \$25,000 and higher, or lump sum base bids including alternates of \$25,000 and higher, that are not accompanied by bid security are non-responsive. Bid security shall be one of the following: §3-122-222(a) HAR

2.8.1.1 Surety bid bond underwritten by a company licensed to issue bonds in this State which shall be substantially in the form of the Surety Bid Bond form in the Appendix; or

2.8.1.2 Legal Tender; or

2.8.1.3 Certificate of Deposit; Credit Union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, 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.
- (c) **CAUTION** - Bidders are cautioned that certificates of deposit or share certificates with an early withdrawal penalty must have a face value sufficient to cover the maximum penalty amount in addition to the proposal guaranty requirement. If the certificate is made out to two names, the certificate must be assigned unconditionally to the Department of Defense.

2.8.2 Unless otherwise stated, the bid security shall be in an amount equal to at least five percent (5%) of the lump sum bid or lump sum base bid including alternates or in an amount required by the terms of the federal funding, where applicable.

2.8.3 If the Bidder is a corporation, evidence in the form of a corporate resolution, authorizing the corporate representative to execute the bond must be submitted with the proposal. (See sample in Appendix.) If the Bidder is a partnership, all partners must sign the bond

or evidence in the form of a partnership agreement must be submitted showing the authority of the partner.

2.8.4 If the Bidder is a joint -venture, all parties to the joint venture must sign the bond; provided, that one party to the joint-venture may sign on behalf of the joint-venture if evidence in the form of a joint-venture agreement or power of attorney, is submitted showing the authority of the signatory to sign the bond on behalf of the joint-venture.

2.8.5 In the case where the award will be made on a group or item basis, the amount of bid security shall be based on the total bid for all groups or items submitted.

2.8.6 Bidders are cautioned that surety bid bonds which place a limit in value to the difference between the bid amount and the next acceptable bid, such value not to exceed the purported amount of the bond, are not acceptable. Also, surety bid bonds which place a time limit on the right of the State to make claim other than allowed by statutes or these GENERAL CONDITIONS are not acceptable. Bidders are hereby notified that a surety bid bond containing such limitation(s) is not acceptable and a bid accompanied by such surety bid bond will be automatically rejected.

**2.9 DELIVERY OF PROPOSALS** - The entire proposal shall be placed together with the bid security, in a sealed envelope so marked as to indicate the identity of the project, the project number, the date of bid opening and the name and address of the bidder and then delivered as indicated in the Notice to Contractors. Bids which do not comply with this requirement may not be considered. Proposals will be received up to the time fixed in the public notice for opening of bids and must be in the hands of the official by the time indicated. The words "SEALED BID" must be clearly written or typed on the face of the sealed envelope containing the proposal and bid security.

**2.10 WITHDRAWAL OR REVISION OF PROPOSAL** - may be modified prior to the deadline to submit the offers by any of the following documents.

2.10.1 Withdrawal of Proposals:

2.10.1.1 A signed, written notice received in the office designated in the solicitation; or

2.10.1.2 A written notice faxed to the office designated in the solicitation; or

2.10.1.3 A telegraphic message received by telephone by the office designated in the solicitation from the receiving telegraph company office, provided the telegraph company confirms the telephone message by

sending a written copy of the telegram showing that the message was received at such office prior to the time and date set for the opening.

2.10.2 Modification of Proposals:

2.10.2.1 A written notice received in the office designated in the solicitation, stating that a modification to the offer is submitted; and

2.10.2.2 The actual modification sealed securely in a separate envelope or container, accompanying the written notice.

**2.11 PUBLIC OPENING OF PROPOSALS** - Proposals will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders, their authorized agents and other interested parties are invited to be present.

**2.12 DISQUALIFICATION OF BIDDERS** - Any one or more of the following causes will be considered as sufficient for the disqualification of a Bidder and the rejection of its proposal or proposals:

2.12.1 Non-compliance with Section 2.1 QUALIFICATION OF BIDDERS.

2.12.2 Evidence of collusion among bidders.

2.12.3 Lack of responsibility and cooperation as shown by past work such as failing to complete all of the requirements to close the project within a reasonable time or engaging in a pattern of unreasonable or frivolous claims for extra compensation.

2.12.4 Being in arrears on existing contracts with the State of Hawaii, or having defaulted on a previous contract with the State of Hawaii.

2.12.5 Lack of proper equipment and/or sufficient experience to perform the work contemplated, as revealed by the Standard Questionnaire and Financial Statement for Bidders.

2.12.6 No contractor's license or a contractor's license which does not cover type of work contemplated.

2.12.7 More than one proposal for the same work from an individual, firm, partnership, corporation or joint venture under the same or different name.

2.12.8 Delivery of bids after the deadline specified in the advertisement calling for bids.

2.12.9 Failure to pay, or satisfactorily settle, all bills overdue for labor and materials of former contracts in force at the time of issuance of proposal forms.

2.12.10 Debarment or suspension pursuant to the provisions of Chapters 103D, 104 and 444, Hawaii Revised Statutes, as amended.

## **2.13 PROTEST**

2.13.1 Protests shall be adjudicated in accordance with §103D-701, HRS and as amended.

2.13.2 No Protest based upon the contents of the solicitation shall be considered unless it is submitted in writing to the Engineer, prior to the date set for the receipt of proposals.

2.13.3 A protest of an award or proposed award pursuant to §103D-302 or §103D-303, HRS, shall be submitted in writing to the Engineer within five (5) working days after the posting of the award of the Contract.

2.13.4 In addition to any other relief, when a protest is sustained and the protestor should have been awarded the contract under the solicitation but is not, then the protestor shall be entitled to the actual costs reasonably incurred in connection with the solicitation, including bid or proposal preparation costs but not attorney's fees.

## **ARTICLE 3 - Award and Execution of Contract**

**3.1 CONSIDERATION OF PROPOSALS; CANCELLATION** - After the proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared and the results of such comparison shall be made public. In the event of a tie bid, the low bidder shall be determined by lot. In the comparison of bids, words written in the proposals will govern over figures and unit prices will govern over totals. Until the award of the contract, the Department may cancel the solicitation, reject any and all proposals in whole or part and may waive any defects or technicalities whenever such action is deemed to be in the best interest of the State.

**3.2 IRREGULAR PROPOSALS** - Proposals will be considered irregular and may be rejected for the following reasons:

3.2.1 If the proposal is unsigned.

3.2.2 If bid security is not in accordance with Section 2.8 BID SECURITY.

3.2.3 If proposal is on a form other than that furnished by the Department; or if the form is altered or any part thereof detached.

3.2.4 If the proposal shows any non-compliance with applicable law, alteration of form, additions not called, conditional bids, incomplete bids, non initialed erasures, other defects, or if the prices are obviously unbalanced.

3.2.5 If the Bidder adds any provisions reserving the right to accept or reject an award.

3.2.6 If the Bidder adds any provisions reserving the right to enter into a contract pursuant to an award.

3.2.7 When a proposal is signed by an officer or officers of a corporation and a currently certified corporate resolution authorizing such signer(s) to submit such proposal is not submitted with the proposal or when the proposal is signed by an agent other than the officer or officers of a corporation or a member of a partnership and a power of attorney is not submitted with the proposal.

3.2.8 Where there is an incomplete or ambiguous listing of joint contractors and/or subcontractors the proposal may be rejected. All work which is not listed as being performed by joint contractors and/or subcontractors must be performed by the bidder with its own employees. Additions to the list of joint contractors or subcontractors will not be allowed. Whenever there is a doubt as to the completeness of the list, the Bidder will be required to submit within five (5) working days, a written confirmation that the work in question will be performed with its own work force. Whenever there is more than one joint contractor and/or subcontractor listed for the same item of work, the Bidder will be required to either confirm in writing within five (5) working days that all joint contractors or subcontractors listed will actually be engaged on the project or obtain within five (5) working days written releases from those joint contractors and/or subcontractors who will not be engaged.

3.2.9 If in the opinion of the Engineer, the Bidder and its listed subcontractors do not have the contractor's licenses or combination of contractor's licenses necessary to complete all of the work.

## **3.3 CORRECTION OF BIDS AND WITHDRAWAL OF BIDS §3-122-31 HAR**

3.3.1 Corrections to bids after bid openings but prior to award may be made under the following conditions:

3.3.1.1 If the mistake is attributable to an arithmetical error, the Engineer shall so correct the mistake. In case of error in extension of bid price, the unit price shall govern.

3.3.1.2 If the mistake is a minor informality which shall not affect price, quantity, quality, delivery, or contractual conditions, the Bidder shall request correction by submitting proof of evidentiary value which demonstrates that a mistake was made. The Engineer shall prepare a written approval or denial in response to this request. Examples of such mistakes include:

- (a) Typographical errors;
- (b) Transposition errors;
- (c) Failure of a Bidder to sign the bid, but only if the unsigned bid is accompanied by other material indicating the Bidder's intent to be bound.

3.3.1.3 For reasons not allowable under paragraphs 3.3.1.1 and 3.3.1.2 when the Engineer determines that the correction or waiver of an obvious mistake is in the best interest of the Department or is warranted for the fair treatment of other bidders.

3.3.2 Withdrawal of bids after bid opening but prior to award may be made when the bid contains a mistake attributable to an obvious error which affects price, quantity, quality, delivery, or contractual conditions, and the bidder requests withdrawal by submitting proof of evidentiary value which demonstrates that a mistake was made. The Contracting Officer shall prepare a written approval or denial in response to this request.

3.3.3 Correction or withdrawal of bids after award is not permissible except in response to a written withdrawal or correction request by the Contractor, and the Engineer makes a written determination that the Department's procurement practices and policies would not be materially affected by such correction or withdrawal.

### **3.4 AWARD OF CONTRACT**

3.4.1 The award of contract, if it be awarded, will be made within ninety (90) consecutive calendar days after the opening of the proposals to the lowest responsive and responsive Bidder (including the alternate or alternates which may be selected by the Engineer in the case of alternate bids) whose proposal complies with all the requirements prescribed, but in no case will an award be made until all necessary investigations are made. The successful Bidder will be notified, by letter mailed to the address shown on the proposal, that its bid has been accepted and that it has been awarded the contract.

3.4.2 If the contract is not awarded within the ninety (90) days noted in paragraph 3.4.1 above, 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.

3.4.3 No contract will be awarded to any person or firm suspended or debarred under the provisions of Chapters 103D, 104 and Chapter 444, Hawaii Revised Statutes as amended.

3.4.4 The contract will be drawn on the forms furnished by the Comptroller. The contract will not be binding upon the Department until all required signatures have been affixed thereto and written certification that funds are available for the work has been made.

**3.5 CANCELLATION OF AWARD** - The Department reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties. The exclusive remedy to the awardee for such cancellation shall be payment of the reasonable bid preparation costs and the reimbursement of any direct expenses incurred as directed in the Notice of Award. Such cancellation will not incur any liability by the Department to any other Bidder.

**3.6 RETURN OF BID SECURITY** - All bid securities, except those of the four (4) lowest Bidders, will be returned following the opening and checking of the proposals. The retained bid securities of the four lowest Bidders will be returned within five (5) working days following the complete execution of the contract.

### **3.7 REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS**

3.7.1 Performance and Payment Bonds shall be required for contracts \$25,000 and higher. At the time of the execution of the contract, the successful Bidder shall file good and sufficient performance and payment bonds on the form furnished by the Department (see Appendix), each in an amount equal to one hundred percent (100%) of the amount of the contract price unless otherwise stated in the solicitation of bids. Acceptable performance and payment bonds shall be limited to the following:

3.7.1.2 Surety bonds underwritten by a company licensed to issue bonds in this State; or

3.7.1.3 A certificate of deposit; credit union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, 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 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 acceptable.

3.7.2 If the Contractor fails to deliver the required performance and payment bonds, the contractor's award shall be canceled, the Department shall have the remedies provided under Section 3.9 FAILURE TO EXECUTE THE CONTRACT and award of the contract shall be made to the next lowest responsible and responsive bidder.

### **3.8 CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS**

Contractors are hereby notified of the applicability of Section 11-205.5, 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.

### **3.9 EXECUTION OF THE CONTRACT**

3.9.1 Upon acceptance of the successful bidder's offer by the Contracting Officer, the Contractor shall provide satisfactory performance and payments bonds within ten (10) calendar days after the award of the contract or within such further time as granted by the Contracting Officer. No proposal or contract shall be considered binding upon the State until the contract has been fully and properly executed by all parties thereto and the Comptroller has endorsed thereon its certificate, as required by Section 103D-309, HRS, that there is an available unexpended appropriation or balance of an appropriation over and above all outstanding contracts sufficient to cover the State's amount required by such contract.

3.9.2 On any individual award totaling less than \$25,000, the State reserves the right to execute the contract by the issuance of a State Purchase Order. Issuance of a State Purchase Order shall result in a binding contract between the parties without further action by the State. The issuance of a Purchase Order shall not be deemed a waiver of these General Conditions and Contract Document requirements.

### **3.10 FAILURE TO EXECUTE THE CONTRACT**

3.10.1 Before the Award - If a low Bidder without legal justification withdraws its bid after the opening of bids but before the award of the contract, the State shall be entitled to retain as liquidated damages the amount established as bid security, and may take all appropriate actions to recover the performance liquidated damages sum from the property or third-party obligations deposited as bid security.

3.10.2 After the Award - If the Bidder to whom a contract is awarded shall fail or neglect to furnish security within ten (10) calendar days after such award or within such further time as the Contracting Officer may allow, the State shall be entitled to recover from such Bidder its actual damages, including but not limited to the difference between the bid and the next lowest responsive bid, as well as personnel and administrative costs, consulting and legal fees and other expenses incurred in arranging a contract with the next low responsive bidder or calling for new bids. The State may apply all or part of the amount of the bid security to reduce its damages. If upon determination by the State of the amount of its damages the bid security exceeds that amount, it shall release or return the excess to the person who provided same.

3.10.3 Engineer's Options - Upon a withdrawal of the lowest responsive bid, or upon a refusal or failure of the lowest Bidder to execute the contract, the Engineer may thereupon award the contract to the next lowest responsible and responsive Bidder or may call for new bids, whichever method the Engineer may deem to be in the best interests of the State.

### **3.11 NOTICE TO PROCEED**

3.11.1 After the contract is fully executed and signed by the Department of Defense, the Contractor will be sent a formal Notice to Proceed letter advising the Contractor of the date on which it may proceed with the work. The Contractor shall be allowed ten (10) consecutive working days from said date to begin its work. In the event that the Contractor refuses or neglects to start the work, the Engineer may terminate the contract in accordance with Section 7.27 TERMINATION OF CONTRACT FOR CAUSE.

3.11.2 The Contractor may commence its operations strictly at its own risk prior to receipt of the formal notice to proceed, provided it makes a written request and has received approval from the Engineer in writing. All work performed shall be conducted in accordance with Section 7.1 PROSECUTION OF THE WORK.

3.11.3 In certain cases, the State, with agreement of the Contractor, may issue a Notice to Proceed before full execution of the contract by the Engineer and it may

further issue a Notice to Proceed concurrently with the Notice of Award.

3.11.4 In the event the Notice to Proceed is not issued within one hundred and eighty (180) days after the date of the award of contract the Contractor may submit a claim for increased labor and material costs (but not overhead costs) which are directly attributable to the delay beyond the first 180 days. Such claims shall be accompanied with the necessary documentation to justify the claim. No payment will be made for escalation costs that are not fully justified.

## **GENERAL CONDITIONS**

### **ARTICLE 4 - Scope of Work**

**4.1 INTENT OF CONTRACT, DUTY OF CONTRACTOR** - The intent of the Contract is to provide for the construction, complete in every detail, of the Work described at the accepted bid price and within the time established by the contract. The Contractor has the duty to furnish all labor, materials, equipment, tools, transportation, incidentals and supplies and to determine the means, methods and schedules required to complete the work in accordance with the drawings, specifications and terms of the contract.

**4.2 CHANGES** - The Engineer may at any time, during the progress of the work, by written order, and without notice to the sureties, make changes in the work as may be found to be necessary or desirable. Such changes shall not invalidate the Contract nor release the Surety, and the Contractor will perform the work as changed, as though it had been a part of the original Contract.

4.2.1 Minor Changes - Minor changes in the work may be directed by the Engineer with no change in contract price or time of performance. Minor changes are consistent with the intent of the Contract Documents and do not substantially alter the type of work to be performed or involve any adjustment to the contract sum or extension of the contract time.

4.2.2 Oral Orders

4.2.2.1 Any oral order, direction, instruction, interpretation or determination from the Engineer or any other person which in the opinion of the Contractor causes any change, shall be considered as a change only if the Contractor gives the Engineer written notice of its intent to treat such oral order, direction, instruction, interpretation or determination as a change directive. Such written notice must be delivered to the Engineer before the Contractor acts in conformity with the oral order, direction, instruction, interpretation or determination, but not more than five (5) days after

delivery of the oral order to the Contractor. The written notice shall state the date, circumstances, whether a time extension will be requested, and source of the order that the Contractor regards as a change. Such written notice may not be waived and shall be a condition precedent to the filing of any claim by the Contractor. Unless the Contractor acts in accordance with this procedure, any such oral order shall not be treated as a change for which the Contractor may make a claim for an increase in the contract time or contract price related to such work.

4.2.2.2 No more than five (5) days after receipt of the written notice from the Contractor, a Field Order shall be issued for the subject work if the State agrees that it constitutes a change. If no Field Order is issued in the time established, it shall be deemed a rejection of Contractor's claim for a change. If the Contractor objects to the failure to issue a Field Order, it shall file a written protest with the Engineer within thirty (30) days after delivery to the Engineer of the Contractor's written notice of its intention to treat the oral order as a change. In all cases, the Contractor shall proceed with the work. The protest shall be determined as provided in Section 7.25 DISPUTES AND CLAIMS.

4.2.3 Field Orders – Upon receipt of a Field Order, the Contractor shall proceed with the changes as ordered. If the Contractor does not agree with any of the terms or conditions or in the adjustment or non-adjustment to the contract time and / or contract price, Contractor shall file a notice of intent to claim within thirty (30) calendar days after receipt of the written Field Order that was not agreed upon by both parties. Failure to file such protest within the time specified shall constitute agreement on the part of the Contractor with the terms, conditions, amounts and adjustment or non-adjustment to contract price and / or contract time set forth in the Field Order. The requirement for timely written notice shall be a condition precedent to the assertion of a claim.

4.2.4 Change Orders

4.2.4.1 The Department will issue sequentially numbered Change Orders at times it deems appropriate during the contract period. A Change Order may contain the adjustment in contract price and / or time for a number of Field Orders. The Change Order will be issued in the format attached (refer to the Appendix). No payment for any change will be made until the change order is issued.

4.2.4.2 The penal sum of the Surety Performance and Payment Bonds will be adjusted by the amount of each and every Change Order.

4.2.4.3 Upon receipt of a change order, that the Contractor does not agree with any of the terms or conditions or the adjustments or non adjustments of the

contract price or contract time; the Contractor shall not execute or sign the change order, but shall return the unsigned change order, along with a written notification of the conditions or items that are in dispute.

4.2.4.4 If the Contractor signs or executes the change order, this constitutes an agreement on the part of the Contractor with the terms and conditions of the change order. A change order that is mutually agreed to and signed by the parties of the contract constitutes a contract modification.

4.2.5 Claim Notification – The Contractor shall file a notice of intent to claim for a disputed change order within 30 calendar days after receipt of the written order. Failure to file the protest within the time specified constitutes an agreement on the part of the Contractor within the terms, conditions, amounts and adjustment or non-adjustment to contract price or contract time set forth in the dispute change order. The requirement for timely written notice shall be a condition precedent to the assertion of a claim.

4.2.6 Proceeding with Directed Work – Upon receipt of a contract modification, change order, or field order, the Contractor shall proceed with the directed changes and instructions. The Contractor’s right to make a claim for additional compensation or an extension of time for completion is not affected by proceeding with the changes and instructions described in a change order and field order.

4.2.7 Pricing or Negotiating Costs Not Allowed – The Contractor’s cost of responding to requests for price or time adjustments is included in the contract price. No additional compensation will be allowed unless authorized by the Contracting Officer.

#### **4.3 DUTY OF CONTRACTOR TO PROVIDE PROPOSAL FOR CHANGES**

4.3.1 A Field Order may request the Contractor to supply the Department with a proposal for an adjustment to the contract time or contract price for the work described therein. Any such request for a proposal shall not affect the duty of the Contractor to proceed as ordered with the work described in the Field Order.

4.3.2 The Engineer from time to time may issue a Bulletin to the Contractor requesting price and / or time adjustment proposals for contemplated changes in the work. A Bulletin is not a directive for the Contractor to perform the work described therein.

4.3.3 Within fifteen (15) days after receipt of a Bulletin or Field Order containing a request for proposal, the Contractor shall submit to the Engineer a detailed

written statement in a format similar to the one shown in the Appendix to these General Conditions setting forth all charges the Contractor proposes for the change and the proposed adjustment of the contract time, all properly itemized and supported by sufficient substantiating data to permit evaluation. No time extension will be granted for delays caused by late Contractor pricing of changes or proposed changes. If the project is delayed because Contractor failed to submit the cost proposal within the fifteen (15) days, or as allowed by the Engineer, performance liquidated damages will be assessed in accordance with Section 7.26 FAILURE TO COMPLETE THE WORK ON TIME.

4.3.4 No payment shall be allowed to the Contractor for pricing or negotiating proposed or actual changes.

#### **4.4 PRICE ADJUSTMENT HRS 103D-501**

4.4.1 A fully executed change order or other document permitting billing for the adjustment in price under any method listed in paragraphs (4.4.1.1) through (4.4.1.5) shall be issued within ten days after agreement on the price adjustment. Any adjustment in the contract price pursuant to a change or claim in this contract shall be made in one or more of the following ways:

4.4.1.1 By agreement on a fixed price adjustment before commencement of the pertinent performance;

4.4.1.2 By unit prices specified in the contract or subsequently agreed upon before commencement of the pertinent performance;

4.4.1.3 Whenever there is a variation in quantity for any work covered by any line item in the schedule of costs submitted as required by Section 7.2 COMMENCEMENT REQUIREMENTS, by the Department at its discretion, adjusting the lump sum price proportionately;

4.4.1.4 Force Account Method. At the sole option of the Contracting Officer, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as specified in Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT and the force account provision of Section 8.3 PAYMENT FOR ADDITIONAL WORK before commencement of the pertinent performance;

4.4.1.5 In such other manner as the parties may mutually agree upon before commencement of the pertinent performance; or

4.4.1.6 In the absence of an agreement between the two parties:



4.4.1.6.a For change orders with value not exceeding \$50,000 by documented actual costs of the work, allowing for overhead and profit as set forth in Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. A change order shall be issued within fifteen days of submission by the contractor of proper documentation of completed force account work, whether periodic (conforming to the applicable billing cycle) or final. The procurement officer shall return any documentation that is defective to the contractor within fifteen days after receipt, with a statement identifying the defect; or

4.4.1.6.b For change orders with value exceeding \$50,000 by a unilateral determination by the Contracting Officer of the reasonable and necessary costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as computed by the Contracting Officer in accordance with applicable sections of Chapters 3-123 and 3-126 of the Hawaii Administrative Rules, and Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. When a unilateral determination has been made, a unilateral change order shall be issued within ten days. Upon receipt of the unilateral change order, if the contractor does not agree with any of the terms or conditions, or the adjustment of non-adjustment of the contract time or contract price, the contractor shall file a notice of intent to claim within thirty days after the receipt of the written unilateral change order. Failure to file a protest within the time specified shall constitute agreement on the part of the contractor with the terms, conditions, amounts, and adjustment or non-adjustment of the contract time or the contract price set forth in the unilateral change order.

4.4.1.7 In such other manner as the parties may mutually agree;

4.4.1.8 At the sole option of the Engineer, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as specified in Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT and the force account provision of Section 8.3 PAYMENT FOR ADDITIONAL WORK; or

4.4.1.9 In the absence of an agreement between the two parties, by a unilateral determination by the Engineer of the reasonable and necessary costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as computed by the Engineer in accordance with applicable sections of Chapters 3-123 and 3-126 of the Hawaii Administrative Rules and Regulations, and Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

4.4.2 Cost or Pricing Data – Contractor shall provide and certify cost or pricing data for any price adjustment to a contract involving aggregate increases and decreases

in costs plus applicable profits expected to exceed \$100,000. The certified cost or pricing data shall be subject to the provisions of HAR chapter 3-122, subchapter 15.

#### **4.5 ALLOWANCES FOR OVERHEAD AND PROFIT HRS103D-501**

4.5.1 In determining the cost or credit to the Department resulting from a change, the allowances for all overhead, including, extended overhead resulting from adjustments to contract time (including home office, branch office and field overhead, and related delay impact costs) and profit combined, shall not exceed the percentages set forth below:

4.5.1.1 For the Contractor, for any work performed by its own labor forces, twenty percent (20%) of the direct cost;

4.5.1.2 For each subcontractor involved, for any work performed by its own forces, twenty percent (20%) of the direct cost;

4.5.1.3 For the Contractor or any subcontractor, for work performed by their subcontractors, ten percent (10%) of the amount due the performing subcontractor.

4.5.2 Not more than three markup allowance line item additions not exceeding the maximum percentage shown above will be allowed for profit and overhead, regardless of the number of tier subcontractors.

4.5.3 The allowance percentages will be applied to all credits and to the net increase of direct costs where work is added and deleted by the changes.

#### **4.6 PAYMENT FOR DELETED MATERIAL**

4.6.1 Cancelled Orders - If acceptable material was ordered by the Contractor for any item deleted by an ordered change in the work prior to the date of notification of such deletion by the Engineer, the Contractor shall use its best efforts to cancel the order. The Department shall pay reasonable cancellation charges required by the supplier excluding any markup for overhead and profit to the Contractor.

4.6.2 Returned Materials - If acceptable deleted material is in the possession of the Contractor or is ultimately received by the Contractor, if such material is returnable to the supplier and the Engineer so directs, the material shall be returned and the Contractor will be paid for the reasonable charges made by the supplier for the return of the material, excluding any markup for overhead and profit to the Contractor. The cost to the

Contractor for handling the returned material will be paid for as provided in Section 4.4 PRICE ADJUSTMENT.

4.6.3 Uncancelled Materials - If orders for acceptable deleted material cannot be canceled at a reasonable cost, it will be paid for at the actual cost to the Contractor including an appropriate markup for overhead and profit as set forth in Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. In such case, the material paid for shall become the property of the State and the cost of further storage and handling shall be paid for as provided in Section 4.4 PRICE ADJUSTMENT.

#### **4.7 VARIATIONS IN ESTIMATED QUANTITIES §3-125-10 HAR**

4.7.1 Where the quantity of a major unit price item in this contract is estimated on the proposal form and where the actual quantity of such pay item varies more than fifteen percent (15%) above or below the estimated quantity stated in this contract, an adjustment in the contract price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above one hundred fifteen percent (115%) or below eighty-five percent (85%) of the estimated quantity. The adjustment shall be subject to Section 4.4 PRICE ADJUSTMENT and Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. If the quantity variation is such as to cause an increase in the time necessary for completion, the Engineer shall, upon receipt of a written request for an extension of time within thirty (30) days of the item's completion, ascertain the facts and make such adjustment to the completion date as the Engineer finds justified.

**4.8 VARIATIONS IN BOTTOM ELEVATIONS** The Contractor shall plan and construct to the bottom elevations of footings, piles, drilled shafts, or cofferdams as shown on the drawings. When the bottom of a pile, drilled shaft, or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the drawings or direction of the Engineer. In the event the bottom elevation is lowered, the Contractor shall be entitled to additional payment in accordance with Sections 4.4 PRICE ADJUSTMENT and 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. In the event the bottom elevation is raised, the State shall be entitled to a credit in accordance with Sections 4.2 CHANGES, 4.4 PRICE ADJUSTMENT and 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

#### **4.9 DIFFERING SITE CONDITIONS §3-125-11 HAR**

4.9.1 During the progress of the work, if the Contractor encounters conditions at the site differing materially from those shown in the drawings and specifications, Contractor shall promptly, and before any such conditions are disturbed or damaged (except in an emergency as required by subsection 7.17.8), notify the Engineer in writing of:

4.9.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the contract; or

4.9.1.2 Unknown physical conditions at the site, of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract.

4.9.2 After receipt of written notice, the Engineer shall promptly investigate the site, and if it is found that such conditions do materially differ and cause an increase in the Contractor's cost of, or the time required to, perform any part of the Work, whether or not changed as a result of such conditions, an adjustment shall be made and the contract modified accordingly. Any adjustment in contract price made pursuant to this Section 4.9 shall be determined in accordance with Sections 4.4 PRICE ADJUSTMENT and 7.25 DISPUTES AND CLAIMS.

4.9.3 Nothing contained in this Section 4.9 shall be grounds for an adjustment in compensation if the Contractor had actual knowledge or should have known of the existence of such conditions prior to the submission of bids.

#### **4.10 UTILITIES AND SERVICES**

4.10.1 The cost of all the following will be included in the contract price and the Contractor shall be fully responsible for:

4.10.1.1 Reviewing and checking all such information and data,

4.10.1.2 Locating all underground and overhead utilities shown or indicated in the contract documents,

4.10.1.3 Coordination of the Work with the Owners of such underground and overhead utilities during construction, and

4.10.1.4 The safety and protection of all such underground and overhead utilities as provided in Section 7.17 PROTECTION OF PERSONS AND PROPERTY and repairing any damage thereto resulting from the work.

4.10.2 Unknown Utilities - During the progress of the work, if an underground utility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents, or found at a location that is substantially different than shown or indicated in the Contract Documents, Contractor shall promptly, and before any such conditions are disturbed or damaged (except in an emergency as required by subsection 7.17.8), notify the Engineer. Contractor shall be responsible for the safety and protection of the underground utility as provided in Section 7.17 PROTECTION OF PERSONS AND PROPERTY. Refer to subsections 4.9.2 and 4.9.3.

4.10.3 If the Engineer determines a change in the Contract Documents is required, a Field Order or Change Order will be issued. Upon issuance of a duly authorized Field Order or Change Order regarding the disposition of a newly discovered utility, Contractor shall be responsible for damages to the utility, including any damage claims due to the disruption of service caused by the utility being damaged.

4.10.4 Restoration of Damaged Utilities - The Contractor shall repair and restore to pre-damaged condition any utilities or any other property it damaged. The Contractor shall be liable for any resulting damages, to the Work or to the utility owner or property owner and shall pay any claim due to the disruption of service caused by the utilities being damaged. Contractor shall defend and save harmless the State from all suits, actions or claims of any character brought on account of such damages, whether or not the State may have been partially at fault. Contractor shall obtain public liability and property damage insurance pursuant to Article 7 PROSECUTION AND PROGRESS to cover such risk of damage.

4.10.5 In the event the Contractor, simultaneously with the discovery of an unknown utility or other property, damages that utility or other property, the Contractor shall immediately notify the Engineer. If the Contractor is without fault in such a situation, notwithstanding subsection 4.10.4, the Contractor shall not be liable for resulting damages or the defense of the State from claims brought on account of said damages to unknown utilities or other property. Upon instruction from the Engineer, the Contractor shall repair all damages and execute a plan for dealing with the damaged utility or other property. This repair work shall be considered additional work as covered in Section 4.2 CHANGES.

## **ARTICLE 5 - Control of Work**

### **5.1 AUTHORITY OF THE ENGINEER**

5.1.1 The Engineer shall make final and conclusive decisions on all questions which may arise relating to the quality and acceptability of the materials furnished and work performed, the manner of performance and rate of progress of the work, the interpretation of the Contract Documents, the acceptable fulfillment of the contract on the part of the Contractor, the compensation under the Contract and the mutual rights of the parties to the Contract.

5.1.2 The Engineer shall have the authority to enforce and make effective such decisions and orders at the Contractor's expense when the Contractor fails to carry such decisions and orders out promptly and diligently.

5.1.3 The Engineer shall have the authority to suspend the work wholly or in part as provided in Section 7.24 SUSPENSION OF WORK.

5.1.4 The Engineer may delegate specific authority to act for the Engineer to a specific person or persons. Such delegation of authority shall be established in writing to the Contractor.

### **5.2 AUTHORITY OF THE INSPECTOR**

5.2.1 The Inspector shall observe and inspect the contract performance and materials. The Inspector does not have any authority vested in the Engineer unless specifically delegated in writing.

5.2.2 The Inspector may offer advice and recommendations to the Contractor, but any such advice or recommendations are not directives from the Engineer.

5.2.3 The Inspector has no authority to allow deviations from the Contract Documents and may reject any and all work that the Inspector deems is not in conformity with the contract requirements. Failure of an Inspector at any time to reject non-conforming work shall not be considered a waiver of the Department's right to require work in strict conformity with the Contract Documents as a condition of final acceptance.

**5.3 AUTHORITY OF CONSULTANT(S)** - The Department may engage Consultant(s) for limited or full observation to supplement the inspections performed by the State and respective Counties. Unless otherwise specified in writing to the Contractor, such retained Consultant(s) will have the authority of a Project Inspector.

### **5.4 SHOP DRAWINGS AND OTHER SUBMITTALS**

5.4.1 The following documents shall be submitted where required by the contract documents:

#### 5.4.1.1 Shop Drawings

(1) The Contractor shall prepare, and thoroughly check, approve, all shop drawings, including those prepared by subcontractors or any other persons. The Contractor shall indicate its approval by stamping and signing each drawing. Any shop drawing submitted without being reviewed, stamped and signed will be considered as not having been submitted, and any delay caused thereby shall be the Contractor's responsibility.

(2) Shop drawings shall indicate in detail all parts of an item of work, including erection and setting instructions and engagements with work of other trades or other separate contractors. Shop drawings for structural steel, millwork and pre-cast concrete shall consist of calculations, fabrication details, erection drawings and other working drawings, as necessary, to show the details, dimensions, sizes of members, anchor bolt plans, insert locations and other information necessary for the complete fabrication and erection of the structure to be constructed.

(3) All shop drawings as required by the contract, or as determined by the Engineer to be necessary to illustrate details of the Work shall be submitted to the Engineer with such promptness as to cause no delay in the work or in that of any other Contractor. Delay caused by the failure of the Contractor to submit shop drawings on a timely basis to allow for review, possible resubmittal and acceptance will not be considered as a justifiable reason for a contract time extension. Contractor, at its own risk, may proceed with the work affected by the shop drawings before receiving acceptance; however the Department shall not be liable for any costs or time required for the correction of work done without the benefit of accepted shop drawings.

(4) It is the Contractor's obligation and responsibility to check all of its and its subcontractor's shop drawings and be fully responsible for them and for coordination with connecting and other related work. The Contractor shall prepare, and submit to the Engineer coordination drawings showing the installation locations of all plumbing, piping, duct and electrical work including equipment throughout the project. By approving and submitting shop drawings, the Contractor thereby represents that it has determined and verified all field measurements and field construction criteria, or will do so, and that it has checked and coordinated each shop drawing with the requirements of the work and the contract documents. When shop drawings are prepared and processed before field measurements and field construction criteria can be or have been determined or

verified, the Contractor shall make all necessary adjustments in the work or resubmit further shop drawings, all at no change in contract price or time.

5.4.1.2 Shop Drawing Form - Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and number of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:

- (1) Date of Submission
- (2) Name of Project
- (3) Project Number
- (4) Location of Project
- (5) Name of submitting Contractor and Subcontractor
- (6) Revision Number

5.4.1.3 The size of the sheets that shop drawings are prepared on shall be as appropriate to suit the drawing being presented so that the information is clearly and legibly depicted. At the determination of the Engineer, for each sheet of drawings, the submittal shall consist of either; one reproducible transparency and five prints, or eight prints.

5.4.1.4 Descriptive Sheets and Other Submittals - When a submittal is required by the contract, the Contractor shall submit to the Engineer eight (8) complete sets of descriptive sheets such as shop drawings, brochures, catalogs, illustrations, calculation, material safety data sheets (MSDS), certificates, reports, warranty, etc., which will completely describe the material, product, equipment, furniture or appliances to be used in the project as shown in the drawings and specifications and how it will be integrated into adjoining construction. When submittals are specified to be submitted under Web Based Construction Management System, the number of complete sets will be as specified or as directed by the Engineer. Prior to the submittal, the Contractor shall review and check all submittal sheets for conformity to the contract requirements and indicate such conformity by marking or stamping and signing each sheet. Where descriptive sheets include materials, systems, options, accessories, etc. that do not apply to this contract, non-relevant items shall be crossed out so that all remaining information will be considered applicable to this contract. It is the responsibility of the Contractor to submit descriptive sheets for review and acceptance by the Engineer as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit descriptive sheets as required will not be considered as justifiable reasons for contract time extension.

5.4.1.5 Material Samples and Color Samples – When material and color sample submittals are required by the contract, the Contractor shall submit to the Engineer no less than three (3) samples conforming to Section 6.6 MATERIAL SAMPLES. One sample will be retained by the Consultant, one sample will be retained by the State, and the remaining sample(s) will be returned to the contractor. Prior to the material and color submittal, the Contractor shall review and check all samples for conformity to the contract requirements and indicate such conformity by marking or stamping and signing each sample. It is the responsibility of the Contractor to submit samples for review and acceptance by the Engineer as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit material and color samples as required will not be considered as justifiable reasons for contract time extension.

5.4.1.6 Unless the technical sections (Divisions 2 – 16) specifically require the Contractor furnish a greater quantity of shop drawings and other submittals, the Contractor shall furnish the quantities required by this section.

5.4.2 Submittal Variances - The Contractor shall include with the submittal, written notification clearly identifying all deviations or variances from the contract drawings, specifications and other Contract Documents. The notice shall be in a written form separate from the submittal. The variances shall also be clearly indicated on the shop drawing, descriptive sheet, material sample or color sample. Failure to so notify of and identify such variances shall be grounds for the subsequent rejection of the related work or materials, notwithstanding that the submittal was accepted by the Engineer. If the variances are not acceptable to the Engineer, the Contractor will be required to furnish the item as specified or indicated on the contract documents at no additional cost or time.

5.4.3 Review and Acceptance Process - Submittals will be returned to the Contractor within twenty one (21) days (for projects on Oahu) and twenty five (25) days (for projects on the islands of Hawaii, Maui, Kauai, Molokai and Lanai) after receipt by the Engineer unless otherwise agreed between the Contractor and the Engineer or as stated elsewhere in the contract documents.

5.4.3.1 The acceptance by the Engineer of the Contractor's submittal relates only to their sufficiency and compliance with the intention of the contract. Acceptance by the Engineer of the Contractor's submittal does not relieve the Contractor of any responsibility for accuracy of dimensions, details, and proper fit, and for agreement and conformity of submittal

with the contract drawings and specifications. Nor will the Engineer's acceptance relieve the Contractor of responsibility for variance from the contract documents unless the Contractor, at the time of submittal, has provided notice and identification of such variances required by this section. Acceptance of a variance shall not justify a contract price or time adjustment unless the Contractor requests such an adjustment at the time of submittal and the adjustment are explicitly agreed to in writing by the Engineer. Any such request shall include price details and proposed scheduling modifications. Acceptance of a variance is subject to all contract terms, stipulations and covenants, and is without prejudice to any and all rights under the surety bond.

5.4.3.2 If the Engineer returns a submittal to the Contractor that has been rejected, the Contractor, so as not to delay the work, shall promptly make a resubmittal conforming to the requirements of the contract documents and indicating in writing on the transmittal and the subject submittal what portions of the resubmittal has been altered in order to meet the acceptance of the Engineer. Any other differences between the resubmittal and the prior submittal shall also be specifically described in the transmittal.

5.4.3.3 No mark or notation made by the Engineer on or accompanying the return of any submittal to the Contractor shall be considered a request or order for a change in work. If the Contractor believes any such mark or notation constitutes a request for a change in the work for which it is entitled to an adjustment in contract price and/or time, the Contractor must follow the same procedures established in Section 4.2 CHANGES for oral orders, directions, instructions, interpretations or determinations from the Engineer or else lose its right to claim for an adjustment.

**5.5 COORDINATION OF CONTRACT DOCUMENTS** - It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. The Contract Documents are complementary: any requirement occurring in one document is as binding as though occurring in all. In the event of conflict or discrepancy the priorities stated in the following subparagraphs shall govern:

5.5.1 Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda only to the extent specified.

5.5.2 SPECIAL CONDITIONS and Proposal shall govern over the GENERAL CONDITIONS and Specifications.

5.5.3 Specifications shall govern over drawings.

5.5.4 Specification Error - Should an error or conflict appear within the specification, the Contractor shall immediately notify the Engineer. The Engineer shall promptly issue instructions as to procedure. Any requirement occurring in one or more parts of the specification is as binding as though occurring in all applicable parts.

5.5.4.1 Should an error or conflict appear within a specification section, between a listed manufacturer / product and the performance requirements of the specification section, the performance requirements shall govern.

5.5.5 Drawings:

5.5.5.1 Schedules shall govern over all other notes and drawings.

5.5.5.2 Bottom elevations of footings shown on drawings shall govern over a general note such as: "All footings shall rest on firm, undisturbed soil and extend a minimum of a certain number of feet into natural or finish grade, whichever is lower."

5.5.5.3 Except for drawing schedules and bottom elevations as noted above, general notes shall govern over all other portions of the drawings:

5.5.5.4 Larger scale drawings shall govern over smaller scale drawings.

5.5.5.5 Figured or numerical dimensions shall govern over dimensions obtained by scaling. Measurements from the drawings when scaled shall be subject to the approval of the Engineer.

5.5.5.6 In cases of discrepancies in the figures or drawings, the discrepancies shall be immediately referred to the Engineer without whose decision said discrepancy shall not be corrected by the Contractor save at its own risk and in the settlement of any complications arising from such adjustment without the knowledge and consent of the Engineer, the Contractor shall bear all extra expense involved.

5.5.5.7 Items shown on the drawings that are completely void in terms of description, details, quality and / or performance standards in both the drawings and specifications to make a price determination shall be considered an omission and the Contractor shall immediately refer same to the Engineer for a decision.

5.5.5.8 Where there is a conflict between the architectural sheets and the civil or landscaping or

electrical sheets, etc., the conflict shall be considered a discrepancy and the Contractor shall immediately refer same to the Engineer for a decision.

5.5.5.9 Any requirement occurring in one or more of the sheets is as binding as though occurring in all applicable sheets.

**5.6 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS** - The Contractor shall carefully study and compare the Contract Documents with each other, with field conditions and with the information furnished by the State and shall at once report to the Engineer errors, conflicts, ambiguities, inconsistencies or omissions discovered. Should an item not be sufficiently detailed or explained in the Contract Documents, Contractor shall report and request the Engineer' clarification and interpretation. The Engineer will issue a clarification or interpretation that is consistent with the intent of and reasonably inferred from Contract Documents.

## **5.7 EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE**

5.7.1 The Contractor shall examine carefully the Project Site to become familiar with the conditions to be encountered in performing the Work and the requirements of the Contact Documents.

5.7.1.1 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge of the requirements of the Work to be accomplished or the conditions to be encountered in performing the project.

5.7.1.2 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge when the existence of differing site, subsurface or physical conditions could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding requirements or Contract Documents to be conducted by or for the Contractor.

5.7.2 When the Contract Drawings include a log of test borings showing a record of the data obtained by the Department's investigation of subsurface conditions, said log represents only the opinion of the Department as to the character of material encountered in its test borings and at only the location of each boring. The Contractor acknowledges that underground site conditions in Hawaii vary widely. There is no warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that other conditions may not occur.

5.7.3 Reference is made to the SPECIAL CONDITIONS for identification of subsurface investigations, reports, explorations and tests utilized by the State in preparation the Contract Documents. Such reports, drawings, boring logs etc. are not part of the Contract Documents.

## **5.8 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT**

5.8.1 Furnishing Drawings and Specifications - Contractor to supply copies of the Contract Drawings and Specifications. Contractor shall have and maintain at least one copy of the Contract Drawings and Specifications on the work site, at all times. Contractor shall cooperate with the Engineer, the Inspector(s), and other contractors in every possible way.

5.8.2 Superintendent - The Contractor shall have a competent superintendent or agent on the work site while work is being performed under the contract. The superintendent or agent shall be experienced in the type of project being undertaken and the work being performed. The superintendent or agent shall represent the Contractor and shall have the authority to act on behalf of the Contractor. Communications given to the superintendent or agent shall be as binding as if given to the Contractor.

5.8.2.1 If the superintendent or agent is not present at the work site, the Engineer shall have the right to suspend the work as described under Section 7.24 SUSPENSION OF WORK.

5.8.2.2 The Contractor shall file with the Engineer a written statement giving the name of the superintendent or agent assigned to the project. The Contractor shall be responsible for notifying the Engineer in writing of any change in the superintendent or agent.

5.8.2.3 The requirements of this subsection 5.8.2 may be waived by the Engineer.

5.8.3 Engineering Work - The Contractor shall properly and accurately lay out the work, perform all engineering work, and furnish all engineering materials and equipment required to establish and maintain all lines, grades, dimensions and elevations called for in the drawings or required in the progress of construction, unless otherwise noted in the contract documents. The Contractor will be held definitely and absolutely responsible for any errors in lines, grades, dimensions and elevations and shall at once, on instruction from the Engineer, correct and make good such errors or any errors, or faults in the work resulting from errors in

engineering performed under the requirements of its contract to the entire satisfaction of the Engineer. Full compensation for the work shall be included in the prices paid for contract items of work. No additional allowance will be made for the correction of incorrect engineering work.

5.8.3.1 The Engineer shall furnish the requisite bench elevations.

5.8.3.2 The Contractor shall locate and verify all lines, grades, dimensions and elevations indicated on the drawings before any excavation, or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer, any change shall be made in accordance with the Engineer's instruction.

5.8.3.3 The Contractor shall verify all street survey monuments (horizontal and vertical alignment) prior to final acceptance by the Engineer in accordance with any governmental requirements.

5.8.3.4 The Contractor shall provide a surveyor or Civil Engineer licensed in the State of Hawaii to verify and establish all lines, grades, dimensions and elevations.

5.8.4 Use of Structure or Improvement - The Department shall have the right, at any time during construction of the structure or improvements, to enter same for the purpose of installing by government labor or by any other Contractor or utility any necessary work in connection with the installation of facilities, it being mutually understood and agreed, however, that the Contractors, utilities and the Department will, so far as possible work to the mutual advantage of all, where their several works in the above mentioned or in unforeseen instances touch upon or interfere with each other.

As a convenience to those involved, the Engineer shall allocate the work and designate the sequence of construction in case of controversy between Contractors on separate projects under State jurisdiction.

5.8.4.1 The Department shall also have the right to use the structure, equipment, improvement or any part thereof, at any time after it is considered by the Engineer as available. In the event that the structure, equipment or any part thereof is so used, the Department shall be responsible for all expenses incidental to such use and any damages resulting from the Department's use.

5.8.4.2 Equipment warranty will commence to run before the work is complete when and if the Department begins actual use of the equipment for the purpose for which the equipment was designed and installed.

5.8.4.3 If the Department enters the structure for construction and / or occupancy and the Contractor is delayed because of interference by the Department or by extra work resulting from damage which the Contractor is not responsible for, or by extraordinary measures the Contractor must take to accommodate the Department, the Contractor shall be granted an extension of time in accordance with Section 7.21 CONTRACT TIME. However, if such use increases the cost or delays the completion of the remaining portions of work, the Contractor shall be entitled to such extra compensation or extension of time or both, as the State may determine to be proper. Any additional work necessary will be paid in accordance with Section 8.3 PAYMENT FOR ADDITIONAL WORK.

**5.9 INSPECTION** - The Engineer, the Department's consultants, Inspectors employed by the Department and other representatives duly authorized by the Department shall at all times have access to the work during its construction and shall be furnished with every reasonable facility for ascertaining at any time that the materials and the workmanship are in accordance with the requirements and intentions of the contract. All work done and all materials furnished shall be subject to inspection and acceptance.

5.9.1 Such inspection and approval may extend to all or part of the work, and to the preparation, fabrication or manufacture of the materials to be used. By entering into a contract for the supply of materials, equipment or performance of labor in connection with the Work, such Material and Equipment Supplier or Labor Contractor consents to and is subject to the terms of this Section 5.9 to the same extent as the Contractor.

5.9.2 Authority to Suspend Operations - The Inspector shall have the authority to suspend operations of any work being improperly performed by issuing a written order giving the reason for shutting down the work. Should the Contractor disregard such written order, the work done thereafter will not be accepted nor paid for.

5.9.3 The inspection of the work shall not relieve the Contractor of any of its obligations to fulfill the contract as prescribed. Notwithstanding prior payment and acceptance by the Engineer, defective and nonconforming work shall be corrected to comply with the contract requirements. Unsuitable, unspecified or unapproved materials may be rejected.

5.9.4 Federal Agency Inspection - Projects financed in whole or in part with Federal funds shall be subject to inspection and corrective requirements at all times by the Federal Agency involved at no cost to the State.

## **5.10 REMOVAL OF DEFECTIVE, NON-CONFORMING AND UNAUTHORIZED WORK**

5.10.1 All work which has been rejected as not conforming to the requirements of the Contract shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such removal or replacement. Any work done beyond the work limits shown on the drawings and specifications or established by the Engineer or any additional work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor expense.

5.10.2 Scheduling Corrective Work - The Contractor shall perform its corrective or remedial work at the convenience of the State and shall obtain the Engineer's approval of its schedule.

5.10.3 Failure to Correct Work - Upon failure on the part of the Contractor to comply promptly with any order of the Engineer made under the provisions of this Section 5.10, the Engineer shall have authority to cause defective work to be remedied or removed and replaced, and unauthorized work to be removed, at the Contractor's expense, and to deduct the costs from any monies due or to become due the Contractor.

## **5.11 VALUE ENGINEERING INCENTIVE**

§3-132 HAR amended by Act 149 SLH 1999 - On projects with contract amounts in excess of \$250,000, the following Value Engineering Incentive Clause shall apply to allow the Contractor to share in cost savings that ensue from cost reduction proposals it submits.

5.11.1 The Value Engineering Incentive Clause applies to all Value Engineering Change Proposals (cost reduction proposals, hereinafter referred to as (VECP) initiated and developed by the Contractor for changing the drawings, designs, specifications or other requirements of this contract. This clause does not, however apply to any VECP unless it is identified as such by the Contractor at the time of its submission to the Engineer.

5.11.2 Value Engineering Change Proposal - All VECP must:

5.11.2.1 Result in a savings to the State of at least four thousand dollars (\$4,000) by providing less costly items than without impairing any essential functions and characteristics such as service life, reliability, economy of operation, ease of maintenance and all necessary features of the completed work.



5.11.2.2 Require, in order to be applied to this contract, a change order to this contract.

5.11.2.3 Not adversely impact on the schedule of performance or the contract completion date.

5.11.3 VECP Required Information - The VECP will be processed expeditiously and in the same manner as prescribed for any other change order proposal. As a minimum, the following information will be submitted by the Contractor with each proposal:

5.11.3.1 A description of the difference between the existing contract requirements and the VECP, and the comparative advantages and disadvantages of each including durability, service life, reliability, economy of operation, ease of maintenance, design safety standards, desired appearance, impacts due to construction and other essential or desirable functions and characteristics as appropriate;

5.11.3.2 An itemization of the requirements of the contract which must be changed if the VECP is adopted and a recommendation as to how to make each such change;

5.11.3.3 An estimate of the reduction in performance costs that will result from adoption of the VECP taking into account the costs of implementation by the Contractor, including any amounts attributable to subcontracts, and the basis for the estimate;

5.11.3.4 A prediction of any effects the VECP would have on other costs to the State, such as State furnished property costs, costs of related items, and costs of maintenance and operation over the anticipated life of the material, equipment, or facilities as appropriate; the construction schedule, sequence and time; and bid item totals used for evaluation and payment purposes;

5.11.3.5 A statement of the time by which a change order adopting the VECP must be issued so as to obtain the maximum cost reduction during the remainder of this contract noting any effect on the contract time; and

5.11.3.6 The dates of any previous submissions of the VECP, the numbers of any Government contracts under which submitted and the previous actions by the Government, if known.

5.11.4 Required Use of Licensed Architect or Engineer - When, in the judgment of the Engineer, a VECP alters the design prepared by a registered professional architect or engineer, the Contractor shall ensure the changes to be prepared are by or under the supervision of a licensed professional architect or engineer, and stamped and so certified.

5.11.5 Unless and until a change order applies a VECP to a contract, the Contractor shall remain obligated to perform in accordance with the terms of the contract and the Department shall not be liable for delays incurred by the Contractor resulting from the time required for the Department's determination of the acceptability of the VECP.

5.11.5.1 The determination of the Engineer as to the acceptance of any VECP under a contract shall be final.

5.11.6 Acceptance of VECP - The Engineer may accept in whole or in part any VECP submitted pursuant to this section by issuing a change order to the contract. Prior to issuance of the change order, the Contractor shall submit complete final contract documents similar to those of the original contract showing the accepted changes and the new design and features as well as the following:

5.11.6.1 Design calculations;

5.11.6.2 The design criteria used; and

5.11.6.3 A detailed breakdown of costs and expenses to construct or implement such revisions.

5.11.6.4 The change order will identify the final VECP on which it is based.

5.11.7 VECP Price Adjustments - When a VECP is accepted under a contract, an adjustment in the contract price shall be made in accordance with Section 4.4 PRICE ADJUSTMENT. The adjustment shall first be established by determining the effect on the Contractor's cost of implementing the change, including any amount attributable to subcontractors and to the Department's charges to the Contractor for architectural, engineering, or other consultant services, and the staff time required to examine and review the proposal. The contract price shall then be reduced by fifty percent (50%) of the net estimated decrease in the cost of performance.

5.11.8 The Contractor may restrict the Department's right to use the data or information or both, on any sheet of a VECP or of the supporting data, submitted pursuant to this paragraph, if it is stated on that sheet as follows:

5.11.8.1 "This data or information or both shall not be disclosed outside the Department or be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this VECP. This restriction shall not limit the Department's right to use this data or information or both if obtained from another source, or is otherwise available, without limitations. If this VECP is accepted by the Department by issuance of a change

order after the use of this data or information or both in such an evaluation, the Department shall have the right to duplicate, use and disclose any data or information or both pertinent to the proposal as accepted in any manner and for any purpose whatsoever and have others so do.”

5.11.9 In the event of acceptance of a VECP, the Department shall have all rights to use, duplicate or disclose in whole or in part in any manner and for any purpose whatsoever, and to have or permit others to do so, any data or information or both reasonably necessary to fully utilize such proposal.

5.11.10 The Contractor shall submit with each VECP all required information and provide all additional information as may be required by the Engineer to evaluate and implement the VECP. The cost for preparing the VECP shall be the Contractor’s responsibility, and any part of the Contractor’s cost for implementing the change shall be due only when the proposal is accepted and a change order is issued.

5.11.11 If the services of the Department’s architect, engineer or consultant is necessary to review and evaluate a VECP, the cost therefore shall be paid for by the Contractor.

5.11.12 Each VECP shall be evaluated as applicable to this contract, and past acceptance on another Department project for a similar item shall not be automatic grounds for approval.

5.11.13 The method by which the Contractor will share a portion of the cost savings from an accepted VECP shall be for this contract only, and no consideration shall be made for future acquisition, royalty type payment or collateral savings.

5.11.13.1 The Department may accept the proposed VECP in whole or in part. The Engineer shall issue a contract change order to identify and describe the accepted VECP.

**5.12 SUBCONTRACTS** - Nothing contained in the contract documents shall create a contractual relationship between the State and any subcontractor. The contractor may subcontract a portion of the work but the contractor shall remain responsible for the work that is subcontracted.

5.12.1 Replacing Subcontractors - Contractors may enter into subcontracts only with subcontractors listed in the offer form. The contractor will be allowed to replace a listed subcontractor if the subcontractor:

5.12.1.1 Fails, refuses or is unable to enter into a subcontract consistent with the terms and conditions of the subcontractor’s offer presented to the contractor; or

5.12.1.2 Becomes insolvent; or

5.12.1.3 Has any license or certification necessary for performance of the work suspended or revoked; or

5.12.1.4 Has defaulted or has otherwise breached the subcontract in connection with the subcontracted work; or

5.12.1.5 Agrees to be substituted by providing a written release; or

5.12.1.6 Is unable or refuses to comply with other requirements of law applicable to contractors, subcontractors, and public works projects.

5.12.2 Notice of Replacing Subcontractor – The contractor shall provide a written notice to the Contracting Officer when it wishes to replace a subcontractor, including in the notice, the reasons for replacement. The contractor agrees to defend, hold harmless and indemnify the State against all claims, liabilities, or damages whatsoever, including attorneys fees arising out of or related to the replacement of a subcontractor. The contractor may not replace the subcontractor until the Contracting Officer approves of the replacement.

5.12.3 Adding Subcontractors – The Contractor may enter into a subcontract with a subcontractor that is not listed in the offer form only after this contract becomes enforceable and only after the Contracting Officer has approved the subcontractor.

5.12.4 Subcontracting - Contractor shall perform with its own organization, work amounting to not less than twenty (20%) of the total contract cost, exclusive of costs for materials and equipment the Contractor purchases for installation by its subcontractors, except that any items designated by the State in the contract as “specialty items” may be performed by a subcontract and the cost of any such specialty items so performed by the subcontract may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization.

## **ARTICLE 6 - Control of Materials and Equipment**

**6.1 MATERIALS AND EQUIPMENT** - Contractor shall furnish, pay for and install all material and equipment as called for in the drawings and specifications. Materials and equipment shall be new and the most suitable for the purpose intended unless

otherwise specified. The State does not guarantee that the specified or pre-qualified product listed in the drawings and specifications are available at the time of bid or during the contract period.

## **6.2 SOURCE OF SUPPLY AND QUALITY OF MATERIALS**

6.2.1 Only materials conforming to the drawings and specifications and, when required by the contract have been accepted by the Engineer, shall be used. In order to expedite the inspection and testing of materials, at the request of the Engineer, the Contractor shall identify its proposed sources of materials within ten (10) days after notification by the Engineer.

6.2.2 At the option of the Engineer, the materials may be accepted by the Engineer at the source of supply before delivery is started. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer for examination and tested in accordance with the methods referred to under samples and tests.

6.2.3 Engineer's Authorization to Test Materials - Materials proposed to be used may be inspected and tested whenever the Engineer deems necessary to determine conformance to the specified requirements. The cost of testing shall be borne by the Contractor. However, should test results show that the material(s) is in compliance with the specified requirements, the cost of the testing will be borne by the State.

6.2.4 Unacceptable Materials - In the event material(s) are found to be unacceptable, the Contractor shall cease their use, remove the unacceptable material(s) that have already been installed or applied, and furnish acceptable materials all at no additional cost to the State. No material which is in any way unfit for use shall be used.

## **6.3 SUBSTITUTION AFTER CONTRACT AWARD**

6.3.1 Materials, equipment, articles and systems noted on the drawings and specifications, establish a standard of quality, function, performance or design requirements and shall not be interpreted to limit competition. Should trade names, makes, catalog numbers or brand names be specified, the contractor shall infer that these items indicate the quality, style, appearance or performance of the material, equipment, article, or systems to be used in the project. The contractor is responsible to use materials, equipment, articles or systems that meet the project requirements. Unless specifically provided otherwise in the contract documents, the contractor may, at its option, use any

material equipment, article or system that, in the judgment of the Contracting officer, is equal to that required by the contract documents.

6.3.1.1 If after installing a material, equipment, article or system a variance is discovered, the contractor shall immediately replace the material, equipment, article or system with one that meets the requirements of the contract documents.

6.3.2 Substitution After Contract Award - Subject to the Contracting Officer's determination; material, equipment, article or system with a variant feature(s) may be allowed as a substitution, provided it is in the State's best interest. The State may deny a substitution; and if a substitution is denied, the contractor is not entitled to any additional compensation or time extension.

6.3.2.1 The contractor shall include with the submittal, a notification that identifies all deviations or variances from the contract documents. The notice shall be in a written form separate from the submittal. The variances shall be clearly shown on the shop drawing, descriptive sheet, and material sample or color sample; and the contractor shall certify that the substitution has no other variant features. Failures to identify the variances are grounds to reject the related work or materials, notwithstanding that the Contracting Officer accepted the submittal. If the variances are not acceptable to the Contracting Officer, the contractor will be required to furnish the item as specified on the contract documents at no additional cost or time.

6.3.2.2 Acceptance of a variance shall not justify a contract price or time adjustment unless the contractor requests an adjustment at the time of submittal and the adjustments are explicitly agreed to in writing by the Contracting Officer. Any request shall include price details and proposed scheduling modifications. Acceptance of a variance is subject to all contract terms, and is without prejudice to all rights under the surety bond.

6.3.2.3 The contractor can recommend improvements to the project, for materials, equipment, articles, or systems by means of a substitution request, even if the improvements are at an additional cost. The Contracting Officer shall make the final determination to accept or reject contractor's proposed improvements. If the proposal material, equipment, article or system cost less than the specified item, the Department will require a sharing of cost similar to value engineering be implemented. State reserves its right to deny a substitution; and if a substitution is denied, the contractor is not entitled to additional compensation or time extension.

6.3.2.4 If the specified material and / or equipment inadvertently lists only a single manufacturer.

6.3.3 A substitution request after Contract Award shall be fully explained in writing. Contractor shall provide brochures showing that the substitute material and / or equipment is equal or better in essential features and also provide a matrix showing comparison of the essential features. Contractor shall justify its request and include quantities and unit prices involved, respective supplier's price quotations and such other documents necessary to fully support the request. Any savings in cost will be credited to the Department. Contractor shall absorb any additional cost for the substitute item(s) or for its installation. Submitting a substitution request, does not imply that substitutions, for brand name specified materials and equipment, will be allowed. The Engineer may reject and deny any request deemed irregular or not in the best interest of the Department. A request for substitution shall not in any way be grounds for an extension of contract time. At the discretion of the Engineer, a time extension may be granted for an approved substitution.

**6.4 ASBESTOS CONTAINING MATERIALS -** The use of materials or equipment containing asbestos is prohibited under this contract. Contractor warrants that all materials and equipment incorporated in the project are asbestos-free.

#### **6.5 TEST SAMPLES**

6.5.1 The Engineer may require any or all materials to be tested by means of samples or otherwise. Contractor shall collect and forward samples requested by the Engineer. Contractor shall not use or incorporate any material represented by the samples until all required tests have been made and the material has been accepted. In all cases, the Contractor shall furnish the required samples without charge. Where samples are required from the completed work, the Contractor shall cut and furnish samples from the completed work. Samples so removed shall be replaced with identical material and refinished. No additional compensation will be allowed for furnishing test samples and their replacement with new materials.

6.5.2 Tests of the material samples will be made in accordance with the latest standards of the American Society for Testing and Materials (ASTM), as amended prior to the contract date unless otherwise provided. In cases where a particular test method is necessary or specifications and serial numbers are stipulated, the test shall be made by the method stated in the above-mentioned publication. Where the test reference is the American Association of State Highway and

Transportation Officials (AASHTO), it means the specifications and serial numbers of the latest edition and amendments prior to the bid date.

6.5.3 The Engineer may retest any materials which have been tested and accepted at the source of supply after the same has been delivered to the work site. The Engineer shall reject all materials which, when retested, do not meet the requirements of the contract.

#### **6.6 MATERIAL SAMPLES**

6.6.1 The Contractor shall furnish all samples required by the drawings and specifications or that may be requested by the Engineer of any and all materials or equipment it proposes to use. Unless specifically required, samples are not to be submitted with the bid.

6.6.2 No materials or equipment of which samples are required shall be used on the Work until the Engineer has received and accepted the samples. If the Contractor proceeds to use such materials before the Engineer accepts the samples, the Contractor shall bear the risk.

6.6.3 Contractor shall furnish two (2) copies of a transmittal letter with each shipment of samples. The letter shall provide a list of the samples, the name of the building or work for which the materials are intended and the brands of the materials and names of the manufacturers. Also, each sample submitted shall have a label indicating the material represented, its place of origin, the names of the producer, the Contractor and the building or work for which the material is intended. Samples of finished materials shall be marked to indicate where the materials represented are required by the drawings or specifications.

6.6.4 Acceptance of any sample(s) shall be only for the characteristics or for the uses named in such acceptance and for no other purpose. Acceptance of samples shall not change or modify any contract requirement. All samples will be provided by the Contractor at no extra cost to the Department. See also Section 5.4 SHOP DRAWINGS AND OTHER SUBMITTALS.

**6.7 NON-CONFORMING MATERIALS -** All materials not conforming to the requirements of these contract documents, whether in place or not, shall be rejected and removed immediately from the site of work unless otherwise permitted by the Engineer in writing. No rejected material which has subsequently been made to conform shall be used unless and until written acceptance has been given by the Engineer. If the Contractor fails to comply forthwith with any order of the Engineer made under the provisions of this Section 6.7, the Engineer shall have the authority to remove and

replace non-conforming materials and charge the cost of removal and replacement to the Contractor.

**6.8 HANDLING MATERIALS** - Contractor shall handle all materials to preserve their quality and fitness for work. Transport aggregates from the source or storage site to the work in tight vehicles to prevent loss or segregation of materials after loading and measuring.

**6.9 STORAGE OF MATERIALS** - Contractor shall store all materials to preserve their quality and fitness for the work. Unless otherwise provided, any portion of the project site within the Project Contract Limit not required for public travel, may be used for storage purposes and for the Contractor's plant and equipment. Any additional space required shall be provided by the Contractor at its expense subject to the Engineer's acceptance. Contractor shall store materials on wooden platforms or other hard, clean surfaces and covered to protect it from the weather and damage. Stored materials shall be located to allow prompt inspection.

**6.10 PROPERTY RIGHTS IN MATERIALS** - Nothing in the contract shall be construed to vest in the Contractor any right to any materials and equipment after such materials and equipment have been attached, affixed to, or placed in the work.

**6.11 ASSIGNMENT OF ANTITRUST CLAIMS FOR OVERCHARGES FOR GOODS PURCHASED** - Contractor (or Vendor) and the Department recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the Department. Therefore, Contractor hereby assigns to the Department any and all claims for such overcharges as to goods purchased in connection with this order or contract, except as to overcharges which result from antitrust violations commencing after the price is established under this order or contract and any change order. In addition, Contractor warrants and represents that each of its first tier suppliers and subcontractors shall assign any and all such claims to the Department, subject to the aforementioned exception.

**ARTICLE 7 - Prosecution and Progress**  
(Including Legal Relations and Responsibility)

**7.1 PROSECUTION OF THE WORK**

7.1.1 After approval of the contract by the Department of Defense, a Notice to Proceed will be given to the Contractor as described in Section 3.10 NOTICE TO PROCEED. The Notice to Proceed will indicate the date the Contractor is expected to begin the construction and from which date contract time will be charged.

7.1.2 The Contractor shall begin work no later than ten (10) working days from the date in the Notice to Proceed and shall diligently prosecute the same to completion within the contract time allowed. The Contractor shall notify the Engineer at least three (3) working days before beginning work.

7.1.3 If any subsequent suspension and resumption of work occurs, the Contractor shall notify the Engineer at least twenty-four (24) hours before stopping or restarting actual field operations.

7.1.4 Working Prior to Notice to Proceed - The Contractor shall not begin work before the date in the Notice to Proceed. Should the Contractor begin work before receiving the Notice to Proceed, any work performed in advance of the specified date will be considered as having been done at the Contractor's risk and as a volunteer and subject to the following conditions:

7.1.4.1 Under no circumstances shall the Contractor commence work on site until it has notified the Engineer of its intentions and has been advised by the Engineer in writing that the project site is available to the Contractor. The project site will not be made available until the Contractor has complied with commencement requirements under Section 7.2 COMMENCEMENT REQUIREMENTS.

7.1.4.2 In the event the contract is not executed, the Contractor shall, at its own expense, do such work as is necessary to leave the site in a neat condition to the satisfaction of the Engineer. The Contractor shall not be reimbursed for any work performed.

7.1.4.3 All work done prior to the Notice to Proceed shall be performed in accordance with the contract documents, but will only be considered authorized work and be paid for as provided in the contract after the Notice to Proceed is issued.

7.1.5 For repairs and/or renovations of existing buildings, unless otherwise permitted by the Engineer, the Contractor shall not commence with the physical construction unless all or sufficient amount of materials are available for either continuous construction or completion of a specified portion of the work. When construction is started, the Contractor shall work expeditiously and pursue the work diligently until it is complete. If only a portion of the work is to be done in stages, the Contractor shall leave the area safe and usable for the user agency at the end of each stage.

**7.2 COMMENCEMENT REQUIREMENTS** - Prior to beginning work on site, the Contractor shall submit the following to the Engineer:

7.2.1 Identification of the Superintendent or authorized representative on the job site. Refer to Section 5.8 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT.

7.2.2 Proposed Working Hours on the job. Refer to Section 7.5 NORMAL WORKING HOURS.

7.2.3 Permits and Licenses. Refer to Section 7.4 PERMITS AND LICENSES.

7.2.4 Schedule of Prices to be accepted for the agreed Monthly Payment Application. Unless the proposal provides unit price bids on all items in this project, the successful Bidder will be required, after the award of contract, to submit a schedule of prices for the various items of construction included in the contract. For projects involving more than a single building and / or facility, the breakdown cost shall reflect a separate schedule of prices for the various items of work for each building and/or facility. The sum of the prices submitted for the various items must equal the lump sum bid in the Bidder's proposal. This schedule will be subject to acceptance by the Engineer who may reject same and require the bidder to submit another or several other schedules if in the Engineer's opinion the prices are unbalanced or not sufficiently detailed. This schedule of prices shall be used for the purpose of determining the value of monthly payments due the Contractor for work installed complete in place; and may be used as the basis for determining cost and credit of added or deleted items of work, respectively.

7.2.4.1 The Contractor shall estimate at the close of each month the percentage of work completed under each of the various construction items during such month and submit the Monthly Payment Application to the Engineer for review and approval. The Contractor shall be paid the approved percentage of the price established for each item less the retention provided in Section 8.4 PROGRESS PAYMENTS.

7.2.5 Proof of Insurance Coverage. Certificate of Insurance or other documentary evidence satisfactory to the Contracting Officer 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 Section 7.3 INSURANCE REQUIREMENTS.

7.2.6 Until such time as the above items are processed and approved, the Contractor shall not be

allowed to commence on any operations unless authorized by the Engineer.

### **7.3 INSURANCE REQUIREMENTS**

7.3.1 Obligation of Contractor - Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance shall be provided by an insurance company authorized by the 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 Best's Rating of "A-VII" or better.

7.3.2 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 State.

7.3.3 Certificate(s) of Insurance acceptable to the State 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 coverage's being certified will not be cancelled or materially changes without giving the Engineer at least thirty (30) days prior written notice. If the State is to be an Additional Insured on any of the required insurance, it shall be so noted on the certificate. Should any policy be canceled before final acceptance of the work by the State, and the Contractor fails to immediately procure replacement insurance as specified, the State, 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.

7.3.4 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 performance liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the State harmless pursuant to other provisions of this contract. In no instance will the State'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.

7.3.5 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.

7.3.6 The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required 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.

7.3.7 Types of Insurance - 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 any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

7.3.7.1 Worker's Compensation -The Contractor shall obtain worker's compensation insurance for all persons whom they employ in carrying out the work under this contract. 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.

7.3.7.2 General Liability - The Contractor shall obtain General Liability insurance with a limit of not less than \$2,000,000 per occurrence and in the Aggregates. The General liability insurance shall include the State as an Additional Insured. The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies. Refer to SPECIAL CONDITIONS for any additional requirements.

7.3.7.3 Auto 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 occurrence. The required limit of insurance may be provided by a single policy or with a combination of primary and excess policies. Refer to SPECIAL CONDITIONS for any additional requirements.

7.3.7.4 Property Insurance (Builders Risk)

(1) New Building(s) - The Contractor shall obtain Property Insurance covering building(s) being constructed under this Contract. The limit shall be equal to the completed value of the building(s) and shall insure against all-loss excluding earthquakes and floods. The coverage shall be provided by a

company authorized to write insurance in the State of Hawaii as an insurer.

(2) Building Renovation and / or Installation Contract - The Contractor shall obtain Property Insurance with a limit equal to the completed value of the work or property being installed and shall insure against all-loss excluding earthquakes and floods. The coverage shall be provided by a company authorized to write insurance in the State of Hawaii as an insurer. Refer to SPECIAL CONDITIONS for any additional requirements.

(3) The Contractor is not required to obtain property insurance for contracts limited to site development

## 7.4 PERMITS AND LICENSES

7.4.1 The State or its representative may process Federal (e.g. Corps of Engineers), State and County Permit applications. The Contractor shall pick up the pre-processed Permits at the appropriate governmental agency and pay the required fees. Other permits necessary for the proper execution of the work such as utility connection permits, elevator installation permits etc., unless processed by the State and paid for by the Contractor, shall be obtained and paid for by the Contractor.

7.4.2 Until such time as the above permits are approved, the Contractor shall not be allowed to commence any operations without written approval of the Engineer.

7.4.3 The Engineer reserves the right to waive application and processing of the building permit.

7.5 **NORMAL WORKING HOURS** - Prior to beginning operations, unless otherwise established by the State, the Contractor shall notify the Engineer in writing of the time in hours and minutes, A.M. and P.M. respectively, at which it desires to begin and end the day's work. If the Contractor desires to change the working hours, it shall request the Engineer's approval three (3) consecutive working days prior to the date of the change.

## 7.6 HOURS OF LABOR (Section 104-2 Hawaii Revised Statutes)

7.6.1 No laborer or mechanic employed on the job site of any public work of the Department or any political sub-division thereof shall be permitted or required to work on Saturday, Sunday or a legal holiday of the State or in excess of eight hours on any other day unless the laborer or mechanic receives overtime compensation for all hours worked on Saturday, Sunday and a legal holiday of the State or in excess of eight hours on any

other day. For the purposes of determining overtime compensation under this Section 7.6, the basic hourly rate of any laborer or mechanic shall not be less than the basic hourly rate determined by the Department of Labor and Industrial Relations to be the prevailing basic hourly rate for corresponding classes of laborers and mechanics on projects of similar character in the Department.

7.6.2 Overtime compensation means, compensation based on one and one-half times the laborers or mechanics basic hourly rate of pay plus the cost to an employer of furnishing a laborer or mechanic with fringe benefits.

## **7.7 PREVAILING WAGES - (§ 104-2 HRS)**

7.7.1 The Contractor shall at all times observe and comply with all provisions of Chapter 104, HRS, the significant requirements of which are emphasized in the Department of Labor and Industrial Relations Publication No. H104-3 entitled 'Requirements of Chapter 104, HRS Wages and Hours of Employees on Public Works Law'.

7.7.2 Wage Rate Schedule - The wage rate schedule is not physically enclosed in the bid documents. However, the wage rate schedule is incorporated herein by reference and made a part of the Bid and Contract Documents. Said wage rate schedule may be obtained from the Contracts Office, Department of Accounting and General Services, 1151 Punchbowl Street, Room 422, Honolulu, Hawaii or, via the FAX-ON-DEMAND system of the Department of Labor and Industrial Relations, phone number (808) 586-8695. When the bid documents are made available on respective neighbor islands, copies of the wage rate schedule may also be obtained from the office of the respective neighbor island DAGS District Office.

7.7.3 The Contractor or its subcontractor(s) shall pay all laborers and mechanics employed on the job site, unconditionally and not less often than once a week, and without deduction or rebate on any account except as allowed by law, the full amounts of their wages including overtime, accrued to not more than five (5) working days prior to the time of payment, at wage rates not less than those stated in the contract, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractor and such laborers and mechanics. The wages stated in the contract shall not be less than the minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules. Any increase in wage rates, as determined by the Director of Labor and Industrial Relations and issued in the wage rate schedule, shall be applicable during the performance of the contract, in accordance

with section 104-2(a) and (b), Hawaii Revised Statutes. Notwithstanding the provisions of the original contract, if the Director of Labor and Industrial Relations determines that prevailing wages have increased during the performance of the contract, the rate of pay of laborers and mechanics shall be raised accordingly.

7.7.4 Posting Wage Rate Schedule - The rates of wages to be paid shall be posted by the Contractor in a prominent and easily accessible place at the job site and a copy of such wages required to be posted shall be given to each laborer and mechanic employed under the contract by the Contractor at the time the person is employed thereunder, provided that where there is a collective bargaining agreement, the Contractor does not have to provide its employees the wage rate schedules. Any revisions to the schedule of wages issued by the Director of Labor and Industrial Relations during the course of the contract shall also be posted by the Contractor and a copy provided to each laborer and mechanic employed under the contract as required above.

7.7.5 The Engineer may withhold from the Contractor so much of the accrued payments as the Engineer may consider necessary to pay to laborers and mechanics employed by the Contractor or any subcontractor on the job site. The accrued payments withheld shall be the difference between the wages required by this contract and the wages actually received by such laborers or mechanics.

**7.8 FAILURE TO PAY REQUIRED WAGES (§ 104-4, HRS)** - If the Department finds that any laborer or mechanic employed on the job site by the Contractor or any subcontractor has been or is being paid wages at a rate less than the required rate by the contract, or has not received their full overtime compensation, the Department may, by written notice to the Contractor, terminate its right, or the right of any subcontractor, to proceed with the work or with the part of the work on which the required wages or overtime compensation have not been paid and may complete such work or part by contract or otherwise, and the Contractor and its sureties shall be liable to the Department for any excess costs occasioned thereby.

## **7.9 PAYROLLS AND PAYROLL RECORDS (§ 104-3 HRS)**

7.9.1 A certified copy of each weekly payroll shall be submitted to the Engineer within seven (7) calendar days after the end of each weekly payroll period. Failure to do so on a timely basis shall be cause for disqualification from bidding in accordance with the provisions of Section 2.12 DISQUALIFICATION OF BIDDERS. The Contractor shall be responsible for the timely submission of certified copies of payrolls of all



subcontractors. The certification shall affirm that payrolls are correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the wage determination decision, any amendments thereto during the period of the contract, and that the classifications set forth for each laborer and mechanic conform with the work they performed.

7.9.2 Payroll records for all laborers and mechanics working at the site of the work shall be maintained by the General Contractor and its subcontractors, if any, during the course of the work and preserved for a period of four (4) years thereafter. Such records shall contain the name of each employee, their correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. Such records shall be made available for inspection at a place designated by the Engineer, the Director of Labor and any authorized persons who may also interview employees during working hours on the job site.

7.9.3 Note that the falsification of certifications noted in this Section 7.9 may subject the Contractor or subcontractor to penalties and debarment under the laws referenced in Section 7.14 LAWS TO BE OBSERVED and / or criminal prosecution.

#### **7.9A APPRENTICESHIP AGREEMENT CERTIFICATION (HRS §103-55.6)**

7.9A.1 For the duration of a contract awarded and executed utilizing the apprenticeship agreement preference, the Contractor shall certify for each month that work is being conducted on the project, that it continues to be a participant in the relevant registered apprenticeship program for each trade it employs.

7.9A.2 Monthly certification shall be made by completing the *Monthly Report of Contractor's Participation – Form 2* made available by the State Department of Labor and Industrial Relations, the original to be signed by the respective apprenticeship program sponsors authorized official, and submitted by the Contractor to the Engineer with its monthly payment requests. The *Monthly Report of Contractor's Participation – Form 2* is available on the DLIR website at: <http://hawaii.gov/labor/wdd>.

7.9A.3 Should the Contractor fail or refuse to submit its *Monthly Report of Contractor's Participation – Form 2*, or at any time during the duration of the contract, cease to be a party to a registered apprenticeship agreement for any of the apprenticeable trades the Contractor employs, or will employ, the Contractor will be subject to the following sanctions:

7.9A.3.1 Withholding of the requested payment until all of the required *Monthly Report of Contractor's Participation – Form 2s* are properly completed and submitted.

7.9A.3.2 Temporary or permanent cessation of work on the project, without recourse to breach of contract claims by the Contractor; provided the Department shall be entitled to restitution for nonperformance or liquidated damages claims; or

7.9A.3.3 Proceedings to debar or suspend pursuant to HRS §103D-702.

7.9A.4 If events such as “acts of God”, acts of public enemy, acts of the State or any other governmental body in its sovereign or contractual capacity, fires, floods, epidemics, freight embargoes, unusually severe weather, or strikes or other labor disputes prevent the Contractor from submitting the *Monthly Report of Contractor's Participation – Form 2*, the Contractor shall not be penalized as provided herein, provided the Contractor completely and expeditiously complies with the certification process when the event is over.

#### **7.10 OVERTIME AND NIGHT WORK**

7.10.1 Overtime work shall be considered as work performed in excess of eight (8) hours in any one day or work performed on Saturday, Sunday or legal holiday of the State. Overtime and night work are permissible when approved by the Engineer in writing, or as called for elsewhere within these GENERAL CONDITIONS.

7.10.2 Overtime Notification - Contractor shall notify the Engineer in writing at least two (2) working days prior to doing overtime and night work, to insure proper inspection will be available. The notification shall address the specific work to be done. A notification is not required when overtime work and night work are included as normal working hours in the contract and in the contractor's construction schedule.

7.10.3 In the event that work other than that contained in the above notification is performed and for which the Engineer determines State inspection services were necessary but not available because of the lack of notification, the Contractor may be required to remove all such work and perform the work over again in the presence of State inspection personnel.

7.10.4 Any hours worked in excess of the normal eight (8) working hours per day or on Saturdays, Sundays or legal State holidays will not be considered a working day.

7.10.5 The State hereby reserves the right to cancel the overtime, night, Saturday, Sunday or legal State holiday work when it is found that work during these periods is detrimental to the public welfare or the user agency.

#### **7.11 OVERTIME AND NIGHT PAYMENT FOR STATE INSPECTION SERVICE**

7.11.1 The Department is responsible for overtime or night time payments for Department's inspection services, including Department's Inspector, State staff personnel and the Department's Consultant(s) engaged on the project, when overtime and night work are included as normal working hours in the contract and in the contractor's construction schedule.

7.11.2 Whenever the Contractor's operations require the State's inspection and staff personnel to work overtime or at night, the Contractor shall reimburse the State for the cost of such services unless otherwise instructed in the Contract. The Engineer will notify the Contractor of the minimum number of required Department employees and other personnel engaged by the Department prior to the start of any such work. The costs chargeable to the Contractor shall include but not be limited to the following:

7.11.2.1 The cost of salaries which are determined by the State and includes overtime and night time differential for the Department's staff and inspection personnel. In addition to the cost of the salaries, the Contractor shall reimburse the State's share of contributions to the employee's retirement, medical plan, social security, vacation, sick leave, worker's compensation funds, per diem, and other applicable fringe benefits and overhead expenses.

7.11.2.2 The transportation cost incurred by the Department's staff and inspection personnel which are based on established rental rates or mileage allowance in use by the Department for the particular equipment or vehicle.

7.11.2.3 Fees and other costs billed the State by Consultants engaged on the project for overtime and/or night time work.

7.11.3 Payment for Inspection Services - The monies due the Department for staff and inspection work and use of vehicles and equipment as determined in subsection 7.11.2 shall be deducted from the monies due or to become due the Contractor. In any and all events, the Contractor shall not pay the Department's employees directly.

#### **7.12 LIMITATIONS OF OPERATIONS**

7.12.1 Contractor shall at all times conduct the work in such manner and in such sequence as will insure the least practicable interference with pedestrian and motor traffic passageways. The Contractor shall furnish convenient detours and provide and plan all other appropriate signs, flashers, personnel, warnings, barricades and other devices for handling pedestrian and motor traffic.

7.12.2 In the event that other contractors are also employed on the job site, the Contractor shall arrange its work and dispose of materials so as not to interfere with the operations of the other contractors engaged upon adjacent work. The Contractor shall join its work to that of others and existing buildings in a proper manner, and in accordance with the drawings and specifications, and perform its work in the proper sequence in relation to that of others, all as may be directed by the Engineer.

7.12.3 Each Contractor shall be responsible for any damage done by it to work performed by another contractor. Each Contractor shall so conduct its operations and maintain the work in such condition that adequate drainage shall be in effect at all times.

7.12.4 In the event that the Contractor fails to prosecute its work as provided in this Section 7.12 or disregards the directions of the Engineer, the Engineer may suspend the work until such time as the Contractor provides for the prosecution of the work with minimum interference to traffic and passageways or other contractors, adequate drainage, the repair of damage and complies with the direction of the Engineer. No payment will be made for the costs of such suspension.

#### **7.13 ASSIGNMENT OR CHANGE OF NAME §3-125-14 HAR**

7.13.1 Assignment - The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of this contract or any part hereof or any right, title or interest herein or any monies due or to become due hereunder without the prior written consent of the Engineer.

7.13.2 The Contractor may assign money due or to become due it under the contract and such assignment will be recognized by the Department, if given proper notice thereof, to the extent permitted by law; but any assignment of monies shall be subject to all proper set-offs in favor of the State and to all deductions provided in the contract and particularly all monies withheld or unpaid, whether assigned or not, shall be to use by the Department for the completion of the work in the event that the Contractors should be in default therein.

7.13.3 Recognition of a Successor in Interest; Assignment - When in the best interest of the State, a

successor in interest may be recognized in an assignment agreement in which the transferor and the transferee and the State shall agree that:

7.13.3.1 The transferee assumes all of the transferor's obligations;

7.13.3.2 Transferor remains liable for all obligations under the contract but waives all rights under the contract against the State; and

7.13.3.3 The transferor shall continue to furnish, and the transferee shall also furnish, all required bonds.

7.13.4 Change of Name - When a Contractor requests to change the name in which it holds a contract with the State, the Engineer shall, upon receipt of a document indicating such change of name (for example: an amendment to the articles of incorporation of the corporation), enter into an agreement with the requesting Contractor to effect such a change of name. The agreement changing the name shall specifically indicate that no other terms and conditions of the contract are thereby changed.

7.13.5 All change of name or novation agreements effected hereunder other than by the Engineer shall be reported to the Engineer within thirty (30) days of the date that the agreement becomes effective.

7.13.6 Notwithstanding the provisions of paragraphs 7.13.3.1 through 7.13.3.3 above, when a Contractor holds contracts with more than one purchasing agency of the State, the novation or change of name agreements herein authorized shall be processed only through the Department of Defense, State of Hawaii.

#### **7.14 LAWS TO BE OBSERVED**

7.14.1 The Contractor at all times shall observe and comply with all Federal, State and local laws or ordinances, rules and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The Contractor shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules and regulations shall include any amendments thereto before and after the date of this contract.

7.14.2 The Contractor shall defend, protect, hold harmless and indemnify the State and its Departments and Agencies and all their officers, representatives, employees or agents against any claim or liability arising from or based on the violation of any such laws, ordinances, rules and regulations, orders or decrees,

whether such violation is committed by the Contractor or its Subcontractor(s) or any employee of either or both. If any discrepancy or inconsistency is discovered in the contract for the work in relation to any such laws, ordinances, rules and regulations, orders or decrees, the Contractor shall forthwith report the same to the Engineer in writing.

7.14.3 While the Contractor must comply with all applicable laws, attention is directed to: Wage and Hours of Employees on Public Works, Chapter 104, Hawaii Revised Statutes (HRS); Hawaii Public Procurement Code, Authority to debar or suspend, Section 103D-702, HRS; Hawaii Employment Relations Act, Chapter 377, HRS; Hawaii Employment Security Law, Chapter 383, HRS; Worker's Compensation Law, Chapter 386, HRS; Wage and Hour Law, Chapter 387, HRS; Occupational Safety and Health, Chapter 396, HRS; and Authority to Debar or Suspend, Chapter 126, subchapter 2, Hawaii Administrative Rules (HAR).

**7.15 PATENTED DEVICES, MATERIALS AND PROCESSES** - If the Contractor desires to use any design, device, material, or process covered by letters of patent or copyright, the right for such use shall be procured by the Contractor from the patentee or owner. The Contractor shall defend, protect, indemnify and hold harmless the State and its Departments and Agencies, any affected third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright in connection with the work to be performed under the contract, shall defend, protect, indemnify and hold harmless the State and its Departments and Agencies for any costs, expenses and damages which it may be obligated to pay by reason of any such infringement at any time during the prosecution or after the completion of the work. This section shall not apply to any design, device, material or process covered by letters of patent or copyright, which the Contractor is required to use by the drawings or specifications.

#### **7.16 SANITARY, HEALTH AND SAFETY PROVISIONS**

7.16.1 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements of the State and local Boards of Health, or other bodies or tribunals having jurisdiction. Unless otherwise stated in the drawings or specifications, the Contractor shall install toilet facilities conveniently located at the job site and maintain same in a neat and sanitary condition for the use of the employees on the job site for the duration of the contract. The toilet facilities shall conform to the requirements of the State

Department of Health. The cost of installing, maintaining and removing the toilet facilities shall be considered incidental to and paid for under various contract pay items for work or under the lump sum bids as the case may be, and no additional compensation will be made therefore. These requirements shall not modify or abrogate in any way the requirements or regulations of the State Department of Health.

7.16.2 Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to their health or safety.

## **7.17 PROTECTION OF PERSONS AND PROPERTY**

7.17.1 Safety Precautions and Programs - The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

7.17.1.1 All persons on the Work site or who may be affected by the Work;

7.17.1.2 All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor and its subcontractors; and

7.17.1.3 Other property at the site or adjacent thereto, including trees, shrubs lawns walks pavement, roadways structures, and utilities not designated for removal, relocation or replacement in the course of construction.

7.17.2 Contractor shall give notices and comply with applicable laws, ordinances, regulations, rules, and lawful orders of any public body having jurisdiction for the safety of persons or property or their protection from damage, injury or loss; and the Contractor shall erect and maintain reasonable safeguards for safety and protection, including posting danger signs, or other warnings against hazards.

7.17.3 The Contractor shall notify Owners of adjacent properties and of underground (or overhead) utilities when performing work, which may affect the Owners; and shall cooperate with the Owners in the protection, removal and replacement of their property.

7.17.4 All damage, injury or loss to any property referred to in paragraphs 7.17.1.2 and 7.17.1.3 caused by the fault or negligence or damage or loss attributable to acts or omissions directly or indirectly in whole or part by the Contractor a subcontractor or any one directly or indirectly employed by them, or by anyone for whose acts they might be liable, shall be remedied promptly by the Contractor.

7.17.5 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the protection of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor

7.17.6 The Contractor shall not load or permit any part of the construction to be loaded so as to endanger its safety. The Contractor shall not injure or destroy trees or shrubs nor remove or cut them without permission of the Engineer. Contractor shall protect all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.

7.17.7 In the event the Contractor encounters on the site, material reasonably believed to be asbestos or other hazard material that has not been rendered harmless, the Contractor shall stop work in the area and notify the Engineer promptly. The work in the affected area shall be resumed in the absence of hazard materials or when the hazard has been rendered harmless.

7.17.8 Emergencies - In an emergency affecting the safety and protection of persons or the Work or property at the site or adjacent thereto, Contractor without special instructions or authorization from the Engineer, shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Contractor shall give the Engineer prompt written notice of the emergency and actions taken. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined under the provisions of Section 7.25 DISPUTES AND CLAIMS.

## **7.18 ARCHAEOLOGICAL SITES**

7.18.1 Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells be encountered during construction, work shall cease in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor shall immediately notify the Engineer and contact the State Historic Preservation Division which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary.

7.18.2 When required, the Contractor shall provide and install any temporary fencing as shown on the drawings to protect archaeological sites within the project. The fencing shall be installed prior to any construction activity and shall be maintained by the Contractor for the duration of the project. Fence installation and maintenance shall be to the satisfaction of the Engineer. The Contractor shall remove the fencing upon completion of construction, or as directed by the Engineer.

7.18.3 No work shall be done within the temporary fencing area. If any construction work is done within the temporary fencing, the Contractor shall notify the Engineer immediately; and if the Contractor entered the archaeological site area without permission, it shall stop work in this area immediately. The Engineer shall notify the archaeologist to assess any damage to the area. The Contractor shall allow the archaeologist sufficient time to perform the field investigation.

7.18.4 Any site requiring data recovery within the project shall not be disturbed until data recovery is completed.

#### **7.19 RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY**

7.19.1 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.

7.19.2 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 GENERAL CONDITIONS

or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

7.19.3 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.

7.19.4 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 out of or recovered under the Workers' Compensation Laws or violation of any other law, by-law, ordinance, order or decree.

#### **7.20 CHARACTER OF WORKERS OR EQUIPMENT**

7.20.1 The Contractor shall at all times provide adequate supervision and sufficient labor and equipment for prosecuting the work to full completion in the manner and within the time required by the contract.

7.20.2 Character and Proficiency of Workers - All workers shall possess the proper license and / or certification, job classification, skill and experience necessary to properly perform the work assigned to them. All workmen engaged in special work or skilled work such as bituminous courses or mixtures, concrete pavement or structures, electrical installation, plumbing installation, or in any trade shall have sufficient experience in such work and in the operation of the equipment required to properly and satisfactorily perform all work. All workers shall make due and proper effort to execute the work in the manner prescribed in these GENERAL CONDITIONS, otherwise, the Engineer may take action as prescribed herein.

7.20.2.1 Any worker employed on the project by the Contractor or by any subcontractor who, in the opinion of the Engineer, is not careful and competent, does not perform its work in a proper and skillful manner or is disrespectful, intemperate, disorderly or neglects or refuses to comply with directions given, or is otherwise objectionable shall at the written request of the Engineer,

be removed forthwith by the Contractor or subcontractor employing such worker and shall not be employed again in any portion of the work without the written consent of the Engineer. Should the Contractor or subcontractor continue to employ, or again employ such person or persons on the project, the Engineer may withhold all payments which are or may become due, or the Engineer may suspend the work until the Engineer's orders are followed, or both.

7.20.3 Insufficient Workers - A sufficient number of workers shall be present to ensure the work is accomplished at an acceptable rate. In addition, the proper ratio of apprentice to journey worker shall be maintained to ensure the work is properly supervised and performed. In the event that the Engineer finds insufficient workers are present to accomplish the work at an acceptable rate of progress or if a adequate number of journey workers are not present and no corrective action is taken by the Contractor after being informed in writing, the Engineer may terminate the contract as provided for under Section 7.27 TERMINATION OF CONTRACT FOR CAUSE.

7.20.4 Equipment Requirements - All equipment furnished by the Contractor and used on the work shall be of such size and of such mechanical condition that the work can be performed in an acceptable manner at a satisfactory rate of progress and the quality of work produced will be satisfactory.

7.20.4.1 Equipment used on any portion of the project shall be such that no injury to the work, persons at or near the site, adjacent property or other objects will result from its use.

7.20.4.2 If the Contractor fails to provide adequate equipment for the work, the contract may be terminated as provided under Section 7.27 TERMINATION OF CONTRACT FOR CAUSE.

7.20.4.3 In the event that the Contractor furnishes and operates equipment on a force-account basis, it shall be operated to obtain maximum production under the prevailing conditions.

## **7.21 CONTRACT TIME**

7.21.1 Time is of the essence for this contract.

7.21.2 Calculation of Contract Time - When the contract time is on a working day basis, the total contract time allowed for the performance of the work shall be the number of working days shown in the contract plus any additional working days authorized in writing as provided hereinafter. Refer to Article 1 DEFINITIONS for the definition of Working Day. The count of elapsed

working days to be charged against contract time shall begin from the date of Notice to Proceed and shall continue consecutively to the date of Project Acceptance determined by the Engineer. When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be completed. Maintenance periods are not included within the contract time unless specifically noted in the Contract Documents.

### **7.21.3 Modifications of Contract Time §3-125-4 HAR**

7.21.3.1 Extensions - For increases in the scope for work caused by alterations and additional work made under Section 4.2 CHANGES, the Contractor will be granted a time extension only if the changes increase the time of performance for the Contract. If the Contractor believes that an extension of time is justified and is not adequately provided for in a Field Order, it must request the additional time sought in writing when the detailed cost breakdown required by Section 4.2 CHANGES, is submitted. The Contractor must show how the time of performance for the critical path will be affected and must also support the time extension request with schedules and statements from its subcontractors, suppliers, and/or manufacturers. Compensation for any altered or additional work will be paid as provided in Section 4.2 CHANGES.

7.21.3.2 The Department may direct changes to the work at any time until the work is finally accepted. The issuance of a Field Order at any time may alter or modify the contract duration only by the days specified therein; or if not specified therein, for the days the critical path must be extended for the change. Additional time to perform the extra work will be added to the time allowed in the contract without regard to the date the change directive was issued, even if the contract completion date has passed. A change requiring time will not constitute a waiver of pre-existing Contractor delay.

7.21.4 Delay for Permits - For delays beyond the control of the Contractor in obtaining necessary permits, one day extension for each day delay may be granted by the Engineer, provided the Contractor notifies the Engineer that the permits are not available, as soon as the delay occurs. Time extensions shall be the exclusive relief granted on account of such delays. No additional compensation will be paid for these time extensions.

7.21.5 Delays Beyond Contractor's Control §3-125-18(4) - For delays affecting the critical path caused by acts of God, or the public enemy, fire, unusually severe weather, earthquakes, floods, epidemics, quarantine restrictions, labor disputes, freight embargoes and other reasons beyond the Contractor's

control, the Contractor may be granted an extension of time provided that:

7.21.5.1 The Contractor notifies the Engineer in writing within five (5) work days after the occurrence of the circumstances described above and states the possible effects on the completion date of the contract.

7.21.5.2 No time extension will be granted for weather conditions other than unusually severe weather occurrences, and floods.

7.21.5.3 The Contractor, if requested, submits to the Engineer within ten (10) work days after the request, a written statement describing the delay to the project. The extent of delay must be substantiated as follows:

(a) State specifically the reason or reasons for the delay and fully explain in a detailed chronology the effect of this delay to the work and/or the completion date.

(b) Submit copies of purchase order, delivery tag, and any other pertinent documentation to support the time extension request.

(c) Cite the period of delay and the time extension requested.

(d) A statement either that the above circumstances have been cleared and normal working conditions restored as of a certain day or that the above circumstances will continue to prevent completion of the project.

7.21.5.4 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor for such delays.

7.21.6 Delays in Delivery of Materials - For delays in delivery of materials and / or equipment which occur as a result of unforeseeable causes beyond the control and without fault or negligence of both the Contractor, its subcontractor(s) or supplier(s), the Contractor may be granted an extension of time provided that it complies with the following procedures.

7.21.6.1 The Contractor must notify the Engineer in writing within five (5) consecutive working days after it first has any knowledge of delays or anticipated delays and state the effects such delays may have on the completion date of the contract.

7.21.6.2 The Contractor, if requested, must submit to the Engineer within ten (10) working days after a firm delivery date for the material and equipment is established, a written statement as to the delay to the

progress of the project. The delay must be substantiated as follows:

(a) State specifically the reason or reasons for the delay. Explain in a detailed chronology the effect of this delay to the other work and / or the completion date.

(b) Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s) and any other pertinent correspondence to support the time extension request.

(c) Cite the start and end date of the delay and the days requested therefore. The delay shall not exceed the difference between the originally scheduled delivery date versus the actual delivery date.

7.21.6.3 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor on account of such delay.

7.21.7 Delays For Suspension of Work - Delay during periods of suspension of the work by the Engineer shall be computed as follows:

7.21.7.1 When the performance of the work is totally suspended for one or more days (calendar or working days, as appropriate) by order of the Engineer in accordance with paragraphs 7.24.1.1, 7.24.1.2, 7.24.1.4 or 7.24.1.6 the number of days from the effective date of the Engineer's order to suspend operations to the effective date of the Engineer's order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. Should the Contractor claim for additional days in excess of the suspension period, Contractor shall provide evidence justifying the additional time. During periods of partial suspensions of the work, the Contractor will be granted a time extension only if the partial suspension affects the critical path. If the Contractor believes that an extension of time is justified for a partial suspension of work, it must request the extension in writing at least five (5) working days before the partial suspension will affect the critical operation(s) in progress. The Contractor must show how the critical path was increased based on the status of the work and must also support its claim, if requested, with statements from its subcontractors. A suspension of work will not constitute a waiver of pre-existing Contractor delay.

7.21.8 Contractor Caused Delays - No time extension will be considered for the following:

7.21.8.1 Delays in performing the work caused by the Contractor, subcontractor and / or supplier.

7.21.8.2 Delays in arrival of materials and equipment caused by the Contractor, subcontractor and / or supplier in ordering, fabricating, delivery, etc.

7.21.8.3 Delays requested for changes which the Engineer determines unjustifiable due to the lack of supporting evidence or because the change is not on the critical path.

7.21.8.4 Delays caused by the failure of the Contractor to submit for review and acceptance by the Engineer, on a timely basis, shop drawings, descriptive sheets, material samples, color samples, etc. except as covered in subsection 7.21.5 and 7.21.6.

7.21.8.5 Failure to follow the procedure within the time allowed to qualify for a time extension.

7.21.8.6 Days the Contractor is unable to work due to normal rainfall or other normal bad weather day conditions.

7.21.9 Reduction in Time - If the Department deletes any portion of the work, an appropriate reduction of contract time may be made in accordance with Section 4.2 CHANGES.

## **7.22 CONSTRUCTION SCHEDULE**

7.22.1 The Contractor shall submit its detailed construction schedule to the Engineer prior to the start of the work. The purpose of the schedule is to allow the Engineer to monitor the Contractor's progress on the work. The schedule shall account for normal inclement weather, unusual soil or other conditions that may influence the progress of the work, schedules and coordination required by any utility, off or on site fabrications, and all other pertinent factors that relate to progress.

7.22.2 Submittal of and the Engineer's receipt of the construction schedule shall not imply the Department's approval of the schedule's breakdown, its individual elements, and any critical path that may be shown. Any acceptance or approval of the schedule 1) shall be for general format only and not for sequences or durations thereon, and 2) shall not be deemed an agreement by the Department that the construction means, methods and resources shown on the schedule will result in work that conforms to the contract requirements. The Contractor has the risk of all elements (whether or not shown) of the schedule and its execution. Additional compensation shall not be due the Contractor in the event that deviations from the Contractor's schedule, caused by any design revisions required to resolve site conditions or State, County, or utility requirements, affect the efficiency of its operations.

7.22.3 In the event the Contractor submits and the Department receives an accelerated schedule (shorter than the contract time), such will not constitute an agreement to modify the contract time or completion date, nor will the receipt, acceptance or approval of such a schedule incur any obligation by the Department.

7.22.4 Caution - The Department will not be responsible if the Contractor does not meet its accelerated schedule.

7.22.5 The requirements of this Section 7.22 CONSTRUCTION SCHEDULE may be waived by the Engineer.

**7.23 STATEMENT OF WORKING DAYS** - For all contracts on a working day basis, the Contractor will submit a statement of the number of working days for each month together with the Monthly Payment Application. The Monthly Payment Application will not be processed without the statement of working days.

## **7.24 SUSPENSION OF WORK §3-125-7 HAR**

7.24.1 Procedure to be followed - The Engineer may, by written order, suspend the performance of the Work up to thirty (30) days and the Engineer, for an unlimited number of days, either in whole or in part for any cause, including but not limited to:

7.24.1.1 Weather or excess bad weather days, considered unsuitable by the Engineer for prosecution of the work; or

7.24.1.2 Soil Conditions considered unsuitable by the Engineer for prosecution of the work; or

7.24.1.3 Failure of the Contractor to:

(1) Correct conditions unsafe for the general public or for the workers;

(2) Carry out orders given by the Engineer;

(3) Perform the work in strict compliance with the provisions of the contract; or

(4) Provide a qualified Superintendent on the jobsite as described under Section 5.8 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT.

7.24.1.4 When any redesign is deemed necessary by the Engineer; or

7.24.1.5 Disturbance due to noise, odors or dust arising from the construction even if such disturbance does not



violate the section on Environmental Protection contained in the specifications; or

7.24.1.6 The convenience of the State.

7.24.2 Partial, Total Suspension of Work - Suspension of work on some but not all items of work shall be considered a partial suspension. Suspension of work on the entire work at the job site shall be considered total suspension. The period of suspension shall be computed as set forth in subsection 7.21.7 -Delays for Suspension of Work.

7.24.3 Payment §3-125-7 HAR

7.24.3.1 In the event that the Contractor is ordered by the Engineer in writing as provided herein to suspend all work under the contract in accordance with paragraphs 7.24.1.4 or 7.24.1.6, the Contractor may be reimbursed for actual direct costs incurred on work at the jobsite, as authorized in writing by the Engineer, including costs expended for the protection of the work. Payment for equipment which must standby during such suspension of work shall be made as described in clause 8.3.4.5. (e). No payment will be made for profit on any suspension costs. An allowance of five percent (5%) will be paid on any reimbursed actual costs for indirect categories of delay costs, including extended branch and home-office overhead and delay impact costs.

7.24.3.2 However, no adjustment to the contract amount or time shall be made under this Section 7.24 for any suspension, delay, or interruption:

- (a) To the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor; or
- (b) For which an adjustment is provided for or excluded under any other provision of this Contract.

7.24.3.3 Any adjustment in contract price made pursuant to this subsection shall be determined in accordance with this Section 7.24 and Section 4.2 CHANGES.

7.24.3.4 Claims for such compensation shall be filed with the Engineer within ten (10) calendar days after the date of the order to resume work or such claims will be waived by the Contractor. Together with the claim, the Contractor shall submit substantiating documents supporting the entire amount shown on the claim. The Engineer may make such investigations as are deemed necessary and shall be the sole judge of the claim and the Engineer's decision shall be final.

7.24.4 Claims Not Allowed - No claim under this Section 7.24 shall be allowed:

7.24.4.1 For any direct costs incurred more than twenty (20) days before the Contractor shall have notified the Engineer in writing of any suspension that the Contractor considered compensable. This requirement shall not apply as to a claim resulting from a suspension order under paragraphs 7.24.1.4 or 7.24.1.6, and

7.24.4.2 Unless the claim is asserted in writing within ten (10) calendar days after the termination of such suspension, delay, or interruption, but in no case not later than the date of final payment under the contract.

7.24.4.3 No provision of this Section 7.24 shall be construed as entitling the Contractor to compensation for delays due to failure of surety, for suspensions made at the request of the Contractor, for any delay required under the Contract, for partial suspension of work or for suspensions made by the Engineer under the provisions of paragraphs 7.24.1.1, 7.24.1.2, 7.24.1.3 and 7.24.1.5.

## 7.25 DISPUTES AND CLAIMS §3-126-31 HAR

7.25.1 Required Notification - As a condition precedent for any claim, the Contractor must give notice in writing to the Engineer in the manner and within the time periods stated in Section 4.2 CHANGES for claims for extra compensation, damages, or an extension of time due for one or more of the following reasons:

7.25.1.1 Requirements not clearly covered in the contract, or not ordered by the Engineer as an extra;

7.25.1.2 Failure by the State and Contractor to agree to an Oral Order or an adjustment in price or contract time for a Field Order or a Change Order issued by the State;

7.25.1.3 An action or omission by the Engineer requiring performance changes beyond the scope of the contract;

7.25.1.4 Failure of the State to issue a Field Order for controversies within the scope of Section 4.2 CHANGES.

7.25.1.5 For any other type of claim, the Contractor shall give notice within the time periods set forth in contract provisions pertaining to that event. If no specific contract provisions pertain to the claim, then the written notice of claim must be submitted within fifteen (15) days of the event giving rise to the claim.

7.25.2 Continued Performance of Work - The Contractor shall at all times continue with performance of the contract in full compliance with the directions of the Engineer. Continued performance by the Contractor shall not be deemed a waiver of any claim for additional compensation, damages, or an extension of time for

completion, provided that the written notice of claim is submitted in accordance with subsection 7.25.1

7.25.3 The requirement for timely written notice shall be a condition precedent to the assertion of a claim.

7.25.4 Requirements for Notice of Claim -The notice of claim shall clearly state the Contractor's intention to make claim and the reasons why the Contractor believes that additional compensation, changes or an extension of time may be remedies to which it is entitled. At a minimum, it shall provide the following:

7.25.4.1 Date of the protested order, decision or action;

7.25.4.2 The nature and circumstances which caused the claim;

7.25.4.3 The contract provision that support the claim;

7.25.4.4 The estimated dollar cost, if any, of the protested work and how that estimate was determined; and

7.25.4.5 An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.

7.25.5 If the protest or claim is continuing, the information required in subsection 7.25.4 above shall be supplemented as requested by the Engineer.

7.25.6 Final Statement for Claim - The Contractor shall provide a final written statement of the actual adjustment in contract price and/or contract time requested for each notice of claim. Such statement shall clearly set forth that it is the final statement for that notice of claim. All such final statements shall be submitted within thirty (30) days after completion of the work that is the subject of the claim, but in no event no later than thirty (30) days after the Project Acceptance Date or the date of termination of the Contractor, whichever comes first.

7.25.7 All claims of any nature are barred if asserted after final payment under this contract has been made, except as provided under Section 8.9 CLAIMS ARISING OUT OF PAYMENT FOR REQUIRED WORK.

7.25.8 Contractor may protest the assessment or determination by the Engineer of amounts due the State from the Contractor by providing a written notice to the Engineer within thirty (30) days of the date of the Engineer's written assessment or determination. Said notice shall comply with all requirements of subsections 7.25.4 and 7.25.6 above. The requirement of such notice

cannot be waived and it is a condition precedent to any claim by the Contractor. Failure to comply with these notice provisions constitutes a waiver of any claim.

7.25.9 In addition to the requirements of subsections 7.25.4, 7.25.6, and 7.25.8, all final written statements of claim shall be certified. This certification requirement applies to the Contractor without exception, including, but not limited to, situations involving "pass through" claims of subcontractors or suppliers. The certification must be executed by a person duly authorized to bind the Contractor with respect to the claim. The certification shall state as follows:

7.25.9.1 "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the State is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

7.25.10 Decision on Claim / Appeal - The Contracting Officer shall decide all controversies between the State and the contractor which arise under, or are by virtue of, this contract and which are not resolved by mutual agreement. The decision of the Contracting Officer on the claim shall be final and conclusive, unless fraudulent or unless the contractor delivers to the Adjutant General a written appeal of the Contracting Officer's decision no later than 30 days after the date of the Contracting Officers decision. The Adjutant General's decision shall be final and conclusive, unless fraudulent or unless the contractor brings an action seeking judicial review of the Adjutant General's decision in an appropriate circuit court of this State within six months from the date of the Adjutant General's decision.

7.25.10.1 If the contractor delivers a written request for a final decision concerning the controversy, the Adjutant General shall issue a final decision within 90 days after receipt of such a request; provided that if the Adjutant General does not issue a written decision within 90 days or within such longer period as may be agreed upon by the parties, then the contractor may proceed as if an adverse decision had been received. Both parties to this contract agree that the period of up to 30 days to appeal the Contracting Officer's decision to the Adjutant General shall not be included in the 90 day period to issue a final decision.

7.25.11 Payment and Interest - The amount determined payable pursuant to the decision, less any portion already paid, normally should be paid without awaiting Contractor action concerning appeal. Such payments shall be without prejudice to the rights of either party. Interest on amounts ultimately determined to be due to a

Contractor shall be payable at the Statutory rate applicable to judgments against the State under Chapter 662, HRS from the date of receipt of a properly certified final written statement of actual adjustment required until the date of decision; except, however, that if an action is initiated in circuit court, interest under this Section 7.25 shall only be calculated until the time such action is initiated. Interest on amounts due the State from the Contractor shall be payable at the same rate from the date of issuance of the Engineer's notice to the Contractor. Where such payments are required to be returned by a subsequent decision, interest on such payments shall be paid at the statutory rate from the date of payment.

7.25.12 Contractor shall comply with any decision of the Engineer and proceed diligently with performance of this contract pending final resolution by a circuit court of this State of any controversy arising under, or by virtue of, this contract, except where there has been a material breach of contract by the State; provided that in any event the Contractor shall proceed diligently with the performance of the contract where the Engineer has made a written determination that continuation of work under the contract is essential to the public health and safety.

## **7.26 FAILURE TO COMPLETE THE WORK ON TIME**

7.26.1 Completion of the work within the required time is important because delay in the prosecution of the work will inconvenience the public and interfere with the State's business. In addition, the State will be damaged by the inability to obtain full use of the completed work and by increased engineering, inspection, superintendence, and administrative services in connection with the work. Furthermore, delay may detrimentally impact the financing, planning, or completion of other State projects because of the need to devote State resources to the project after the required completion date. The monetary amount of such public inconvenience, interference with State business, and damages, is difficult, if not impossible, to accurately determine and precisely prove. Therefore, it is hereby agreed that the amount of such damages shall be the appropriate sum of liquidated damages as set forth below.

7.26.1.1 When the Contractor fails to complete the Work or any portion of the Work within the time or times fixed in the contract or any extension thereof, it is agreed the Contractor shall pay liquidated damages to the Department based upon the amount stated in the Offer form.

7.26.1.2 If the Contractor fails to correct Punch list deficiencies as required by Section 7.32 PROJECT ACCEPTANCE DATE, the State will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department based upon the amount stated in the Offer Form. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof until the date the Punchlist items are corrected and accepted by the Engineer.

7.26.1.3 If the Contractor fails to submit final documents as required by Section 7.33 FINAL SETTLEMENT OF THE CONTRACT, the State will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department based upon the amount stated in the Offer Form. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the final documents are received by the Engineer.

7.26.1.4 The Engineer shall assess the total amount of liquidated damages in accordance with the amount stated in the Offer Form and provide written notice of such assessment to the Contractor.

7.26.2 Acceptance of Liquidated Damages -The assessment of liquidated damages by the Engineer shall be accepted by the parties hereto as final, unless the Contractor delivers a written appeal of the Engineer's decision in accordance with subsection 7.25.10 requirements. Any allowance of time or remission of charges or liquidated damages shall in no other manner affect the rights or obligations of the parties under this contract nor be construed to prevent action under Section 7.27 TERMINATION OF CONTRACT FOR CAUSE. If the Department terminates the Contractor's right to proceed, the resulting damage will include such liquidated damages for such time as may be required for final completion of the work after the required contract completion date.

7.26.3 Payments for Liquidated Damages -Liquidated damages shall be deducted from monies due or that may become due to the Contractor under the contract or from other monies that may be due or become due to the Contractor from the State.

## **7.27 TERMINATION OF CONTRACT FOR CAUSE §3-125-18 HAR**

7.27.1 Default - If the Contractor refuses or fails to perform the work, or any separable part thereof, with such diligence as will assure its completion within the time specified in this contract, or any extension thereof, fails to complete the work within such time, or commits

any other material breach of this contract, and further fails within seven (7) days after receipt of written notice from the Engineer to commence and continue correction of the refusal or failure with diligence and promptness, the Engineer may, by written notice to the Contractor, declare the Contractor in breach and terminate the Contractor's right to proceed with the work or the part of the work as to which there has been delay or other breach of contract. In such event, the Department may take over the work and perform the same to completion, by contract or otherwise, and may take possession of, and utilize in completing the work, the materials, appliances, and plant as may be on the site of the work and necessary therefore. Whether or not the Contractor's right to proceed with the work is terminated, the Contractor and the Contractor's sureties shall be liable for any damage to the Department resulting from the Contractor's refusal or failure to complete the work within the specified time.

7.27.2 Additional Rights and Remedies - The rights and remedies of the Department provided in this contract are in addition to any other rights and remedies provided by law.

#### 7.27.3 Costs and Charges

7.27.3.1 All costs and charges incurred by the Department, together with the cost of completing the work under contract, will be deducted from any monies due or which would or might have become due to the Contractor had it been allowed to complete the work under the contract. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay the Department the amount of the excess.

7.27.3.2 In case of termination, the Engineer shall limit any payment to the Contractor to the part of the contract satisfactorily completed at the time of termination. Payment will not be made until the work has satisfactorily been completed and the tax clearance required by Section 8.8 FINAL PAYMENT is submitted by the Contractor. Termination shall not relieve the Contractor or Surety from liability for performance liquidated damages.

7.27.4 Erroneous Termination for Cause - If, after notice of termination of the Contractor's right to proceed under this Section 7.27, it is determined for any reason that good cause did not exist to allow the Department to terminate as provided herein, the rights and obligations of the parties shall be the same as, and the relief afforded the Contractor shall be limited to, the provisions contained in Section 7.28 TERMINATION FOR CONVENIENCE.

## 7.28 TERMINATION FOR CONVENIENCE

### §3-125-22 HAR

7.28.1 Termination - The Engineer may, when the interests of the State so require, terminate this contract in whole or in part, for the convenience of the State. The Engineer shall give written notice of the termination to the Contractor specifying the part of the contract terminated and when termination becomes effective.

7.28.2 Contractor's Obligations - The Contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the Contractor will stop work to the extent specified. The Contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work subject to the State's approval. The Engineer may direct the Contractor to assign the Contractor's right, title, and interest under terminated orders or subcontracts to the State. The Contractor must still complete the work not terminated by the notice of termination.

7.28.3 Right to Construction and Goods - The Engineer may require the Contractor to transfer title and delivery to the State in the manner and to the extent directed by the Engineer, the following:

7.28.3.1 Any completed work; and

7.28.3.2 Any partially completed construction, goods, materials, parts, tools, dies, jigs, fixtures, drawings, information, and contract rights (hereinafter called "construction material") that the Contractor has specifically produced or specially acquired for the performance of the terminated part of this contract.

7.28.3.3 The Contractor shall protect and preserve all property in the possession of the Contractor in which the State has an interest. If the Engineer does not elect to retain any such property, the Contractor shall use its best efforts to sell such property and construction material for the Department's account in accordance with the standards of section 490:2-706, HRS.

7.28.4 Compensation

7.28.4.1 Contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data, submitted to the extent required by subchapter 15, chapter 3-122, HAR. If the Contractor fails to file a termination claim within one year from the effective date of termination, the Engineer may pay the Contractor, if at all, an amount set in accordance with paragraph 7.28.4.3.

7.28.4.2 The Engineer and the Contractor may agree to a settlement provided the Contractor has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the State, the proceeds of any sales of construction, supplies, and construction materials under paragraph 7.28.3.3 of this Section, and the contract price of the work not terminated.

7.28.4.3 Absent complete agreement, the Engineer shall pay the Contractor the following amounts, less any payments previously made under the contract.

(a) The cost of all contract work performed prior to the effective date of the notice of termination work plus a five percent (5%) markup on the actual direct costs, including amounts paid to subcontractor, less amounts previously paid or to be paid for completed portions of such work; provided, however, that if it appears that the Contractor would have sustained a loss if the entire contract would have been completed, no markup shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss. No anticipated profit or consequential damage will be due or paid.

(b) Subcontractors shall be paid a markup of ten percent (10%) on their direct job costs incurred to the date of termination. No anticipated profit or consequential damage will be due or paid to any subcontractor. These costs must not include payments made to the Contractor for subcontract work during the contract period.

(c) In any case, the total sum to be paid the Contractor shall not exceed the total contract price reduced by the amount of any sales of construction supplies, and construction materials.

7.28.4.4 Costs claimed, agreed to, or established by the State shall be in accordance with chapter 3-123, HAR.

**7.29 CORRECTING DEFECTS** - If the Contractor fails to commence to correct any defects of any nature, within ten (10) working days after the correction thereof has been requested in writing by the State, and thereafter to expeditiously complete the correction of said defects, the Engineer may without further notice to the Contractor or surety and without termination of contract, correct the defects and deduct the cost thereof from the contract price.

**7.30 FINAL CLEANING** - Before final inspection of the work, the Contractor shall clean all ground occupied by the Contractor in connection with the Work of all rubbish, excess materials, temporary structures and

equipment, and all parts of the work must be left in a neat and presentable condition to the satisfaction of the Engineer. However, the Contractor shall not remove any warning and directional signs prior to the formal acceptance by the Engineer. Full compensation for final cleaning will be included in the prices paid for the various items of work or lump sum bid, as the case may be, and no separate payment will be made therefore.

**7.31 SUBSTANTIAL COMPLETION, AND FINAL INSPECTION** - Before the Department accepts the project as being completed, unless otherwise stipulated by the Engineer, the following procedure shall be followed:

7.31.1 Substantial Completion:

7.31.1.1 The Contractor and its subcontractors shall inspect the project to confirm whether the Project is Substantially Complete. This inspection effort shall include the testing of all equipment and providing a Punch list that identifies deficiencies which must be corrected. Contractor shall make the corrections and if required repeat the procedure. Also, the Contractor shall schedule final Building, Plumbing, Electrical, Elevator, Fire and other required inspections and obtain final approvals.

(a) When in compliance with the above requirements, the Contractor shall notify the Engineer in writing that project is Substantially Complete and ready for a Final Inspection. Along with the Substantial Completion notification, the Contractor shall provide its Punch list(s) with the status of the deficiencies and dates when the deficiencies were corrected. The Project Inspector and / or the Engineer shall make a preliminary determination whether project is Substantially Complete.

(b) If the Project is not Substantially Complete, the Engineer shall inform the Contractor. The Contractor shall identify deficiencies which must be corrected, update its Punch list, make the necessary corrections and repeat the previous step. After completing the necessary work, the Contractor shall notify the Engineer in writing that Punch list deficiencies have been corrected and the project is ready for a Final Inspection.

(c) If the Project is Substantially Complete, the Engineer shall schedule a Final Inspection within fifteen (15) days of the Contractor's notification letter or as otherwise determined by the Engineer.

7.31.1.2 In addition, and to facilitate closing of the project, the Contractor shall also proceed to obtain the following closing documents (where applicable) prior to the Final Inspection:

- (1) Field-Posted As-Built Drawings.
- (2) Maintenance Service Contract and two (2) copies of a list of all equipment.
- (3) Operating and maintenance manuals.
- (4) Air conditioning test and balance reports.
- (5) Any other final submittal required by the technical sections of the contract.

7.31.2 Final Inspection: If at the Final Inspection the Engineer determines that all work is completed, the Engineer shall notify the Contractor in accordance with Section 7.32 PROJECT ACCEPTANCE DATE. Should there be remaining deficiencies which must be corrected, the Contractor shall provide an updated Punch list to the Engineer, within five (5) days from the Final Inspection Date. The Contractor shall make the necessary corrections.

7.31.2.1 The Engineer shall confirm the list of deficiencies noted by the Contractor's punch list(s) and will notify the Contractor of any other deficiencies that must be corrected before final settlement.

7.31.3 The Engineer may add to or otherwise modify the Punch list from time to time. The Contractor shall take immediate action to correct the deficiencies.

7.31.4 Revoking Substantial Completion - At any time before final Project Acceptance is issued, the Engineer may revoke the determination of Substantial Completion if the Engineer finds it was not warranted. The Engineer shall notify the Contractor in writing with the reasons and outstanding deficiencies negating the declaration. Once notified, the Contractor shall make the necessary corrections and repeat the required steps noted in subsections 7.31.1 and 7.31.2.

## 7.32 PROJECT ACCEPTANCE DATE

7.32.1 If upon Final Inspection, the Engineer finds that the project has been satisfactorily completed in compliance with the contract, the Engineer shall declare the project completed and accepted and will notify the Contractor in writing of the acceptance by way of the Project Acceptance Notice.

7.32.2 Protection and Maintenance - After the Project Acceptance Date, the Contractor shall be relieved of maintaining and protecting the work EXCEPT that this does not hold true for those portions of the work which have not been accepted, including Punch list

deficiencies. The State shall be responsible for the protection and maintenance of the accepted facility.

7.32.3 The date of Project Acceptance shall determine:

7.32.3.1 End of Contract Time.

7.32.3.2 Commencement of all guaranty periods except as noted in Section 7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS.

7.32.3.3 Commencement of all maintenance services except as noted in Section 7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS.

7.32.4 Punch list Requirements - If a Punch list is required under Section 7.31 SUBSTANTIAL COMPLETION AND FINAL INSPECTION, the Project Acceptance Notice will include the Engineer's Punch list and the date when correction of the deficiencies must be completed.

7.32.4.1 Punch list corrective work shall be completed prior to Contract Completion Date, or extension thereof.

7.32.5 Upon receiving the Punch list, the Contractor shall promptly devote the required time, labor, equipment, materials and incidentals necessary to correct the deficiencies expeditiously.

7.32.6 For those items of work that cannot be completed by the established date, the Contractor shall submit a schedule in writing to the Engineer for approval along with documentation to justify the time required, no later than five (5) working days before the date stipulated for completion of the Punch list work. A Proposed schedule submitted after the five (5) day period will not be considered.

7.32.7 Failure to Correct Deficiencies - If the Contractor fails to correct the deficiencies within the time established in paragraph 7.32.4.1, the Contracting Officer shall assess liquidated damages as required by Section 7.26 - FAILURE TO COMPLETE THE WORK ON TIME.

7.32.8 If the Contractor fails to correct the deficiencies and complete the work by the established or agreed to date, the State also reserves the right to correct the deficiencies by whatever method it deems necessary and deduct the cost from the final payment due the contractor.

7.32.9 The Contractor may further be prohibited from bidding in accordance with Section 2.12 - DISQUALIFICATION OF BIDDERS. In addition, assessment of damages shall not prevent action under

Section 7.27 - TERMINATION OF CONTRACT FOR CAUSE.

**7.33 FINAL SETTLEMENT OF CONTRACT -**

The contract will be considered settled after the project acceptance date and when the following items have been satisfactorily submitted, where applicable:

7.33.1 Necessary Submissions in addition to the items noted under paragraph 7.31.1.2.

7.33.1.1 All written guarantees required by the contract.

7.33.1.2 Complete and certified weekly payrolls for the Contractor and its Subcontractor(s).

7.33.1.3 Certificate of Plumbing and Electrical Inspection.

7.33.1.4 Certificate of Building Occupancy.

7.33.1.5 Certificates for Soil Treatment and Wood Treatment.

7.33.1.6 Certificate of Water System Chlorination.

7.33.1.7 Certificate of Elevator Inspection, Boiler and Pressure Pipe installation.

7.33.1.8 All other documents required by the Contract.

7.33.2 Failure to Submit Closing Documents - The Contractor shall submit the final Payment Application and the above applicable closing documents within sixty (60)

days from the date of Project Acceptance or the agreed to Punch list completion date. Should the Contractor fail to comply with these requirements, the Engineer may terminate the Contract for cause. The pertinent provisions of Section 7.27 TERMINATION OF CONTRACT FOR CAUSE shall be applicable.

7.33.3 In addition, should the Contractor fail to furnish final closing documents within the required time period, the Engineer shall assess performance liquidated damages as required by Section 7.26 FAILURE TO COMPLETE THE WORK ON TIME.

**7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK; RISK OF LOSS**

7.34.1 Until the establishment of the Project Acceptance Date or Beneficial Occupancy whichever is sooner, the Contractor shall take every necessary precaution against injury or damage to any part of the work caused by the perils insured by an All Risk policy excluding earthquakes and floods, whether arising from

the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work occasioned by the perils insured by an All Risk policy before the date of final acceptance and shall bear the risk and expense thereof.

7.34.2 After the Project Acceptance Date or Beneficial Occupancy whichever is sooner, the Contractor shall be relieved of maintaining and protecting the work except for those portions of the work which have not been accepted including Punch list deficiencies.

7.34.3 The risk of damage to the work from any hazard or occurrence that may be covered by a required Property Insurance policy is that of the Contractor, unless such risk of loss is placed elsewhere by express language in the contract documents. No claims for any loss or damage shall be recognized by the Department, nor will any such loss or damage excuse the complete and satisfactory performance of the contract by the Contractor.

**7.35 GUARANTEE OF WORK**

7.35.1 In addition to any required manufacturers warranties, all work and equipment shall be guaranteed by the Contractor against defects in materials, equipment or workmanship for one year from the Project Acceptance Date or as otherwise specified in the Contract Documents, whichever is earlier.

7.35.2 Repair of Work - If, within any guarantee period, repairs or changes are required in connection with the guaranteed work, which in the opinion of the Engineer is necessary due to materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract, the Contractor shall within five (5) working days and without expense to the Department commence to:

7.35.2.1 Place in satisfactory condition in every instance all such guaranteed work and correct all defects therein; and

7.35.2.2 Make good and repair or replace to new or pre-existing condition all damages to the building, facility, work or equipment or contents thereof, resulting from such defective materials, equipment or installation thereof.

7.35.3 Manufacturer's and Installer's Guarantee-Whenever a manufacturer's or installer's guarantee on any product specified in the respective Specification sections, exceeds one year, this guarantee shall become part of this contract in addition to the Contractor's guarantee. Contractor shall complete the guarantee forms in the name of the Department and submit such

forms to the manufacturer within such time required to validate the guarantee. Contractor shall submit to the Department a photocopy of the completed guarantee form for the Department's record as evidence that such guarantee form was executed by the manufacturer.

7.35.4 If a defect is discovered during a guarantee period, all repairs and corrections to the defective items when corrected shall again be guaranteed for the original full guarantee period. The guarantee period shall be tolled and suspended for all work affected by the defect. The guarantee period for work affected by the defect shall restart for its remaining duration upon confirmation by the Engineer that the deficiencies have been repaired or remedied.

7.35.5 If guarantee is specified for greater than two (2) years, two (2) years shall prevail except for manufacturer's warranties. Manufacturer's warranties shall remain as specified in their respective Specification sections.

7.35.5.1 However, the number of years specified in the technical specifications shall prevail only if it is stated that the number of years for guarantee supersedes this provision.

### **7.36 WORK OF AND CHARGES BY UTILITIES**

7.36.1 The Contractor shall be responsible for scheduling and coordinating the work with the utility companies and applicable Governmental agencies for permanent service installation and connections or modifications to existing utilities. The Contractor shall make available all portions of the work necessary for the Utility companies to do their work. The Department shall not bear the risk of any damage to the contract work caused by any utility company, and work of repairing such damage and delay costs must be resolved between the Contractor and the utility company and their insurers.

7.36.2 Unless stated as an allowance item to be paid by the Contractor, the Department will pay the utility companies and applicable governmental agencies directly for necessary modifications and connections. Contractor charges for overhead, supervision, coordination, profit, insurance and any other incidental expenses shall be included in the Contractor's Bid whether the utility is paid directly by the Department or by an allowance item in the Contract.

### **7.37 RIGHT TO AUDIT RECORDS**

7.37.1 Pursuant to Section 103D-317 HRS the State, at reasonable times and places, may audit the books and records of a Contractor, prospective contractor,

subcontractor and prospective subcontractor relating to the Contractor's or subcontractor's cost or pricing data. The books and records shall be maintained by the Contractor and subcontractor(s) for a period of four (4) years from the date of final payment under the contract.

7.37.2 The Contractor shall insure that its subcontractors comply with this requirement and shall bear all costs (including attorney's fees) of enforcement in the event of its subcontractor's failure or refusal to fully cooperate.

7.37.3 Additionally, Sections 231-7, 235-108, 237-39 and other HRS chapters through reference, authorizes the Department of Taxation to audit all taxpayers conducting business within the State. Contractors must make available to the Department of Taxation all books and records necessary to verify compliance with the tax laws.

### **7.38 RECORDS MAINTENANCE, RETENTION AND ACCESS**

7.38.1 The Contractor and any subcontractor whose contract for services is valued at \$25,000 or more shall, in accordance with generally acceptable accounting practices, maintain fiscal records and supporting documents and related files, papers, and reports that adequately reflect all direct and indirect expenditures and management and fiscal practices related to the Contractor and subcontractor's performance of services under this Agreement.

7.38.2 The representative of the Department, the Adjutant General of the State of Hawaii, the Attorney General, (the Federal granting agency, the Comptroller General of the United States, and any of their authorized representatives when federal funds are utilized), and the Legislative Auditor of the State of Hawaii shall have the right of access to any book, document, paper, file, or other record of the Contractor and any subcontractor that is related to the performance of services under this Agreement in order to conduct an audit or other examination and / or to make copies, excerpts and transcripts for the purposes of monitoring and evaluating the Contractor and subcontractor's performance of services and the Contractor and subcontractor's program, management, and fiscal practices to assure the proper and effective expenditure of funds and to verify all costs associated with any claims made under this Agreement.

7.38.3 The right of access shall not be limited to the required retention period but shall last as long as the records are retained. The Contractor and subcontractor shall retain all records related to the Contractor and subcontractor's performance of services under this Agreement for four (4) years from the date of final



payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the records has been started before the expiration of the four (4) year period, the Contractor and subcontractors shall retain the records until completion of the action and resolution of all issues that arise from it, or until the end of the four (4) year retention period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any subcontractor.

## **ARTICLE 8 - Measurement and Payment**

### **8.1 MEASUREMENT OF QUANTITIES**

8.1.1 All work completed under the Contract shall be measured by the Engineer according to United States standard measures, or as stated in this Contract. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract shall conform to good engineering practice. These measurements shall be considered correct and final unless the Contractor has protested same to the Engineer and has demonstrated the existence of an error by actual physical measurement before the work has progressed in a manner which would prohibit a proper check.

8.1.2 All measurements of the area of the various surface, pavement and base courses will be made in the horizontal projection of the actual surface and no deductions will be made for fixtures or structures having an area of nine (9) square feet or less. All measurements of headers, curbs, fences and any other type of construction which is to be paid for by its length, will be made in the horizontal projection of the actual driven length from toe to top of cutoff, except where slope exceeds ten percent (10%) and for piles, which will be by actual length. All materials which are specified for measurement by the cubic yard "Loose Measurement" or "Measured in the Vehicle" shall be hauled in approved vehicles and measured therein at the point of delivery. Approved vehicles for this purpose may be of any type or size satisfactory to the Engineer, provided that the body is of such type that the actual contents may be readily and accurately determined. Unless all approved vehicles on a job are of a uniform capacity each approved vehicle must bear a plainly legible identification mark indicating the specific approved capacity. The Inspector may reject all loads not hauled in such approved vehicles.

**8.2 NO WAIVER OF LEGAL RIGHTS** - The Engineer shall not be precluded or estopped by any measurements, estimate or certificate made either before or after the completion and acceptance of the work and payment therefore, from showing the true amount and

character of the work performed and materials furnished by the Contractor, or from showing that any such measurement estimate or certificate is untrue or incorrectly made, or rejecting the work or materials that do not conform in fact to the contract. The Engineer shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and its sureties such damages as the Department may sustain by reason of the Contractor's failure to comply with the terms of the contract. Neither the acceptance by the Engineer or any representative of the Engineer, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, or any possession taken by the Engineer, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damage herein provided. A waiver of any notice requirement or breach of the contract shall not be held to be a waiver of any other notice requirement or subsequent breach.

### **8.3 PAYMENT FOR ADDITIONAL WORK**

8.3.1 Payment for Changed Conditions – A contract modification or change order complying with section 4.4 PRICE ADJUSTMENT and section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT shall be issued for all changes that are directed under Section 4.2 CHANGES. No payment for any change including work performed under the force account provisions will be made until a change order is issued or contract modification is executed.

8.3.1.1 At the completion of the force account work or at an intermediate interval approved by the Engineer, the contractor shall submit its force account cost proposal, including; approved daily force account records with any attached invoices or receipt, to the Engineer for processing a contract modification or change order.

8.3.2 On credit proposals and proposals covering both increases and decreases, the application of overhead and profit shall be on the net change in direct costs for the performance of the work.

8.3.3 When payment is to be made for additional work directed by a field order, the total price adjustment as specified in the field order or if not specified therein for the work contained in the related change order shall be considered full compensation for all materials, labor, insurance, taxes, equipment use or rental and overheads, both field and home office including extended home and branch office overhead and other related delay impact costs.

8.3.4 Force Account Method - When, for the convenience of the Department, payment is to be made

by the Force Account method, all work performed or labor and materials and equipment furnished shall be paid for as described below. Payment by the Force Account method will not alter any rights, duties and obligations under the contract.

8.3.4.1 Labor - For all hourly workers, the Contractor will receive the rate of wage including fringe benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work, which shall be agreed upon in writing before beginning work for each and every hour that said labor is actually engaged in said work.

(a) All markups for overhead and profit shall be added subject to limitations established in Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

(b) No allowance for overtime compensation will be given without the written approval of the Engineer prior to performance of such work.

8.3.4.2 Insurance and Taxes - The Contractor and subcontractor(s) will also receive the actual additional costs paid for property damage, liability, workers compensation insurance premiums, State unemployment contributions, Federal unemployment taxes, social security and Medicare taxes to which a markup of up to six percent (6%) may be added.

8.3.4.3 Materials - For materials accepted by the Engineer and used, the Contractor and subcontractor(s) shall receive the actual cost of such materials delivered and incorporated into work, plus a markup allowed under Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

8.3.4.4 Subcontractors - Subcontractor costs shall be the actual costs of the subcontractor marked up as defined in this Section 8.3 plus a markup allowed under Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

#### 8.3.4.5 Equipment

(1) For machinery or special equipment (other than small tools as herein defined in clause 8.3.4.5.(h) owned or leased by the Contractor or a related entity, the use of which has been authorized by the Engineer:

(a.) The Contractor will be paid at the per-hour rental rates based on the monthly rate established for said machinery or equipment in the then-current edition of the Rental Rate Blue Book for Construction Equipment

including the estimated operating cost per hour and regional correction provided therein.

(b.) If no rate is listed for a particular kind, type or size of machinery or equipment, then the monthly, hourly rates shall be as agreed upon in writing by the Contractor and the Engineer prior to the use of said machinery or equipment. If there is no agreement, the Engineer will set a rate. The Contractor may contest the rate pursuant to Section 7.25 DISPUTES AND CLAIMS.

(c.) Rental rates which are higher than those specified in the aforesaid Rental Rate Blue Book publication may be allowed where such higher rates can be justified by job conditions such as work in water and work on lava, etc. Request for such higher rates shall be submitted in writing to the Engineer for approval prior to the use of the machinery or equipment in question.

(2) For machinery or special equipment (other than small tools as herein defined in clause 8.3.4.5.(h) rented by the Contractor or a related entity specifically for the Force Account work, the use of which has been authorized by the Engineer; The Contractor will be paid the actual rental cost for the machinery or equipment, including mobilization and demobilization costs. A receipt from the equipment supplier shall be submitted to the Engineer.

(3) For machinery or special equipment (other than small tools as herein defined in clause 8.3.4.5. (h) rented by the Contractor or a related entity for use in the project, but which will also be used for the Force Account work, the use of which has been authorized by the Engineer; The Contractor will be paid the actual rental cost for the machinery or equipment. No additional mobilization and demobilization costs will be paid. A receipt from the equipment supplier shall be submitted to the Engineer.

(4) The rental rate for trucks not owned by the Contractor shall be those as established under the Hawaii State Public Utilities Commission, which will be paid for as an equipment item pursuant to paragraph 8.3.4.5. Rental rates for Contractor-owned trucks not listed in the Rental Rate Blue Book shall be agreed upon in writing by the Contractor and Engineer prior to the use of said trucks. If there is no agreement, the Engineer shall set the rate. The Contractor may contest the rate

pursuant to Section 7.25 DISPUTES AND CLAIMS.

- (5) The rental period shall begin at the time equipment reaches the site of work, shall include each day that the machinery or equipment is at the site of the work and shall terminate at the end of the day on which the equipment is no longer needed. In the event the equipment must standby due to work being delayed or halted by reason of design, traffic, or other related problems uncontrollable by the Contractor, excluding Saturdays, Sundays and Legal Holidays, unless the equipment is used to perform work on such days, the rental shall be two hours per day until the equipment is no longer needed.
  - (5.1) The rental time to be paid will be for the time actually used. Any hours or operation in excess of 8 hours in any one day must be approved by the Engineer prior to the performance of such work.
  - (5.2) Rental time will not be allowed or credited for any day on which machinery or equipment is inoperative due to its breakdown. On such days, the Contractor will be paid only for the actual hours, if any, that the machinery or equipment was in operation.
  - (5.3) In the event the Force Account work is completed in less than 8 hours, equipment rental shall nevertheless be paid for a minimum 8 hours.
  - (5.4) For the purpose of determining the rental period the continuous and consecutive days shall be the normal 8-hour shift work day, Monday through Friday excluding legal holidays. Any work day to be paid less than 8 hours shall not be considered as continuous, except for equipment removed from rental for fuel and lubrication.
  - (5.5) No additional premium beyond the normal rates used will be paid for equipment over 8 hours per day or 40 hours per week.
- (6) All rental rates for machinery and equipment shall include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs, maintenance, tire wear, depreciation, storage, and all other incidentals.
- (7) All machinery and equipment shall be in good working condition and suitable for the purpose for which the machinery and equipment is to be used.
- (8) Individual pieces of equipment or tools having a replacement value of one thousand dollars (\$1,000) or less, whether or not consumed by use, shall be considered to be small tools and included in the allowed markup for overhead and profit and no separate payment will be made therefore.
- (9) The total of all Force Account rental charges accrued over the duration of the contract for a specific item of equipment shall not exceed the replacement cost of that equipment.
  - (9.1) The Contractor shall provide the cost of replacement to the Engineer prior to using the equipment. If the Engineer does not agree with the replacement cost, the Engineer shall set the replacement cost. The Contractor may contest the replacement cost pursuant to Section 7.25 DISPUTES AND CLAIMS.
- (10) Should the item of equipment be rented from an unrelated entity, the rental cost will be treated as an equipment cost under paragraph 8.3.4.5.
- (11) Transportation and/or Mobilization: The following provisions shall govern in determining the compensation to be paid to the Contractor for use of equipment or machinery on the Force Account method:
  - (11.1) The location from which the equipment is to be moved or transported shall be approved by the Engineer.
  - (11.2) Where the equipment must be transported to the site of the force account work, the Department will pay the reasonable cost of mobilizing and transporting the equipment, including its loading and unloading, from its original location to the site of force account work. Upon completion of the work the Department will pay the reasonable cost of mobilizing and transporting the equipment back to its original location or to another location, whichever cost is less.
  - (11.3) The cost of transporting the equipment shall not exceed the rates established by the Hawaii State Public Utilities Commission. If such rates are nonexistent, then the rates will be determined by the Engineer based upon the prevailing rates charged by established haulers within the locale.

(11.4) Where the equipment is self-propelled, the Department will pay the cost of moving the equipment by its own power from its original location to the site of the force account work. Upon completion of the work the Department will pay the reasonable cost of moving of the Equipment back to its original or another location, whichever cost is less.

(11.5) At the discretion of the Engineer, when the Contractor desires to use such equipment for other than Force Account work, the costs of mobilization and transportation shall be prorated between the Force Account and non Force Account work.

(12) Pickup trucks, vans, storage trailers, unless specifically rented for the Force Account work, shall be considered incidental to the Force Account work and the costs therefore are included in the markup allowed under Section 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT.

8.3.4.6 State Excise (Gross Income) Tax and Bond - A sum equal to the current percentage rate for the State excise (Gross Income) tax on the total sum determined in paragraphs 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 above, and the bond premium shall be added as compensation to the Contractor. The actual bond premium not to exceed one percent (1%) shall be added to items covered by paragraphs 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 when applicable.

(1) The compensation as determined in paragraphs 8.3.4.1, 8.3.4.2, 8.3.4.3, 8.3.4.4 and 8.3.4.5 above shall be deemed to be payment in full for work paid on a force account basis.

8.3.4.7 Records - The Contractor and the Engineer shall compare records of the labor, materials and equipment rentals paid by the Force Account basis at the end of each day. These daily records, if signed by both parties, shall thereafter be the basis for the quantities to be paid for by the Force Account method. The Contractor shall not be entitled to payment for Force Account records not signed by the Engineer.

8.3.4.8 Statements - No payment will be made for work on a Force Account basis until the Contractor has submitted to the Engineer, duplicate itemized statements of the cost of such Force Account work detailed as follows:

(a) Laborers - Name, classification, date, daily hours, total hours, rate, and extension for each laborer and

foreman and also the amount of fringe benefits payable if any.

(b) Equipment - Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

(c) Materials

(c.1) Quantities of materials, prices and extensions

(c.2) Costs of transporting materials, if such cost is not reflected in the prices of the materials.

(c.3) Statements shall be accompanied and supported by receipted invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractors shall submit an affidavit certifying that such materials were taken from stock and that the amount claimed represents the actual cost to the Contractor.

(d) Insurance - Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.

#### **8.4 PROGRESS AND / OR PARTIAL PAYMENTS**

8.4.1 Progress Payments - The Contractor will be allowed progress payments on a monthly basis upon preparing the Monthly Payment Application forms and submitting them to the Engineer. The monthly payment shall be based on the items of work satisfactorily completed and the value thereof at unit prices and/or lump sum prices set forth in the contract as determined by the Engineer and will be subject to compliance with Section 7.9 PAYROLLS AND PAYROLL RECORDS.

8.4.2 In the event the Contractor or any Subcontractor fails to submit certified copies of payrolls in accordance with the requirements of Section 7.9 PAYROLLS AND PAYROLL RECORDS, the Engineer may retain the amount due for items of work for which payroll affidavits have not been submitted on a timely basis notwithstanding satisfactory completion of the work until such records have been duly submitted. The Contractor shall not be due any interest payment for any amount thus withheld.

8.4.3 Payment for Materials - The Contractor will also be allowed payments of the manufacturer's, supplier's, distributor's or fabricator's invoice cost of accepted materials to be incorporated in the work on the following conditions:

8.4.3.1 The materials are delivered and properly stored at the site of Work; or

8.4.3.2 For special items of materials accepted by the Engineer, the materials are delivered to the Contractor or subcontractor(s) and properly stored in an acceptable location within a reasonable distance to the site of Work.

8.4.4 Partial payments shall be made only if the Engineer finds that:

8.4.4.1 The Contractor has submitted bills of sale for the materials or otherwise demonstrates clear title to such materials.

8.4.4.2 The materials are insured for their full replacement value to the benefit of the Department against theft, fire, damages incurred in transportation to the site, and other hazards.

8.4.4.3 The materials are not subject to deterioration.

8.4.4.4 In case of materials stored off the project site, the materials are not commingled with other materials not to be incorporated into the project.

## 8.5 PROMPT PAYMENT §3-125-23 HAR

8.5.1 Any money paid to a Contractor for work performed by a subcontractor shall be disbursed to such subcontractor within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes on which the Engineer has withheld payment.

8.5.2 Upon final payment to the Contractor, full payment to all subcontractors shall be made within ten (10) days after receipt of the money, provided there are no bona fide disputes over the subcontractor's performance under the subcontract.

8.5.3 All sums retained or withheld from a subcontractor and otherwise due to the subcontractor for satisfactory performance under the subcontract shall be paid by the contracting officer to the contractor and subsequently, upon receipt from the contracting officer, by the contractor to the subcontractor within the applicable time periods specified in subsection 8.5.2 and section 103-10 HRS.

8.5.3.1 Where a subcontractor has provided evidence to the contractor of satisfactorily completing all work under their subcontract and has provided a properly documented final payment request as described in subsection (8.5.5) of this section, and;

8.5.3.1.a Has provided to the contractor an acceptable performance and payment bond for the project executed by a surety company authorized to do business in the State, as provided in section 8.6 RETAINAGE; or

8.5.3.1.b The following has occurred:

8.5.3.1.b.1 A period of ninety days after the day on which the last of the labor was done or performed and the last of the material was furnished or supplied has elapsed without written notice of a claim given to contractor and the surety, as provided for in section 103D-324 HRS; and

8.5.3.1.b.2 The subcontractor has provided to the contractor:

8.5.3.1.b.2.1 An acceptable release of retainage bond, executed by a surety company authorized to do business in the State, in an amount of not more than two times the amount being retained or withheld by the contractor.

8.5.3.1.b.2.2 Any other bond acceptable to the contractor; or

8.5.3.1.b.2.3 Any other form of mutually acceptable collateral.

8.5.4 If the contracting officer or the contractor fails to pay in accordance with this section, a penalty of one and one-half per cent per month shall be imposed upon the outstanding amounts due that were not timely paid by the responsible party. The penalty may be withheld from future payment due to the contractor, if the contractor was the responsible party. If a contractor has violated subsection 8.5.2 three or more times within two years of the first violation, the contractor shall be referred by the contracting officer to the contractor license board for action under section 444-17(14) HRS.

8.5.5 Final Payment Request. A properly documented final payment request from a subcontractor, as required by subsection 8.5.3, shall include:

8.5.5.1 Substantiation of the amounts requested;

8.5.5.2 A certification by the subcontractor, to the best of the subcontractor's knowledge and belief, that:

8.5.5.2.a The amounts requested are only for performance in accordance with the specification, terms, and conditions of the subcontract;

8.5.5.2.b The subcontractor has made payments due to its subcontractors and suppliers from previous payments received under the subcontract and will make timely payments from the proceeds of the payment covered by the certification, in accordance with their subcontract agreements and the requirements of this section; and

8.5.5.2.c The payment request does not include any amounts that the subcontractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of their subcontract; and

8.5.5.2.d The submission of documentation confirming that all other terms and conditions required under the subcontract agreement have been fully satisfied.

8.5.6 The Engineer shall return any final payment request that is defective to the contractor within seven days after receipt, with a statement identifying the defect.

8.5.7 A payment request made by a contractor to the Engineer that includes a request for sums that were withheld or retained from a subcontractor and are due to a subcontractor may not be approved under subsection 8.5.3 unless the payment request includes:

8.5.7.1 Substantiation of the amounts requested; and

8.5.7.2 A certification by the contractor, to the best of the contractor's knowledge and belief, that:

8.5.7.2.a The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

8.5.7.2.b The subcontractor has made payments due to its subcontractors and suppliers from previous payments received under the contract and will make timely payments from the proceeds of the payment covered by the certification, in accordance with their subcontract agreements and the requirements of this section; and

8.5.7.2.c The payment request does not include any amounts that the contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of their subcontract.

8.5.8 The Engineer shall return any final payment request that is defective to the contractor within seven days after receipt, with a statement identifying the defect.

8.5.9 This section shall not be construed to impair the right of a contractor or a subcontractor at any tier to negotiate and to include in their respective subcontracts provisions that provide for additional terms and

conditions that are requested to be met before the subcontractor shall be entitled to receive final payment under subsection 8.5.3 of this section; provided that any such payments withheld shall be withheld by the Engineer.

**8.6 RETAINAGE** – The Department will retain a portion of the amount due under the contract to the contractor, to ensure the proper performance of the contract.

8.6.1 The sum withheld by the Department from the contractor shall not exceed five percent (5%) of the total amount due the contractor and that after fifty percent (50%) of the contract is completed and progress is satisfactory, no additional sum shall be withheld; provided further that if progress is not satisfactory, the Engineer may continue to withhold as retainage, sums not exceeding five percent (5%) of the amount due the contractor.

8.6.2 The retainage shall not include sums deducted as liquidated damages from moneys due or that may become due the contractor under the contract.

8.6.3 General Obligation Bonds – The contractor may withdraw retainage monies in whole or in part by providing a general obligation bond of the State or its political subdivisions suitable to the Department. The contractor shall endorse over to the Department and deposit with the Department any general obligation bond suitable to the Department, but in no case with a face value less than the value established by law, of the amount to be withdrawn. The Department may sell the bond and use the proceeds in the same way as it may use monies directly retained from progress payments or the final payment.

8.6.4 Any retainage provided for in this section or requested to be withheld by the contractor shall be held by the Engineer.

8.6.5 A dispute between a contractor and subcontractor of any tier shall not constitute a dispute to which the State or any county is a party, and there is no right of action against the State or any county. The State and a county may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

8.6.6 The retention amount withheld by the contractor from its subcontractor shall be not more than the same percentage of retainage as that of the contractor (also applies to subcontractors who subcontract work to other subcontractors) where a subcontractor has provided evidence to the contractor of:

8.6.6.1 A valid performance and a payment bond for the project that is acceptable to the contractor and executed by a surety company authorized to do business in this State;

8.6.6.2 Any other bond acceptable to the contractor; or

8.6.6.3 Any other form of collateral acceptable to the contractor.

8.6.7 A written notice of any withholding shall be issued to a subcontractor, with a copy to the procurement officer, specifying the following:

8.6.7.1 The amount to be withheld;

8.6.7.2 The specific causes for the withholding under the terms of the subcontract; and

8.6.7.3 The remedial actions to be taken by the subcontractor to receive payment of the amounts withheld.

8.6.8 The provisions of this section shall not be construed to require payment to subcontractors of retainage released to a contractor pursuant to an agreement entered into with the contracting officer meeting the requirements of subsection 8.6.3.

**8.7 WARRANTY OF CLEAR TITLE** - The Contractor warrants and guarantees that all work and materials covered by progress payments made thereon shall be free and clear of all liens, claims, security interests or encumbrances, and shall become the sole property of the Department. This provision shall not, however, be construed as an acceptance of the work nor shall it be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the Department to require the fulfillment of all the items of the contract.

## **8.8 FINAL PAYMENT**

8.8.1 Upon final settlement, the final payment amount, less all previous payments and less any sums that may have been deducted in accordance with the provisions of the contract, will be paid to the Contractor, provided the Contractor has submitted a Tax Clearance Certificate from the Department of Taxation and the Internal Revenue Service to the effect that all taxes levied or accrued under Federal and State Statutes against the contractor have been paid.

8.8.2 Sums necessary to meet any claims of any kind by the State may be retained from the sums due the

Contractor until said claims have been fully and completely discharged or otherwise satisfied.

## **8.9 CLAIMS ARISING OUT OF PAYMENT FOR REQUIRED WORK**

- If the Contractor disputes any determination made by the Engineer regarding the amount of work satisfactorily completed, or the value thereof, or the manner in which payment therefore is made or calculated, it shall notify the Engineer in writing of the specific facts supporting the Contractor's position. Such notice shall be delivered to the Engineer no later than thirty (30) days after the Contractor has been tendered payment for the subject work, or, if no payment has been tendered, not later than fifty (50) days after it has submitted the Monthly Payment Application required under Section 8.4 PROGRESS PAYMENTS herein to the Engineer for the work that is the subject of the dispute. The delivery of the written notice cannot be waived and shall be a condition precedent to the filing of the claim. No claim for additional compensation for extra work or change work shall be allowed under this provision, unless the notice requirements of Article 4 SCOPE OF WORK have been followed. Acceptance of partial payment of a Monthly Payment Application amount shall not be deemed a waiver of the right to make a claim described herein provided the notice provisions are followed. The existence of or filing of a payment claim herein shall not relieve the Contractor of its duty to continue with the performance of the contract in full compliance with the directions of the Engineer. Any notice of claim disputing the final payment made pursuant to Section 8.8 FINAL PAYMENT must be submitted in writing not later than thirty (30) days after final payment that is identified as such has been tendered to the Contractor.

## **ARTICLE 9 - CONFIDENTIALITY OF PERSONAL INFORMATION**

9.1 Definitions. "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:

1. Social Security number,
2. Driver's license number or Hawaii identification card number; or
3. Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

- 9.2 Confidentiality of Material.
- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
  - (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
  - (3) CONTRACTOR agrees to implement appropriate “technological safeguards” that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
  - (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
  - (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
  - (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.
- 9.3 Security Awareness Training and Confidentiality Agreements.
- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
  - (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
    - (a) The personal information collected, used or maintained by the CONTRACTOR will be treated as confidential;
    - (b) Access to the personal information will be allowed only as necessary to perform the Contract; and
    - (c) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.
- 9.4 Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the State may at its sole discretion:
- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
  - (2) Immediately terminate this Contract.
- 9.5 Records Retention.
- (1) Upon any termination of this Contract, CONTRACTOR shall pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
  - (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall not be disclosed without the prior written approval of the STATE. After the three (3) year retention period has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS.



ADDITIONAL GENERAL CONDITIONS FOR  
CONSTRUCTION CONTRACTS

*The following sections of the Hawaii Administrative Rules, Chapter §3-125 are hereby incorporated and made a part of the General Conditions.*

CHANGES FOR CONSTRUCTION CONTRACTS - §HAR 3-125-4

1. Change Order. The procurement officer, at any time, and without notice to any surety in a signed writing designated or indicated to be a change order, may make changes in the work within the scope of the contract as may be found to be necessary or desirable. Such changes shall not invalidate the contract or release the sureties, and the contractor will perform the work as changed, as though it had been part of the original contract. Minor changes in the work may be directed by the procurement officer with no change in contract price or time or performance.
2. Adjustments of price or time for performance. If any change order increases or decreases the contractor's cost of, or the time required for performance of any part of the work under this contract, whether or not changed by the order, an adjustment may be made and the contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the price adjustment clause of this contract. Failure of the parties to agree to an adjustment shall not excuse a contractor from proceeding with the contract as changed, provided that the State promptly and duly makes such provisional adjustments in payments or time for the direct costs of the work as changed as the State deems reasonable. The right of the contractor to dispute the contract price or time required for performance or both shall not be waived by its performing the work, provided however, that it follows the notice requirements for disputes and claims established by the contract or these rules.
3. Time Period for Claim. Within thirty days after receipt of a written change order under paragraph (1), unless such period is extended by the procurement officer in writing, the contractor shall file a notice of intent to assert claim for an adjustment. The requirement for timely written notice cannot be waived and shall be a condition precedent to the assertion of a claim.
4. Claim barred after final payment. No claim by the contractor for an adjustment hereunder shall be allowed if written notice is not given prior to final payment under this contract.
5. Claims not barred. In the absence of such a change order, nothing in this clause shall restrict the contractor's right to pursue a claim under the contract or for breach of contract.

## PRICE ADJUSTMENT FOR CONSTRUCTION CONTRACTS - §HAR 3-125-13.

1. Price adjustment. Any adjustment in contract price pursuant to a clause in this contract shall be made in one or more of the following ways;
  - a. By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
  - b. By unit prices specified in the contract or subsequently agree upon;
  - c. Whenever there is a variation in quantity for any work covered by any line item in breakdown costs provided by the contractor pursuant to contractual pre-work submittal requirements, by the procurement officer, at the procurement officer's discretion, adjusting the lump sum price proportionately;
  - d. In such other manner as the parties may mutually agree;
  - e. At the sole option of the procurement officer, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee; or
  - f. In the absence of agreement between the parties, by a unilateral determination by the procurement officer of the costs attributable to the event or situation covered by the clause, plus appropriate profit or fee, all as computed by the procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126 (of the Hawaii Administrative Rules).
  
2. Determining the cost or credit. In determining the cost or credit to the State resulting from a change, the allowances for all overhead, extended overhead resulting from adjustments to contract time (including home office and field overhead) and profit combined, shall not exceed the percentages set forth below:
  - a. For the contractor, for any work performed by its own labor forces, fifteen per cent of the cost;
  - b. For each subcontractor involved, for any work performed by its own forces, fifteen per cent of the cost;
  - c. For the contractor or any subcontractor, for work performed by their subcontractors, ten per cent of the amount due the performing subcontractor.
  
3. Percentages for fee and overhead. Not more than three line item percentages for fee and overhead, not to exceed the maximum percentages shown above, will be allowed regardless of the number of tier subcontractors.

## PROMPT PAYMENT BY CONTRACTORS TO SUBCONTRACTORS – §HAR 3-125-23

1. Prompt payment clause. Any money, other than retainage, paid to a contractor shall be dispersed to subcontractors within ten days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and, upon final payment to the contractor, full payment to the subcontractor, including retainage, shall be

made within ten days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.

#### CHANGES TO THE GENERAL CONDITIONS

1. Under ARTICLE 1 – DEFINITIONS, insert the following:

“1.70 CONTRACTING OFFICER REPRESENTATIVE (COR): The Department of Defense Project Manager (PM).”

2. Under ARTICLE 2 - PROPOSAL REQUIREMENTS AND CONDITIONS, modify section 2.6 - SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING, by renaming section 2.6 - SUBSTITUTION BEFORE CONTRACT AWARD and deleting subsections 2.6.1, through 2.6.6 and substitute the following three new subsections and related paragraphs 2.6.1 through 2.6.3:

“2.6.1 For Substitutions after the Letter of Award is issued; refer to Section 6.3 SUBSTITUTION AFTER CONTRACT AWARD.

2.6.2 Unless specifically required otherwise in the contract documents, Offerors shall not submit products, materials, equipment, articles or systems for review or approval prior to submitting their Offers.

2.6.3 Offerors shall prepare their Offer forms based on the performance requirements of the materials, equipment, articles or systems noted on the drawings and specifications. If trade names, makes, catalog numbers or brand names are specified, Offerors shall infer that these items indicate the quality, style, appearance or performance of the material, equipment, article, or systems to be used in the project. The products and equipment of manufacturers listed throughout the specifications and other manufacturers are acceptable provided they meet or exceed the materials and construction requirements specified and are installed as specified.”

3. Under Article 6, delete subsections 6.3.2.4 and 6.3.3.

(S A M P L E)

Date: \_\_\_\_\_

Engineering Officer  
Department of Defense  
State of Hawaii  
3949 Diamond Head Road  
Honolulu, Hawaii 96816-4495

Dear Sir:

Subject: REQUEST FOR SUBSTITUTION

PROJECT TITLE & JOB NO.: \_\_\_\_\_

\_\_\_\_\_

In accordance with the requirements of the Special Provisions and as stated on the Specifications, we hereby submit for substitution, \_\_\_\_\_ sets of technical brochures and statement of variances for your review and approval for the item(s) shown below.

<u>ITEM</u>	<u>SPECIFIED BRAND</u>	<u>SUBSTITUTE BRAND</u>	<u>MODIFICATION/VARIANT FEATURES</u>
-------------	----------------------------	-----------------------------	--

I further certify that my request for substitution of the above item(s) has no other variant features.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
NAME OF COMPANY AND TITLE

- NOTE:
1. Use own letterhead
  2. Submit one (1) original and two (2) copies
  3. If no variant feature indicate "None"

WEEKLY QUALITY CONTROL REPORT FORM

PROJECT: \_\_\_\_\_

PROJECT NO.: \_\_\_\_\_

WEEK OF: \_\_\_\_\_

WORK PERFORMED: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INSPECTION REPORT: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ATTACH ANY ADDITIONAL INFORMATION

DATE PREPARED: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_

VERIFIED BY PRIME CONTRACTOR: \_\_\_\_\_

**SCOPE OF WORK**  
CONSTRUCTION SERVICES FOR  
BUILDING 90T RESTORATION AT KALAELOA,  
STATE OF HAWAII, DEPARTMENT OF DEFENSE,  
HAWAII ARMY NATIONAL GUARD  
JOB NO. CA-202209-C / PN15H00074  
March 22, 2024

This Scope of Work for construction services is for the restoration of Bldg 90T located at Hawaii Army National Guard (HIARNG) facility in Kalaeloa, Kapolei, Hawaii. Building 90T is a building that is part of the Navy PWC Transportation Yard that began operation in the early 1950's. The transportation yard contains two (2) wash racks, vehicle storage areas, and hazardous substance storage areas. Project is to restore B90T to a functional facility for the Hawaii Army National Guard.

Building 90T Restoration project consist of but not limited to the following:

- Replace sewer and waterlines serving the building.
- Removal of existing plumbing fixtures, piping, and accessories.
- Demolition work.
- Construct new toilet rooms.
- Painting.
- New lighting.
- Provide new electric tank type hot water heating system to support the restrooms.
- Change the exterior roofing and siding.
- Changing all windows in the structure.
- New building doors.
- Removal of existing HVAC systems, including equipment, ductwork, and accessories.
- Mechanically ventilate the electrical room, janitor's closet, and men's and women's restrooms.
- Disconnect existing electrical power switch within Building 785T which serves Building 90T will be disconnected and removed.
- Communication service.
- Pavement removal.
- Removal of tree stumps.

Also see attached project's construction plans and specifications.

FINAL SPECIFICATIONS

# **KALAELOA B90T RESTORATION**

**Job No: CA-202209-C**

Kalaeloa, State of Hawaii

PREPARED FOR:

**Department of Defense  
Hawaii Army National Guard  
State of Hawaii  
March 2024**

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## DIVISION 1 - GENERAL REQUIREMENTS

### SECTION 01100 - PROJECT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Location: Hawaii Army National Guard  
Building 90T  
Kalaeloa, Kapolei, Oahu, Hawai'i
- B. The Work generally includes, but is not limited, to the following: Project consists of:
  - 1. selective demolition work, concrete, asphalt pavement, structural steel, painting, mechanical equipment, controls, electrical work, building construction and all incidental and related work.
- C. Perform operations and furnish equipment, fixtures, appliances, tools, materials, related items and labor necessary to execute, complete and deliver the Work as required by the Contract Documents.
- D. 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 work specified within each section.
- E. Contractor shall not alter the Drawings and Specifications. If an error or discrepancy is found, notify the Project Manager.
- F. Specifying of interface and coordination in the various specification sections is provided for information and convenience only. The requirements in the various sections shall complement the requirements of this Section.

##### 1.02 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated 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. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred, as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract

Documents indicates. 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.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
  - a. The words “shall”, “shall be”, or “shall comply with”, depending on the context, are implied where a colon (:) is used within a sentence or phrase.
3. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research’s “Encyclopedia of Associations” or in Columbia Books’ “National Trade & Professional Associations of the U.S.”.
4. Specific details and notes take precedence over standard details and notes. Where conflicts exist between the drawings, the specifications, and the general notes, specific details shall govern.

#### B. Terms

1. Directed: Terms such as “directed”, “requested”, “authorized”, “selected”, “approved”, “required”, and “permitted” mean directed by Project Manager, requested by Project Manager, and similar phrases.
2. Indicated: The term “indicated” refers to graphic representations, notes, or schedules on drawings or to other paragraphs or schedules in specifications and similar requirements in the Contract Documents. Terms such as “shown”, “noted”, “scheduled”, and “specified” are used to help the user locate the reference.
3. Furnish: The term “furnish” means to supply and deliver to project site, ready for unloading, unpacking, assembly, and similar operations.
4. Install: The term “install” describes operations at project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
5. Provide: The terms “provide” or “provides” means to furnish and install, complete and ready for the intended use.
6. Installer: An installer is the Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-Subcontractor, to perform a particular

construction operation, including installation, erection, application, and similar operations.

7. Submit: Terms such as “submit”, “furnish”, “provide”, and “prepare” and similar phrases in the context of a submittal, means to submit to the Project Manager.
8. Contracting Officer: The term “Contracting Officer” shall be replaced with “Project Manager” unless otherwise specified.

C. Industry Standards

1. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
2. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
3. Conflicting Requirements: If compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Project Manager for a decision before proceeding.

1.03 PRODUCT REQUIREMENTS

- A. Models and brands listed are for reference or comparison only. All substitute equipment and material must be equal or better than specified models and brands listed.
- D. Requests for the approval of “or approved equal” shall be made in writing to the Contracting Office prior to the deadline for questions.

1.04 WORK SEQUENCE

- A. The Work shall be conducted in Phasing requirements.

1.05 USE OF PREMISES AND WORK RESTRICTIONS

- A. Contractor shall have use of the entire fenced area for construction operations during construction period. Contractor’s use of premises is limited by State’s right to perform work, to retain other Contractors on portions of the project site or to remain operational.
- B. Coordinate and schedule the Work, including shutdowns and utility interruptions, with the Project Manager and Project Contact Person. Work shall be scheduled to conform to the requirements of the Facility.

- C. Any and all disruption of access, etc. shall be coordinated in writing with the Project Manager and Project Contact Person and identified in the work schedule.
- D. Confine construction activities, operations, materials, equipment and appliances to the vicinity of the project work area. Do not unreasonably obstruct or interfere with the operation of the facilities, users and general public.
- E. Any and all construction aids necessary to maintain normal operations of the site and building and to protect the public and the staff shall be the responsibility of the Contractor. Work areas shall be cleaned daily.
- F. The Contractor shall relocate construction aids as required by the progress of construction, by storage, or by work requirements, and to accommodate the legitimate requirements of the Facility.
- G. No on-site construction work shall be allowed until all materials to be installed are in the possession of the General Contractor or the relevant subcontractor, and prepared and readied for installation. The General Contractor shall provide evidence to the Project Manager that this provision has been satisfied. The project construction schedule shall be developed on this basis.
- H. Contractor's use of premises is restricted as follows. Also refer to SECTION 01500 TEMPORARY FACILITIES AND CONTROLS for additional requirements.
  - 1. Construction Times and Schedule:
    - a. 7:00 AM to 5:00 PM. Hours. Contractor to coordinate with Project Manager.
    - b. The Contractor's normal working hours will be addressed at the Pre-Construction meeting.
  - 2. Parking and Access Roads:
    - a. Site Access and Parking:
      - 1) Parking: Parking for the Contractor's employees (or Subcontractors) will be limited to the available areas within the designated Project Contract limits or in areas designated by the Project Manager.
      - 2) Maintain access to the project site, Parking and Driveways through Project Contract Limits.
      - 3) Overnight parking is not allowed unless prior arrangements have been made with the Project Manager for construction equipment vehicles. Vehicles left overnight without authorization will be towed at the Contractor's expense.
  - 3. Sanitation:
    - a. Toilet facilities for use by the Contractor will be provided by the Contractor. Facilities shall be kept clean.

4. Noise and Dust Control:
  - a. Contractor shall monitor its construction activities and shall exercise precaution when using equipment and machinery to keep the noise and dust levels to an absolute minimum.
  - b. To reduce loud disruptive noise levels, ensure mufflers and other devices shall be provided on equipment, internal combustion engines and compressors.
  - c. Schedule construction activities that create excessive noise and dust problems, such as concrete coring, drilling, hammering, trenching for the weekends, holidays or non-business hours. Overtime costs for the Contractor's employees and work force are the Contractor's responsibility.
  - d. The Project Manager will require any construction activity that produces excessive of noise and dust to be performed during non-business hours. The Project Manager shall make the final determination. Overtime costs for the Contractor's employees and work force are the Contractor's responsibility.
5. Barricades, Boarding (barriers), Signs and Lighting:
  - a. Erect temporary barricades and/or boarding (as appropriate), and post directional signs at construction limits to prevent unauthorized individuals from entering the construction areas.
  - b.
    - 1) Adjust or extend the barricades and directional signs when directed by the Project Manager.
6. Storage of materials, equipment, etc.:
  - a. As the building will be operational during the entire duration of the project, on-site storage and staging may be limited. Restricted and/or limited on-site storage areas may require the Contractor to provide off-site storage.
    - 1) Store equipment, materials, machinery, etc. in areas as designated by the Project Manager.
7. Waste disposal:
  - a. The Contractor shall arrange for construction debris and trash to be removed from project site weekly, or on an earlier basis if required.
  - a. If encountered, hazardous material's waste shall be removed from the project site on a daily basis.
8. Other Conditions:

- a. Operate machinery and equipment with discretion and with minimum interference to driveways and walkways. Do not leave machinery and equipment unattended on roads and driveways.
- b. Store materials in the areas as designated by the Project Manager. Locate construction equipment, machinery, equipment and supplies within the Project Contract Limits.
  - a. Keep access roads and facility roads, to the project site free of dirt and debris. Provide, erect and maintain lights, barriers, signs, etc. when working on facility roads, driveways and walkways to protect pedestrians and motorcycle/bicycle riders. Obey facility traffic and safety regulations.

9. Contractor Tie-Downs:

- a. The Contractor shall not use building elements such as building columns, etc. for the anchorage of safety equipment.

I. Security Provisions:

1. Rules and Regulations: Consult with the Project Manager at the pre-construction conference and become familiar with the rules and regulations of the facility.
2. All movements of the Contractor into and within the site are subject to control by the Project Manager.
3. Property Security: The Contractor shall be responsible for the security of his own property on the site, including construction equipment, materials, tools, vehicles and including all property of the sub-contractors, and their employees.

J. Daily Reporting: A responsible person, designated by the Contractor, shall contact the Project Contact Person on a daily basis, to report their intended scope-of-work for the day.

K. Prohibition of Tobacco, Alcohol and Illegal substances:

1. Comply with the prohibition on the use of tobacco, alcohol beverages, and other illegal substances in State Facilities.

L. No Smoking Policy:

Smoking is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The Project Manager will identify designated smoking areas.

1.06 WORK UNDER OTHER CONTRACTS

- A. Separate Contract:
  - 1. The State may execute a separate contract for certain construction at the project site that was not known at the time Offers were submitted.
  - 2. The Contractor will be kept advised of the scheduling and status of other projects if awarded.
- B. The Contractor shall cooperate fully with separate Contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.07 HAWAII REVISED STATUTES 6E- 43.6 & HAWAII ADMINISTRATIVE RULES 13-300

- A. Inadvertent burial site and/or human remains shall be handled in accordance with the provisions outlined in HRS 6E-43.6 and HAR 13-300. In the event that human skeletal remains are inadvertently discovered, all activity in the immediate area shall cease and the HIARNG CRS will report the discovery to the SHPD, the appropriate medical examiner or coroner, and the police department. The SHPD will notify the Oahu Island Burial Council and The Office of Hawaiian Affairs (OHA) of the discovery. Within two (2) working days a medical examiner and a qualified archaeologist shall examine the skeletal remains to determine jurisdiction.
- B. Inadvertent non-burial finds shall be handled in accordance with the provisions outlined in HAR 13-280. In the event that historic properties are inadvertently discovered, all activity in the immediate area shall cease, no items shall be moved and the HIARNG CRS will notify the SHPD as soon as possible. The find(s) will be secured and protected by the State.

1.08 HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS

- A. Compliance: The Contractor shall follow all Federal, State, City and County laws, regulations, and permits, as well as applicable Department of Defense (DOD), Army, and Hawaii Army National Guard (HIARNG) plans and policies. Payment of any fines or penalties resulting from the Contractor's operations is the responsibility of the Contractor. See form attached at end of this Section.
- B. Hazardous Materials:
  - 1. Hazardous Materials Inventory. In order to facilitate annual Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA) reporting requirements, prior to project start, Contractor shall submit to the Hawaii Army National Guard (HIARNG) Environmental Office (ENV) a list of hazardous materials and quantities anticipated to be used for the project, including chemical products, fuel, asphalt, etc., and provide actual amounts within 30 days of project completion. For on-going projects, provide an update no later than 31 January



of each calendar year. The log shall include the product name, manufacturer, product identification number, container size, amount used, and maximum number of containers to be stored on-site at any given day during the project (sample form attached). Upon request and site visit, ENV may waive this requirement for containers 5 gallons or less. See Hazardous Material Inventory Log, attached at the end of this Section.

2. Storage. Contractor shall only store hazardous materials for immediate use on-site; no long-term storage shall be permitted. All liquid hazardous materials shall be stored in covered areas and in secondary containment capable of containing the contents of the largest container.
  3. Safety Data Sheets (SDSs). SDSs for all chemical products shall be made available to ENV upon request.
- C. Regulated Waste. If the Contractor will or may generate hazardous waste, universal waste (batteries, fluorescent lamps and other types of lamps, etc.), other regulated waste (e.g., asbestos, lead paint waste, polychlorinated biphenyl (PCB) light ballasts, etc.), or waste that requires laboratory analyses to determine if the waste is regulated:
1. Information Required Prior to Project Start. Contractor shall provide to ENV:
    - a. An estimate of the maximum amount of each type of waste to be generated per month, and the total amount anticipated to be stored onsite at any given time.
    - b. The names and EPA ID numbers of the disposal/recycling facilities and transporters to be used, which shall be listed on the Defense Logistics Agency (DLA) Disposition Services (DS) lists of Qualified Facilities and Qualified Transporters at <http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx>
  2. Sampling and Analyses. Contractor shall notify ENV prior to any sampling and analyses required to properly characterize the waste, and shall use a NELAC-approved laboratory. Contractor shall provide copies of all test reports within 5 workdays of receipt, along with any associated documents used to characterize the waste.
  3. Waste Management. Contractor shall mark/label, store, manage, and transport all waste in accordance with all applicable Federal, State, and local regulations; and pending shipment, store the waste in a secured area approved by ENV.
  4. Monthly Waste Generation Reports. Contractor shall submit monthly waste generation reports to ENV within 5 days after the end of each month. The reports shall indicate the type of waste and number of pounds of each type generated in the month being reported and totals stored on-site. See Waste Generation Reports, attached at the end of this Section.

5. Waste Manifests. Contractor shall submit draft copies of waste manifests to ENV for review at least 5 workdays prior to shipment off-site. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests shall only be signed by authorized ENV staff personnel.
6. Waste Disposal Costs. Contractor shall pay for all disposal/recycling costs for waste generated from this project, including sampling and analyses and other associated costs.

D. Spill Prevention and Response:

1. Contractors shall establish and implement spill preventive measures, including frequent preventive maintenance checks of vehicles and equipment to prevent leaks, avoid parking equipment on unpaved areas, use of drip pans, and storing all liquid chemicals under cover and in secondary containment capable of containing the contents of the largest container.
  2. No fueling on-site is permitted without approval from ENV. Contractors storing oil or fuel on-site in containers with aggregate shell capacity totaling greater than 1,320 gallons (regardless of actual amount stored) shall prepare Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112 *Oil Pollution Prevention* and shall submit a copy of the plan to ENV prior to project start.
  3. Contractors shall ensure adequate spill supplies are maintained on-site and readily available near areas with potential for spills or leaks.
  4. Contractor shall post emergency contact sign at project site indicating the name and phone number for the government Project Manager, the contractor emergency contact, police/fire department 911, and HIARNG ENV 672-1013. See sample attached at end of Section.
  5. Contractor shall report all spills immediately to the HIARNG Project Manager and ENV at 672-1013, and shall complete and submit the HIARNG Spill Incident Report Form to ENV within 72 hours. See form attached at end of Section.
  6. Contractor shall immediately clean up all spills IAW Federal and State guidelines, and to the satisfaction of ENV. Contractor shall accomplish all regulatory verbal and written notifications to the Hawaii Department of Health (DOH), Local Emergency Planning Committee (LEPC), National Response Center (NRC), and/or the Environmental Protection Agency (EPA), as applicable, and provide ENV copies of all spill reports submitted.
- E. Storm Water. Contractors shall initiate and maintain practices and measures to prevent contamination of storm water throughout all phases of work regardless of project size, and shall comply with HIARNG Construction, Repair, and Maintenance Storm Water Best Management Practices Manual, HIARNG Storm Water Management Plan.

- F. Permits. Contractor shall be responsible for assessing whether the project and/or project activities require environmental governmental permits/approvals (e.g., for oil/water separators, grease traps, septic tanks, underground injection control (UIC) wells, industrial storm water discharge, etc.) and are responsible for obtaining, implementing and complying with all applicable permit requirements.
1. Contractor shall provide to ENV prior to project start, copies of all permit applications, permits, approvals, and associated required plans.
  2. Projects that disturb more than 1 acre of soil, including projects that, considered with other related projects, cumulatively disturb more than 1 acre of soil, are required to obtain an applicable National Pollutant Discharge Elimination System (NPDES) storm water discharge permit from DOH, and comply with all permit requirements, including preparation of plans and conducting inspections. Sites less than 1 acre are required to implement best management practices (BMPs) to prevent contaminated storm water from leaving the site. See Construction Site Best Management Practices Checklist attached at the end of the Section.
- G. Solid Waste. Contractor shall submit to HIARNG Project Manager data for construction and demolition non-hazardous recycled/diverted waste (i.e., waste that does not go into the landfill or H-POWER) and non-hazardous disposed waste (waste that goes to landfill or H-POWER). Include the weight with its individual associated ticket number. Data can be provided by any means (e.g. receipt copies, Excel table, email message) Data should include:

REQUIRED DATA	RECYCLED/DIVERTED WASTE	DISPOSED WASTE
Ticket #		
Type of Material		
Net Weight		
Recycle/Disposal Facility		
Cost(C)/(R)Revenue Amount	C <input type="checkbox"/> R <input type="checkbox"/>	N/A

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS

PROJECT NAME:	
PROJECT NUMBER:	SUBMISSION DATE:
REVIEWER: HIARNG Environmental Compliance Office (ENV), <a href="mailto:ng.hi.hiarng.list.nghi-env-comp@mail.mil">ng.hi.hiarng.list.nghi-env-comp@mail.mil</a>	DATE REVIEWED:
	DATE RECEIVED:

N O.	REQUIREMENT
1	<p>Compliance. The Contractor shall follow all Federal, State, City and County laws, regulations, and permits, as well as applicable Department of Defense (DOD), Army, and Hawaii Army National Guard (HIARNG) plans and policies. Payment of any fines or penalties resulting from the Contractor's operations is the responsibility of the Contractor.</p>
2	<p>Hazardous Materials.</p> <p>a. Hazardous Materials Inventory. In order to facilitate annual Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA) reporting requirements, prior to project start, Contractor shall submit to the Hawaii Army National Guard (HIARNG) Environmental Office (ENV) a list of hazardous materials and quantities anticipated to be used for the project, including chemical products, fuel, asphalt, etc., and provide actual amounts within 30 days of project completion. For on-going projects, provide an update no later than 31 January of each calendar year. The log shall include the product name, manufacturer, product identification number, container size, amount used, and maximum number of containers to be stored on-site at any given day during the project (sample form attached). Upon request and site visit, ENV may waive this requirement for containers 5 gallons or less.</p> <p>b. Storage. Contractor shall only store hazardous materials for immediate use on-site; no long-term storage shall be permitted. All liquid hazardous materials shall be stored in covered areas and in secondary containment capable of containing the contents of the largest container.</p> <p>c. Safety Data Sheets (SDSs). SDSs for all chemical products shall be made available to ENV upon request.</p>
3	<p>Regulated Waste. If the Contractor will or may generate hazardous waste, universal waste (batteries, fluorescent lamps and other types of lamps, etc.), other regulated waste (e.g., asbestos, lead paint waste, polychlorinated biphenyl (PCB) light ballasts, etc.), or waste that requires laboratory analyses to determine if the waste is regulated:</p> <p>a. Information Required Prior to Project Start. Contractor shall provide to ENV:</p> <p>i. An estimate of the maximum amount of each type of waste to be generated per month, and the total amount anticipated to be stored on-site at any given time.</p> <p>ii. The names and EPA ID numbers of the disposal/recycling facilities and transporters to be used, which shall be listed on the Defense Logistics Agency (DLA) Disposition Services (DS) lists of Qualified Facilities and Qualified Transporters at</p>

	<p><a href="http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx">http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx</a></p> <p>b. Sampling and Analyses. Contractor shall notify ENV prior to any sampling and analyses required to properly characterize the waste and shall use a NELAC-approved laboratory. Contractor shall provide copies of all test reports within 5 workdays of receipt, along with any associated documents used to characterize the waste.</p> <p>c. Waste Management. Contractor shall mark/label, store, manage, and transport all waste in accordance with all applicable Federal, State, and local regulations; and pending shipment, store the waste in a secured area approved by ENV.</p> <p>d. Monthly Waste Generation Reports. Contractor shall submit monthly waste generation reports to ENV within 5 days after the end of each month. The reports shall indicate the type of waste and number of pounds of each type generated in the month being reported and totals stored on-site (sample form attached).</p> <p>e. Waste Manifests. Contractor shall submit draft copies of waste manifests to ENV for review at least 5 workdays prior to shipment off-site. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests shall only be signed by authorized ENV staff personnel.</p> <p>f. Waste Disposal Costs. Contractor shall pay for all disposal/recycling costs for waste generated from this project, including sampling and analyses and other associated costs.</p>
4	<p>Spill Prevention and Response.</p> <p>a. Contractors shall establish and implement spill preventive measures, including frequent preventive maintenance checks of vehicles and equipment to prevent leaks, avoid parking equipment on unpaved areas, use of drip pans, and storing all liquid chemicals under cover and in secondary containment capable of containing the contents of the largest container.</p> <p>b. No fueling on-site is permitted without approval from ENV. Contractors storing oil or fuel on-site in containers with aggregate shell capacity totaling greater than 1,320 gallons (regardless of actual amount stored) shall prepare Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112 <i>Oil Pollution Prevention</i> and shall submit a copy of the plan to ENV prior to project start.</p> <p>c. Contractors shall ensure adequate spill supplies are maintained on-site and readily available near areas with potential for spills or leaks.</p> <p>d. Contractor shall post emergency contact sign at project site indicating the name and phone number for the government Project Manager, the contractor emergency contact, police/fire department 911, and HIARNG ENV 672-1013.</p> <p>e. Contractor shall report all spills immediately to the HIARNG Project Manager and ENV at 672-1013, and shall complete and submit the HIARNG Spill Incident Report Form to ENV within 72 hours.</p> <p>f. Contractor shall immediately clean up all spills IAW Federal and State guidelines, and to the satisfaction of ENV. Contractor shall accomplish all regulatory verbal and written notifications to the Hawaii Department of Health (DOH), Local Emergency Planning Committee (LEPC), National Response Center (NRC), and/or the Environmental Protection Agency (EPA), as applicable, and provide ENV copies of all spill reports submitted.</p>
5	<p>Storm Water. Contractors shall initiate and maintain practices and measures to prevent contamination of storm water throughout all phases of work regardless of project size,</p>

	and shall comply with HIARNG Construction, Repair, and Maintenance Storm Water Best Management Practices Manual, and HIARNG Storm Water Management Plan.																		
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7	<p>Solid Waste. Contractor shall submit to HIARNG Project Manager data for construction and demolition non-hazardous recycled/diverted waste (i.e., waste that does not go into the landfill or H-POWER) and non-hazardous disposed waste (waste that goes to landfill or H-POWER). Include the weight with its individual associated ticket number. Data can be provided by any means (e.g. receipt copies, Excel table, email message) Data should include:</p> <table border="1"> <thead> <tr> <th>REQUIRED DATA</th> <th>RECYCLED/DIVERTED WASTE</th> <th>DISPOSED WASTE</th> </tr> </thead> <tbody> <tr> <td>Ticket #</td> <td></td> <td></td> </tr> <tr> <td>Type of Material</td> <td></td> <td></td> </tr> <tr> <td>Net Weight</td> <td></td> <td></td> </tr> <tr> <td>Recycle/Disposal Facility</td> <td></td> <td></td> </tr> <tr> <td>Cost(C)/(R)Revenue Amount</td> <td>C <input type="checkbox"/> R <input type="checkbox"/></td> <td>N/A</td> </tr> </tbody> </table>	REQUIRED DATA	RECYCLED/DIVERTED WASTE	DISPOSED WASTE	Ticket #			Type of Material			Net Weight			Recycle/Disposal Facility			Cost(C)/(R)Revenue Amount	C <input type="checkbox"/> R <input type="checkbox"/>	N/A
REQUIRED DATA	RECYCLED/DIVERTED WASTE	DISPOSED WASTE																	
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Type of Material																			
Net Weight																			
Recycle/Disposal Facility																			
Cost(C)/(R)Revenue Amount	C <input type="checkbox"/> R <input type="checkbox"/>	N/A																	

**MONTHLY WASTE GENERATION REPORT**

REPORTING MONTH/YEAR (MM/YYYY):

CONTRACTOR NAME:

PROJECT NUMBER & NAME PROJECT

LOCATION:

GOVERNMENT PROJECT MANGER NAME AND PHONE:

DATE SUBMITTED:

*Submit to HIARNG Environmental Office within 5 days of end of the reporting month.*

Accumulation Start Date	Accumulation End Date	Container ID Number	Contents	Category <sup>1</sup>	Beginning Weight (lbs.)	End-of-Month Weight (lbs.)	Waste Picked Up (lbs.)	Monthly Generation (lbs.)	NOTES

<sup>1</sup> HW - Hazardous Waste (e.g., lead paint chips); UW - Universal Waste (e.g., fluorescent lamps); PCB - Polychlorinated Biphenyls (e.g., light ballasts; Asbestos

-ASB (e.g., asbestos tiles)

## HAZARDOUS MATERIAL INVENTORY LOG

**CONTRACTOR NAME:** \_\_\_\_\_ **DATE SUBMITTED:** \_\_\_\_\_  
**PROJECT NUMBER & NAME:** \_\_\_\_\_  
**PROJECT DESCRIPTION:** \_\_\_\_\_  
**PROJECT LOCATION:** \_\_\_\_\_  
**PROJECT START DATE:** \_\_\_\_\_ **PROJECT END DATE:** \_\_\_\_\_  
**GOVERNMENT PROJECT MANAGER NAME AND PHONE:** \_\_\_\_\_ **REPORT PERIOD (circle) :** Start Annual End

*Submit to HIARNG Environmental Office prior to start of project, within 30 days of completion, and update by 31 January.*

PRODUCT NAME AND IDENTIFICATION NUMBER	MANUFACTURER	SIZE OF CONTAINER	ESTIMATED NUMBER OF CONTAINERS FOR PROJECT	MAXIMUM NUMBER OF CONTAINERS STORED ON SITE AT ANY ONE TIME	ACTUAL NUMBER OF CONTAINERS USED	FOR ENV USE





# **EMERGENCY CONTACTS**

**Contractor:** [Company Name]

**Site Supervisor:** [Name, Phone]

**Spill/Emergency:** [Name, Phone]

**After Hours:**[Name, Phone]

**Police/Fire:** 911

**Government POC:** [Name, Phone]

**HIARNG Environmental Office  
Spill Notification Hotline: 672-1013**



## HIARNG Spill Incident Report Form

REPORT SPILLS IMMEDIATELY TO HIARNG-ENV AT 672-1013.  
 Fax this form to 672-1262 or e-mail [ng.hi.hiarng.list.nghi-env-comp@mail.mil](mailto:ng.hi.hiarng.list.nghi-env-comp@mail.mil) within 72 hours of the spill.

<b>1</b>	LOCATION OF SPILL (Facility/Address/Bldg):	DATE & TIME OF SPILL:	
<b>2</b>	CALLER NAME & PHONE NUMBER:	OSC NAME & PHONE NUMBER:	
<b>3</b>	ORGANIZATION REPORTING:		
<b>4</b>	DATE AND TIME OF DISCOVERY:	DURATION OF THE SPILL:	
<b>5</b>	TIME & DATE HIARNG ENV NOTIFIED (672-1013):	PERSON NOTIFIED:	
<b>6</b>	SUBSTANCE SPILLED ( <i>Attach SDS</i> ):	AMOUNT SPILLED:	SIZE OF AREA IMPACTED:
<b>7</b>	CAUSE AND SOURCE OF THE SPILL:		
<b>8</b>	EXTENT AND SEVERITY OF SPILL: Potential Dangers: <input type="checkbox"/> Fire <input type="checkbox"/> Explosion <input type="checkbox"/> Toxic Fumes/Fluid <input type="checkbox"/> Evacuation Needed <input type="checkbox"/> Damage or Injuries ( <i>Specify</i> ): <hr/> Media into Which the Release Occurred or is Likely to Occur (Check all applicable): <input type="checkbox"/> Soil <input type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> UIC <input type="checkbox"/> Storm Drain <input type="checkbox"/> Swale <input type="checkbox"/> Sewer <input type="checkbox"/> Stream <input type="checkbox"/> Other ( <i>Specify</i> ): Raining? <input type="checkbox"/> No <input type="checkbox"/> Yes Raining Imminent? <input type="checkbox"/> No <input type="checkbox"/> Yes Direction of Flow:		
<b>9</b>	RESPONSE ACTIONS TAKEN TO STOP, REMOVE, AND MITIGATE EFFECTS OF THE SPILL:		
<b>10</b>	ADDITIONAL ASSISTANCE REQUIRED? <input type="checkbox"/> No <input type="checkbox"/> Yes ( <i>Specify</i> ):		
<b>11</b>	OTHER HIARNG OR EXTERNAL AGENCIES NOTIFIED ( <i>Agency, Individual, Date, Time, and Incident Number Assigned by Agency</i> ): <input type="checkbox"/> Fire Dept. <input type="checkbox"/> Ambulance <input type="checkbox"/> Other ( <i>Specify</i> ):		
<b>12</b>	PREVENTIVE ACTIONS TO BE TAKEN: ( <i>NOTE: This incident is required to be covered in the next unit/activity spill training.</i> )		
<b>13</b>	SUBMITTED BY ( <i>Name, Title, Phone</i> )		

*For Environmental Office Use Only.*

<b>1</b>	REPORTABLE? <input type="checkbox"/> No <input type="checkbox"/> Yes	REPORTABLE QTY:	Samples Taken? <input type="checkbox"/> No <input type="checkbox"/> Yes
<b>2</b>	VERBAL NOTIFICATIONS MADE ( <i>Indicate Agency, Individual, Date, and Time Notified, and any Incident Number Assigned</i> ) <input type="checkbox"/> SERC (HEER): <input type="checkbox"/> LEPC: <input type="checkbox"/> NRC (800) 424-8801: <input type="checkbox"/> Other ( <i>Specify</i> ): DATE WRITTEN NOTIFICATIONS MADE:		
<b>3</b>	CORRECTIVE ACTIONS TAKEN/ RECOMMENDED TO PRECLUDE RECURRENCE:		

## SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Project meetings.

#### 1.02 PERFORMANCE AND COORDINATION

- A. Contractor is in charge of the Work within the Project Contract Limits and shall direct and schedule the Work. Include general supervision, management and control of the Work of this project, in addition to other areas more specifically noted throughout the Specifications. Final responsibility for performance, interface, and completion of the Work and the Project is the Contractor's.
- B. The Contractor is responsible for jobsite Administration. Provide a competent superintendent on the job and provide an adequate staff to execute the Work. The superintendent shall have at least five (5) years of construction and project management experience. In addition, all workers shall dress appropriately and conduct themselves properly at all times. Loud abusive behavior, sexual harassment and misconduct will not be tolerated. Workers found in violation of the above shall be removed from the job site as directed by the Project Manager.
- C. 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.
- D. Coordination: Provide project interface and coordination to properly and accurately bring together the several parts, components, systems, and assemblies as required to complete the Work pursuant to the GENERAL CONDITIONS and SPECIAL CONDITIONS.
  - 1. Provide interface and coordination of all trades, crafts and subcontracts. Ensure and make correct and accurate connections of abutting, adjoining, overlapping, and related work. Provide anchors, fasteners, accessories, appurtenances, and incidental items needed to complete the Work, fully, and correctly in accordance with the Contract Documents.
  - 2. Provide additional structural components, bracing, blocking, miscellaneous metal, backing, anchors, fasteners, and installation accessories required to properly anchor, fasten, or attach material, equipment, hardware, systems and assemblies to the structure.
  - 3. Provide excavation, backfilling, trenching and drilling for trades to install their work.

4. Provide concrete foundations, pads, supports, bases, and grouting for trades as needed to install their work.
5. Provide caulking, sealing, and flashing as required to waterproof the building complete and as required to insulate the building thermally and acoustically. Include sealing, flashing, and related work as required to prevent moisture intrusion, air infiltration, and light leakage.
6. Equipment, appliances, fixtures, and systems requiring plumbing and mechanical services, rough-in, and connections, or other utilities and services shall be provided with such services, rough-in, and final connections.
7. Equipment, appliances, fixtures, hardware, and systems requiring electrical services shall be provided with such electrical services, including outlets, switches, overload protection, interlocks, panelboard space, disconnects, circuit breakers, and connections.
8. Materials, equipment, component parts, accessories, incidental items, connections, and services required to complete the Work which are not provided by Subcontractors shall be provided by the Contractor.
9. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

#### 1.03 COOPERATION WITH OTHER CONTRACTORS

- A. The State reserves the right at any time to contract for or otherwise perform other or additional work within the Project Contract Limits. The Contractor of this project shall to the extent ordered by the Project Manager, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by the State or other Contractors.

#### 1.04 COORDINATION WITH OTHER PRIME CONTRACTORS

- A. Multiple prime Contractors performing work under separate agreements with the State may be present near the project location, adjacent to and abutting the Project Contract Limits. This Contractor shall coordinate activities, sequence of work, protective barriers and any and all areas of work interfacing with other Prime Contractor's work. Contractor shall provide a continuity of finishes, walks, landscape, etc. at abutting Contract Limits so no additional work will be required. Any damage to other Prime Contractor's Work committed by this Contractor (or its Subcontractor) shall be repaired promptly at no additional cost to the State.
- B. Coordinate Subcontractors and keep them informed of any work from the other Projects that may affect the site or the Subcontractor's work. If the Contractor has any questions regarding its coordination responsibilities or needs clarification as to the impact in scheduling of its work and the work of other projects, this Contractor shall notify the Project Manager in writing.
- C. Subject to approval by the Project Manager, this Contractor shall amend and schedule its work and operations to minimize disruptions to the work and operations of other projects.

1. Relocate or remove and replace temporary barriers, fencing supports or bracing to allow work by others to proceed unimpeded. Do not remove required barriers supporting work until specified time or as approved by the Project Manager. This does not relieve the Contractor of the responsibility of proper coordination of the work. If directed by the Project Manager, leave in place any temporary barriers.
2. Coordinate work that abuts or overlaps work of the other projects with the Project Manager and other Prime Contractors to mutual agreement so that work is 100 percent complete with continuity of all materials, systems and finishes.
3. When directed by the Project Manager, provide access into the construction zone to allow the other project's Contractor(s) to perform their Work and work that must be interfaced.
4. Contractor shall adjust and coordinate its Work and operations as required by the other projects as part of the Work of this contract without additional cost or delay to the State.
5. When directed by the Project Manager provide a combined Contractor's construction schedule.

D. Other Contracts: If known, they are listed in SECTION 01100 - PROJECT REQUIREMENTS.

#### 1.05 SUBMITTALS

- A. Photo Documentation: Prior to the start of jobsite work, the Contractor shall photo document the existing conditions at the site and file with the Project Manager one (1) complete set of documents.
- B. Combined Contractors Construction Schedule: Provide schedule as determined by Project Manager for coordination with other prime Contractors.

#### 1.06 PROJECT MEETINGS AND TRAINING

- A. General: Schedule and conduct meetings and conferences as directed by the Project Manager at the job site, unless otherwise indicated.
  1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Project Manager of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Contractor record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Contracting Officer, within seven (7) days of the meeting.
- B. Preconstruction Conference: Project Manager shall schedule a preconstruction conference before the start of construction, at a time convenient to the Contracting Officer, but no later than seven (7) days before the Project start date or jobsite start date whichever is later. Conference will be

held at the Project site or another convenient location. The Project Manager shall conduct the meeting to review responsibilities and personnel assignments.

1. Attendees: Project Manager, and design consultants; Facility Users; Contractor and its superintendent; major Subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and coordination.
    - d. Designation of responsible personnel.
    - e. Use of the premises.
    - f. Responsibility for temporary facilities and controls.
    - g. Parking availability.
    - h. Office, work, and storage areas.
    - i. Equipment deliveries and priorities.
    - j. First aid.
    - k. Security.
    - l. Progress cleaning.
    - m. Working hours.
- C. Progress Meetings: Conduct progress meetings at monthly or other intervals as determined by the Project Manager. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to the Project Manager, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Outstanding Requests for information (clarification).
      - 2) Interface requirements.



- 3) Sequence of operations.
  - 4) Status of outstanding submittals.
  - 5) Deliveries.
  - 6) Off-site fabrication.
  - 7) Access.
  - 8) Site utilization.
  - 9) Temporary facilities and controls.
  - 10) Work hours.
  - 11) Hazards and risks.
  - 12) Progress cleaning.
  - 13) Quality and work standards.
  - 14) Force Account work.
  - 15) Change Orders and Change Proposals.
  - 16) Documentation of information for payment requests.
- c. Corrective Action Plan: Contractor shall provide a plan of corrective action for any item which is delayed or expected to be delayed, then that item impacts the contractual dates.
3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

## SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following
  - 1. Contractor's Construction Schedule.
  - 2. Submittals Schedule.
  - 3. Schedule of Prices.
  - 4. Payment Application.
- B. Related Sections include the following:
  - 1. SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION for preparing a combined Contractor's Construction Schedule.
  - 2. SECTION 01330 - SUBMITTAL PROCEDURES for submitting schedules and reports.

#### 1.02 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path and control the total length of the project. They must start and finish on the planned early start and finish times.
  - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of project.
- C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either the Department or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
  3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Schedule of Prices: A statement furnished by Contractor allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Payment Applications.

### 1.03 SUBMITTALS

- A. Required Submittals: Submit eight (8) sets of the list of the required submittals, by Specification Section, within fifteen (15) days after Notice to Proceed. A general listing is provided under SECTION 01330 – SUBMITTAL PROCEDURES.
1. The listing shall indicate and include the following:
    - a. The number of copies required for submittal.
    - b. Planned submittal date.
    - c. Approval date required by the Contractor.
    - d. A space where the “date of submittal” can be inserted.
    - e. A space where the “date of approval” can be inserted.
    - f. A space where an “action code” can be inserted.
- B. Construction Schedule: Submit seven (7) sets of the Construction Schedule for review within fifteen (15) days after the Notice to Proceed.
- C. Schedule of Prices: Submit three (3) sets of the Schedule of Prices integrated with the Construction Schedule for review within fifteen (15) days after Notice to Proceed.
1. Use the Department's forms for Payment applications.
- D. Payment Application: Submit the payment application at earliest possible date and no sooner than the last day of the month after all payroll affidavits, updated submittal registers, and schedules have been submitted.

### 1.04 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Contractors.

- B. Construction Schedule: Coordinate Contractor's Construction Schedule with the Schedule of Prices, Submittals Schedule, loaded monthly event activity, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- C. Schedule of Prices: Coordinate preparation of the schedule with preparation of Contractor's Construction Schedule.
  - 1. Correlate line items in the Schedule of Prices with other required administrative forms and schedules, including the following:
    - a. The Department's Payment Application form and the Construction Progress Report continuation sheet for the event cost estimate per time period.
    - b. Submittals Schedule.

## PART 2 - PRODUCTS

### 2.01 SUBMITTALS SCHEDULE

- A. Comply with the GENERAL CONDITIONS "SHOP DRAWINGS AND OTHER SUBMITTALS" Article. Furnish required submittals specified in this Section and in the Technical Sections. Submittals include one or more of the following: shop drawings, color samples, material samples, technical data, material safety data information, schedules of materials, schedules of operations, guarantees, certifications, operating and maintenance manuals, and field posted as-built drawings.
- B. Preparation: Furnish a schedule of submittals per Contracting Officer.
  - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Prices, and Contractor's Construction Schedule.
  - 2. The schedule shall accommodate a minimum of twenty-one (21) calendar days for the State's review, as applicable for the Island the project is located.
  - 3. Prepare and submit an updated list to the Project Manager at monthly intervals or as directed by the Project Manager. The listing shall reflect all approvals received since the last update.

### 2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE – PERT CHART CRITICAL PATH METHOD (CPM)

- A. 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 Project Manager, the Contractor shall participate in a

preliminary meeting to discuss the proposed schedule and requirements prior to submitting the schedule.

B. The Construction Schedule shall indicate the following:

1. Elements of the Project in detail time scaled by month or by week, and a project summary.
2. The order and interdependence of activities and the sequence in which the work is to be accomplished.
3. 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.
4. 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.
5. 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.
6. Provide a separate report with the following:
  - a. The description of the activity.
  - b. The duration of time in calendar days.
  - c. For each activity indicate the early start date.
  - d. For each activity indicate the early finish date.
  - e. For each activity indicate the late start date.
  - f. For each activity indicate the late finish date.
  - g. Total float time.
  - h. Cost of event.
  - i. Contract-required dates for completion of all or parts of the Work.
  - j. Events are to be used on "Monthly Progress Report" for monthly payment request.

C. Upon completion of the Project Manager's review, the Contractor shall amend the schedule as necessary to reflect the comments. If necessary, the Contractor shall participate in a meeting with the Project Manager to discuss the proposed schedule and changes required. Submit the revised schedule for review within seven (7) calendar days after receipt of the comments.

- D. Use the reviewed schedule for planning, organizing and directing the work, for reporting progress, and for requesting payment for the work completed. Unless providing an update, do not make changes to the reviewed schedule without the Project Manager's approval.
- E. Should changes to the schedule be desired, submit a request in writing to the Project Manager and indicate the reasons for the proposed change. If the changes are major, the Project Manager may require the Contractor to revise and resubmit the schedule at no additional cost to the State. Contractor shall mitigate the impact of all changes by readjusting the sequence of activities, duration of time, or resources utilizing available float.
  - 1. A change is major if, in the opinion of the Project Manager, the change affects the substantial completion date or other contractual and milestone dates.
  - 2. Minor changes are those that only affect activities with adequate float time.
- F. Once the schedule is reviewed by the Project Manager, the Contractor shall submit six (6) sets of the revised schedule within fourteen (14) calendar days.
- G. Throughout the duration of the project, the Project Manager may require more detailed breakdowns of activities, logic, and schedule submittals from the Contractor.
- H. Updated Schedules: Submit at monthly intervals or as directed by the Project Manager. The schedule shall reflect all changes occurring since the last update including the following:
  - 1. Activities started and completed during the previous period.
  - 2. The estimated duration to complete each activity that was started but not completed.
  - 3. Percentage of cost payable for each activity.
  - 4. Modifications and pending proposed changes.
  - 5. Narrative report describing current and anticipated problem areas or delaying factors with their impact together with an explanation of corrective actions taken or proposed.
- I. Failure on the part of the Contractor to submit updated schedules may be grounds for the Project Manager to withhold progress payments for items noted on the schedule.
- J. Contractor shall prosecute the work according to the CPM Schedule. The Project Manager shall rely on the reviewed Contractor's CPM Schedule and regular updates for planning and coordination. The Project Manager's review of the Contractor's CPM Construction Schedule does not relieve the Contractor of its obligation to complete the work within the allotted contract time. Nor does the review grant, reject or in any other way act on the Contractor's request for adjustments to complete remaining contract work, or for claims of additional compensation. These requests shall be processed in accordance with other relevant provisions of the contract.

- K. If the Project Manager issues a field order or change order or other directive that affects the sequence or duration of work activities noted on the construction progress schedule, the Contractor shall promptly update the schedule. To accomplish this update, add, delete or revise the work activities noted or change the logic in the schedule to show the Contractor's plan to incorporate the change into the flow of work. All change orders and time extension requests that affect the construction schedule shall be evaluated based on their impact on the approved Construction Schedule.
- L. If the current work is behind schedule or projected to be behind schedule, such as negative float on a critical activity or inability to meet the Contract Completion Date, the Project Manager may require the Contractor, at the Contractor's cost, to take remedial measures to get the project back on schedule. This may require increasing the work force, working overtime and weekends, air freighting materials, or other similar actions.
- M. If at any time the Project Manager determines that any critical activity has fallen behind the CPM schedule by fifteen (15) calendar days or more, the Contractor shall submit a remedial plan to recapture the lost scheduled time. Include a revised schedule. Furnish the remedial plan no later than seven (7) calendar days from Project Manager's notification.
- N. If an accelerated schedule is proposed, refer to GENERAL CONDITIONS Section 7.22 "CONSTRUCTION SCHEDULE".

#### 2.03 SCHEDULE OF PRICES

- A. Furnish a schedule of prices per Project Manager.
- B. Provide a breakdown of the Contract Sum in enough detail to facilitate developing and the continued evaluation of Payment Applications. Provide several line items for principal subcontract amounts, or for materials or equipment purchased or fabricated and stored, but not yet installed, where appropriate. Round amounts to nearest whole dollar; total shall equal the Contract Price.
- C. Each item in the Schedule of Prices and Payment Application shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

#### 2.04 PAYMENT APPLICATION

- A. Use the Schedule of Prices as the Monthly Construction Progress Report. Each Payment Application shall be consistent with previous applications and payments. The Contracting Officer shall determine the appropriateness of each payment application item.
- B. Payment Application Times: The date for each progress payment is the last day of each month. The period covered by each Payment Application starts on the first day of the month or following the end of the preceding period and ends on the last day of the month.
- C. Updating: Update the schedule of prices listed in the Payment application when Change Orders or Contract Modifications result in a change in the Contract Price.

- D. Provide a separate line item for each part of the Work where Payment Application may include materials or equipment purchased or fabricated and stored, but not yet installed.
- E. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
- F. Provide separate line items for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- G. Payment Application Forms: Use and submit copies of the Payment Application and Construction Progress forms provided by Department. Forms are available at the Department's Public Works Division office or District office. Furnish three (3) copies.
- H. Application Preparation: Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of the Contractor.
  - 1. Entries shall match data on the Schedule of Prices and Contractor's Construction Schedule. Use updated schedules if revisions were made. Include amounts of Change Orders and Contract Modifications issued before last day of construction period covered by application.
- I. No payment will be made until the following are submitted each month:
  - 1. Monthly Estimate, seven (7) copies.
  - 2. Monthly Progress Report, seven (7) copies.
  - 3. Statement of Contract Time, seven (7) copies.
  - 4. Updated Submittal Register, one (1) copy.
  - 5. Updated Progress Schedule, one (1) copy.
  - 6. All Daily Reports, one (1) copy.
  - 7. All Payroll Affidavits for work done, one (1) copy.
- J. Retainage: The Department will withhold retainage in compliance with the GENERAL CONDITIONS.
- K. Transmittal: Submit the signed original and six (6) copies of each Payment Application for processing.

## 2.05 CONTRACTOR DAILY PROGRESS REPORTS

- A. The General Contractor and all Subcontractors shall keep a daily report of report events.
- B. The form of the Contractor Daily Progress Report shall be as directed by the Project Manager.
- C. Submit copies of the previous week's reports on Monday morning at 10:00 a.m.



- D. Submit copies of the reports with the monthly payment request for the whole period since the last payment request submittal.
- E. Deliver the reports in hard copy or by e-mail as directed by the Project Manager.

PART 3 - EXECUTION (Not Used)

END OF SECTION

## SECTION 01330 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Comply with the GENERAL CONDITIONS “Shop Drawings and Other Submittals” section and “Material Samples” section.
- B. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- C. Related Sections include the following:
  - 1. SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION for submitting schedules and reports, including Contractor’s Construction Schedule and the Submittals Schedule.
  - 2. SECTION 01770 - CLOSEOUT PROCEDURES for submitting warranties, project record documents and operation and maintenance manuals.

#### 1.02 SUBMITTAL PROCEDURES

- A. Coordinate Work and Submittals: Contractor shall certify the submittals were reviewed and coordinated.
- B. Submittal Certification: Provide in MS Word when submitting electronically. Project Manager will provide an electronic copy of the Submittal Certification. Provide a reproduction (or stamp) of the “Submittal Certification” and furnish the required information with all submittals. Include the certification on:
  - 1. The title sheet of each shop drawing, or on
  - 2. The cover sheet of submittals in 8-1/2 inch x 11-inch format, or on
  - 3. One face of a cardstock tag (minimum size 3-inch x 6-inch) tied to each sample. On the sample tag, identify the sample to ensure sample can be matched to the tag if accidentally separated. The opposite face of the tag will be used by the Contracting Officer to receive, review, log stamp and include comments.
- C. Variances: The Contractor shall request approval for a variance. Clearly note any proposed deviations or variances from the Specifications, Drawings, and other Contract Documents on the submittal and also in a separately written letter accompanying the submittal.

D. Submittal Certification Form (stamp or digital)

CONTRACTOR'S NAME: \_\_\_\_\_  
PROJECT: \_\_\_\_\_  
DAGS JOB NO: \_\_\_\_\_

As the General Contractor, we checked this submittal and we certify it is 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.

SUBMITTAL NUMBER \_\_\_\_\_ DATE RECEIVED \_\_\_\_\_  
REVISION NUMBER \_\_\_\_\_ DATE RECEIVED \_\_\_\_\_  
SPECIFICATION SECTION NUMBER /PARAGRAPH NUMBER \_\_\_\_\_  
DRAWING NUMBER \_\_\_\_\_  
SUBCONTRACTOR'S NAME \_\_\_\_\_  
SUPPLIER'S NAME \_\_\_\_\_  
MANUFACTURER'S NAME \_\_\_\_\_

NOTE: DEVIATIONS FROM THE CONTRACT DOCUMENTS ARE PROPOSED AS FOLLOWS (Indicate "NONE" if there are no deviations)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  

CERTIFIED BY	_____
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Note: Form can be combined with Design Consultant's Review stamp. This is available from the Contracting Officer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 SUBMITTAL REGISTER AND TRANSMITTAL FORM

- A. Contractor shall use submittal register and transmittal forms as directed by the Project Manager.
- B. The listing of required submittals within this Section is provided for the Contractor's convenience. Review the specification technical sections and prepare a comprehensive listing of required submittals. Furnish submittals to the Project Manager for review.
- C. Contractor shall separate each submittal item by listing all submittals in the following groups with the items in each group sequentially listed by the specification section they come from:
  - 1. Administrative
  - 2. Data
  - 3. Tests
  - 4. Closing

D. Contractor shall separate all different types of data as separate line items all with the column requirements.

E. Contractor shall send monthly updates and reconciled copies electronically to the Project Manager and the Design Consultant in MS Word or MS Excel or other format as accepted by the Project Manager.

Section No. – Title	Shop Drawings & Diagrams	Samples	Certificates (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer’s Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan	O & M Manual	Equipment or Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer’s Guaranty or Warranty (Greater than one year)
01100 – Project Requirements			■	■			■				■			■		
01310 – Project Management and Coordination											■			■		
01320 – Construction Progress Documentation							■				■			■		
01330 – Submittal Procedures			■											■		
01500 – Temporary Facilities and Controls							■							■		
01575 – Temporary Controls - Air Quality					■									■		
01700 – Execution Requirements														■		
01770 – Closeout Procedures	■								■				■	■	■	■

Section No. – Title	Shop Drawings & Diagrams	Samples	Certificates (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer’s Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan & Results	O & M Manual	Equipment or Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer’s Guaranty or Warranty (Greater than one year)
02411 – Selective Demolition											■					
02512 – Water System			■	■				■								
02770 – Curbs and Gutters				■										■		
07461 – Steel Siding		■	■	■			■		■							■
07610 – Sheet Metal Roofing	■	■		■					■					■		■
07920 – Joint Sealants				■												
08111 – Steel Doors and Frames				■												
08511 – Aluminum Windows	■			■												■
08710 – Door Hardware				■						■						
08800 - Glazing		■														
08911 – Fixed Louvers	■			■												
09290 – Gypsum Board				■												
09301 – Ceramic Tiling		■		■												
09911 – Exterior Painting				■												
09912 – Interior Painting				■												
10211 – Plastic Toilet Compartments	■	■		■												
10280 – Toilet Accessories				■												

Section No. – Title	Shop Drawings & Diagrams	Samples	Certificates (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer’s Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan & Results	O & M Manual	Equipment or Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer’s Guaranty or Warranty (Greater than one year)
15400 - Plumbing General Purpose			■	■					■	■				■	■	
15650 – Air Conditioning and Ventilation									■					■	■	
15901 – Testing, Adjusting, and Balancing (TAB)			■				■							■	■	
16100 – Electrical Work				■			■									
16301 – Underground Electrical Work				■			■									
16510 – Interior Lighting				■					■	■						■

END OF SECTION

## SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include but are not limited to, the following:
  - 1. Sanitary facilities, including toilets, wash facilities, and drinking water facilities.
  - 2. Ventilation.
  - 3. Electric power service.
  - 4. Lighting.
  - 5. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Warning signs.
  - 2. Trash, refuse disposal.
  - 3. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities and measures include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Barricades, warning signs, and lights.
- E. Related Sections: Refer to Divisions 2 through 16 for other temporary requirements including ventilation, humidity requirements and products in those Sections.

#### 1.02 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to the State and shall be included in the Contract Price. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
  - 1. Other Contractors with agreements with the State working within the contract limits.
  - 2. Occupants of Project.

3. Testing agencies.
4. Project Manager and personnel of authorities having jurisdiction.

#### 1.03 SUBMITTALS

- A. Temporary Utility Reports: Submit reports of tests, inspections, and similar procedures performed on temporary utilities.
- B. Landfill Disposal Receipts: Submit copies of receipts issued by a landfill facility. Include receipts with Contractor Daily Progress Report.

#### 1.04 QUALITY ASSURANCE

- A. Standards: Comply with UBC Chapter 33, "Site Work, Demolition and Construction", ANSI A10.6, NECA's "Temporary Electrical Facilities", and NFPA 241, "Construction, Alteration, and Demolition Operations".
  1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
  2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70, "National Electrical Code".
    - a. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

#### 1.05 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to the Contracting Officer, change over from use of temporary service to use of permanent service.
  1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Contracting Officer's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  1. Keep temporary services and facilities clean and neat.
  2. Relocate temporary services and facilities as required by progress of the Work.



## 1.06 PREPARATION AND PROTECTION

- A. Protection of Property: Continually maintain adequate protection of the Work from damage and protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. Repair, replace or pay the expense to repair damages resulting from Contractor's fault or negligence.
- B. Before starting work to be applied to previously erected constructions, make a thorough and complete investigation of the recipient surfaces and determine their suitability to receive required additional construction and finishes. Make any repair that is required to properly prepare surfaces, and coordinate the Work to provide a suitable surface to receive following Work.
- C. Commencing work by any trade implies acceptance of existing conditions and surfaces as satisfactory for the application of subsequent work, and full responsibility for finished results and assumption of warranty obligations under the Contract.
- D. Protect existing (including interiors) work to prevent damage by vandals or the elements. Provide temporary protection. Use curtains, barricades, or other appropriate methods. Take positive measures to prevent breakage of glass and damage to plastic, aluminum and other finishes.
- E. Repairs and Replacements: Promptly replace and repair damages to the approval of the Project Manager. Additional time required to secure replacements and to make repairs does not justify a time extension.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Project Manager. Provide materials suitable for use intended.
- B. Plastic Enclosure Fence: Industry standard 4-foot high plastic fencing with metal (or wood) post supports at 10-feet on center connected with a top and bottom 12-gauge soft annealed galvanized tie wires securely connected to posts. Posts shall be capable of resisting a lateral load of 100 pounds measured at the top of the post.
- C. Tarpaulins: Fire resistive labeled with flame spread rating of 15 or less.
- D. Water: Potable.

### 2.02 EQUIPMENT

- A. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA recommended classes for exposures.

Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

- B. Self Contained Combination Toilet and Urinal Units: Single occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. One quarter of, or at least one unit shall contain a handwash sink with potable water storage.
- C. Drinking Water Fixtures: Drinking water fountains or containerized, tap dispenser, bottled water drinking water units, or water cooler dispensing water at 45 – 55 degree F available at project site including paper cup supply.
- D. Electrical Outlets: Properly configured, NEMA polarized outlets to prevent insertion of 110 to 120 V plugs into higher voltage outlets; equipped with ground fault circuit interrupters, reset button, and pilot light.
- E. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125 V ac, 20 A rating, and lighting circuits may be nonmetallic sheathed cable.

## PART 3 - EXECUTION

### 3.01 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
  - 1. Secure approval from Project Manager before modifications are made to the State Inspector's Field Office.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.02 TEMPORARY UTILITY INSTALLATION

- A. General: Connect to existing service where directed by the Contracting Officer.
  - 1. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked in services.
- B. Water Service: A temporary tap into the Facility's existing water system is allowed, subject to the following conditions:
  - 1. Comply with the Department of Health's and County water provider's requirements when tapping into the existing water system.

2. Reasonable amounts of water will be available without charge.
  3. Should the Contractor at any time fail to comply with any or all of the above conditions, the Department may terminate the use of water. The Contractor shall remove the hookup within forty-eight (48) hours of notification of such termination.
- C. Storm Drainage: Drainage due to construction related activities into any storm drain and any major water runoff from the project site is generally prohibited. Drainage ditches, ponds or similar facilities capable of holding drainage water is recommended if possible. NPDES (National Pollutant Discharge Elimination System) permit is required for a project site one acre or more of land area (depending on configuration of a project site, it is possible that land area assumed to be less than one acre could be determined to be one acre or more and require a NPDES permit). Supporting documents such as Storm Water Pollution Control Plan, Spill Prevention and Response Plan, Storm Water Monitoring Plan, Best Management Practices Plan and other possible documents may be required for the permit application. The State Department of Health, Clean Water Branch should be contacted to determine all submission requirements for the permit application.
- D. Water Service: Make arrangements with the utility company for temporary use of water, and pay for all expenses.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
  2. Toilets: Use of Facility's existing toilet facilities are not
  3. Toilets: Install self contained toilet units. Shield toilets to ensure privacy. Provide separate facilities for male and female personnel.
  4. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
    - a. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
  5. Locate toilets and drinking water fixtures so personnel need not walk more than 200-feet horizontally to facilities.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on

completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

- G. Electric Power Service: Use of State facilities electrical power services will be permitted as long as equipment is maintained in a condition acceptable to the Project Manager.
- H. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment. Protect wiring, in conduits or other, measures when exposed to possible damage or traffic areas.
- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
- J. Telephone Service: Provide a portable wireless telephone with voice-mail or messaging service for superintendent's use in making and receiving telephone calls when at the construction site.

### 3.03 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Locate storage sheds and other temporary construction and support facilities for easy access or where shown on Contract Drawings or as directed by the Project Manager.
  - 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion.
  - 3. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to State.
- B. Project Sign and Temporary Sign(s):
  - 1. Provide and install project identification sign and other signs as listed. Sign designs are attached to Part 3 of this Section:
    - a. Warning Sign
  - 2. Install signs where directed by the Contracting Officer or where indicated to inform public and persons seeking entrance to the Project. Do not permit installation of unauthorized signs.
  - 3. Provide temporary signs to provide directional information to constructional personnel and visitors.
  - 4. Construct signs with durable materials, properly supported or mounted, and visible.
- C. Trash, Refuse Disposal:
  - 1. Department of Health – Illegal Dumping Notice. See attachment to Part 3 of this section.

- a. This Notice to be printed out on 8.5x11" paper.
  - b. This Notice to be posted at the job site field office and/or in locations visible to all contractors, subcontractors, suppliers, vendors, etc. throughout the duration of the project.
2. Illegal Dumping of solid waste could subject the Contractor to fines and could lead to felony prosecution in accordance with Chapter 342H, HRS. For more information, see the following web site:  
<http://www.hawaii.gov/health/environmental/waste/sw/pdf/Illdump.pdf>
  3. Provide waste collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
  4. Do not burn debris or waste materials on the project site.
  5. Do not bury debris or waste material on the project site unless specifically allowed elsewhere in these specifications as backfill material.
  6. Haul unusable debris and waste material to an appropriate off site dump area.
    - a. Water down debris and waste materials during loading operations or provide other measures to prevent dust or other airborne contaminants.
    - b. Vacuum, wet mop, or damp sweep when cleaning rubbish and fines which can become airborne from floors or other paved areas. Do not dry sweep.
    - c. Use enclosed chutes or containers to conveying debris from above the ground floor level.
  7. 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.
- D. Janitorial Services: Provide janitorial services on a weekly basis for first aid stations, toilets, wash facilities, and similar areas.

### 3.04 ENVIRONMENTAL CONTROLS

- A. General: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Dust Control:

1. 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 60.1 Air Pollution Control.
2. Contractor is responsible for and shall determine the method of dust control. Subject to the Contractor's choice, the use of water or environmentally friendly chemicals may be used over surfaces that create airborne dust.
3. Contractor is responsible for all damage claims due to their negligence to control dust.

C. Noise Control

1. Keep noise within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 Community Noise Control. Obtain and pay for the Community Noise Permit when construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. Ensure mufflers and other devices are provided on equipment, internal combustion engines and compressors to reduce loud disruptive noise levels and maintain equipment to reduce noise to acceptable levels.
3. Unless specified elsewhere, do not start construction equipment that meet allowable noise limits prior to 6:45 A.M. or equipment exceeding allowable noise levels prior to 7:00 A.M.

3.05 VIOLATION OF ENVIRONMENTAL PROVISIONS

- A. Violations of any of the above environmental control requirements or any other pollution control requirements; which may also be specified in the other Specifications sections, shall be resolved under the SUSPENSION and CORRECTIVE WORK Section of the GENERAL CONDITIONS.

3.06 BARRICADES AND ENCLOSURES

- A. Barricades: Before construction operations begin, erect temporary construction barricade(s) to prevent unauthorized persons from entering the project area and to the extent required by the Project Manager.
1. Maintain temporary construction barricade(s) throughout the duration of the Work. During the course of the project, the Project Manager may require additional barricades be provided for the safety of the public. Contractor shall erect the additional barricade(s) at its own expense.
  2. Construction
    - a. Plastic fencing.

B. Opening Protection

1. Vertical Openings: Close openings with plywood or similar materials.
  2. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load bearing, wood framed construction.
- C. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

### 3.07 TEMPORARY FIRE PROTECTION

- A. Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
    - a. Class ABC dry chemical extinguishers or a combination of extinguishers of NFPA recommended classes for exposures.
    - b. Locate fire extinguishers where convenient and effective for their intended purpose.
  2. Store combustible materials in containers in fire safe locations.
  3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire exposure areas.
  4. Supervise welding operations, combustion type temporary heating units, and similar sources of fire ignition.
  5. Develop and supervise an overall fire prevention and first aid fire protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  6. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.07 OPERATION, TERMINATION, AND REMOVAL

- A. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by heat and similar elements.
- B. Termination and Removal: Remove each temporary facility when need for its service has ended, or when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may

have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. The Department reserves the right to take possession of Project identification signs.

3.08 ATTACHMENTS

- A. Warning Sign: Requirements for Warning Sign.
- B. Department of Health – Illegal Dumping Notice

END OF SECTION



## REQUIREMENTS FOR WARNING SIGN



1. General Requirements: Furnish all labor, materials and equipments necessary to construct and install warning signs as specified hereinafter.
2. Materials
  - a. Backing: Backing shall be 6061-T6 aluminum 0.032-inch minimum thickness.
  - b. Paint: Paint shall be satin finish, exterior grade or factory baked enamel or a combination thereof.
3. Colors: Signs shall have white background. Remaining items shall be similar to Rust-Oleum Federal Safety Red.
4. Requirements for Warning Sign: Message configuration and dimensions shall be in accordance with the attached illustration.
5. Installation
  - a. Signs shall be located at 50-foot intervals around roped off work area or at all entrances in the case of interior work.
  - b. Signs shall be attached to the rope barrier, rope barrier supports, individual sign supports or buildings. Do not use nails to attach signs to building(s).
6. Clean-up: Remove all signs upon completion of project. Repair any damages caused by sign mounting and removal.

DEPARTMENT OF HEALTH  
ILLEGAL DUMPING NOTICE

The law requires you to dispose solid waste only at recycling or disposal facilities permitted by the Department of Health.

“Solid waste” includes municipal refuse, construction and demolition waste, household waste, tires, car batteries, derelict vehicles, green wastes, furniture, and appliances.

Illegal dumping of solid waste  
or allowing illegal disposal of solid waste on your property even if contractual or other arrangements are made could subject you to fines from \$10,000 to \$25,000 per occurrence  
and could lead to felony prosecution  
in accordance with Chapter 342H, HRS.

Contact the Department of Health,  
Solid Waste Section at 586-4226  
to report illegal dumping activities  
or if you have further questions.

## SECTION 01575 - TEMPORARY CONTROLS - AIR QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This section describes the steps that the Contractor shall perform to control odors or dusts generated by the equipment, materials, or actions of the construction process that may affect the quality of air to non-Contractor personnel.

#### 1.02 REFERENCES

- A. "Indoor Air Quality" published by the Sheetmetal and Air Conditioning Contractor's National Association (SMACNA).
- B. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) standards as follows: 62; 55; 52; and 1.
- C. "Indoor Air Quality in Public Buildings", Volumes I and II, by Sheldon L, Handy RW, Hartwell TD, et al.; (Public Access Buildings Study).
- D. National Particleboard Association (NPA) Standard for Formaldehyde Emission for Particleboard: NPA6.

#### 1.03 DEFINITIONS

- A. "Air changes per hour" shall mean a number calculated by the maximum work area length in feet times the maximum work area width in feet times the maximum work area height in feet divided by 60 times the cubic feet per minute of air movement  $(L \times W \times H)/(60 \times \text{CFM})$ .
- B. "Odor" means something that can be detected by a person's sense of smell whether objectionable or not to the person.
- C. "Perceivable" means able to attain an awareness solely through the use of the human senses such as smell, sight, hearing, taste, and touch.
- D. "VOC" means volatile organic compound, a compound containing a chemical constituent with a boiling point of less than 100 Deg C (volatile) and that contains carbon (organic).
- E. "VOC emission rate" means the total amount of hydrocarbons emitted per area and unit of time as determined from the product and test method data supplied by the manufacturer or from data in the EPA Public Access Buildings Study.

#### 1.04 SUBMITTALS

- A. Submit a certification, which may be a copy of the product label or Material Safety Data Sheets (MSDS), of the VOC emission rate for all VOC containing products. MSDS sheets and labels are acceptable only if the VOC data is available and highlighted.

- B. Submit VOC emission rates for all products containing any VOC compounds. Maintain a copy of the VOC certifications and emission rates (in a 3-ring binder) at the job site.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Provide temporary equipment including fans, blowers, tape, ducts, temporary wall materials and other similar items.

## PART 3 - EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. If all particleboard products used in the Project meet NPA 6 Standard, and all other VOC-containing materials have certified VOC emission rates less than 100 micrograms/m<sup>2</sup>h, the requirements of PART 3 - EXECUTION are not required for VOC control.
- B. Ensure the all work areas are isolated from those areas in which persons not employed by the Contractor will be present during construction, including those interconnected by air conditioning systems, adjacent buildings, and public areas.
  - 1. Install isolation barriers so that odors and dust from the work areas are not perceivable in any surrounding occupied area, then remove the barriers before the final acceptance of the project; or
  - 2. Provide local fresh and exhaust air that will be adequate to ensure odors and dust from the work areas are not perceivable in any surrounding occupied area. Meet the following minimum criteria:
    - a. At least 4 air changes per hour continued from the start of any emission producing work until four hours after the conclusion of any emission producing work; and
    - b. Exhaust the ventilating air to the outside of the building, at least 25 feet downwind of any opening to the building, surrounding buildings, or similar occupied areas, and at least 100 feet downwind of any building air supply intakes.
- C. Upon notification by the Project Manager of an odor or dust complaint, immediately stop all odors and dust producing tasks, and then execute the requirements of subparagraph 3.01. B. 2. within 4 hours after Project Manager's notification.
  - 1. Compliance with subparagraph 3.01 B. 1. is not considered sufficient isolation in this instance.
  - 2. If the items in subparagraph 3.01 B. 2. were previously implemented without satisfactory results, increase the air changes to 8 per hour.

3. The requirements in paragraph 3.01 D. may be performed in lieu of the requirements stated in paragraph 3.01 C. with prior permission from the Project Manager or shall be performed if requested by the Project Manager.
- D. When the conditions described in subparagraphs 3.01 B. 1., 3.01 B. 2., or paragraph 3.01 C., are unable to maintain an air quality acceptable to 80 percent of the surrounding occupants, perform the following at no extra cost to the State:
1. Immediately discontinue the use of the offending product(s) upon notification by the Project Manager;
  2. Perform the odor or dust generating task(s) during a non-occupied time such as evenings, weekends and holidays;
  3. Thoroughly clean any odor or dust affected area and equipment prior to occupancy; and
  4. Complete the odor or dust generating task(s) at least 16 hours prior to occupancy.

### 3.02 VENTILATION AFTER CONSTRUCTION

- A. In all work areas of a non-air conditioned new building, ventilate the building after completing construction and prior to occupancy. Perform ventilation as follows:
1. Notify the Contracting Officer prior to starting the ventilation work or immediately if any step cannot be successfully completed;
  2. Inspect areas adjacent to portable fans for the existence of or potential air containing odors. Eliminate the cause of any odor or potential odor;
  3. Open windows and doors (interior and exterior) for maximum ventilation of the work area. Use care to maintain security and to prevent infiltration of dirt, debris, dust, or impact on surrounding occupied areas. Maintain protection from the elements of weather, and site cleanliness;
  4. Turn on all of the available lights and heat producing equipment;
  5. Ventilate the work area using portable supply and exhaust fans capable of providing one complete work area air change per hour for 72 hours; and
  9. Continue the ventilation procedure beyond the 72 hours if the Project Manager determines it necessary. Provide additional exhaust fans if directed by the Project Manager. Ventilation beyond 72 hours is considered additional work provided the Contractor followed the steps required in this paragraph 3.02 B.
  7. When the Project Manager determines that the ventilation is sufficient, remove the portable equipment.

B. In all work areas in an existing building, ventilate the building after completing construction and prior to occupancy. Perform ventilation as follows:

1. Use the steps in paragraph 3.02 B.

END OF SECTION

## SECTION 01700 - EXECUTION REQUIREMENTS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including the following:

1. Construction layout. Field engineering and surveying.
2. General installation of products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

- B. Related Sections

1. SECTION 01770 - CLOSEOUT PROCEDURES.

#### 1.02 SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

#### 1.03 NOTIFICATION

- A. Contact the Project Manager and the Project Contact Person at least three (3) working days prior to starting any onsite work.

#### 1.04 PROJECT AND SITE CONDITIONS

- A. Project Contract Limits (Contract Zone Limits) indicate only in general the limits of the work involved. Perform necessary and incidental work, which may fall outside of these demarcation lines. Confine construction activities within the Project Contract Limits and do not spread equipment and materials indiscriminately about the area.
- B. Disruption of Utility Services: Prearrange work related to the temporary disconnection of electrical and other utility systems with the Project Manager and the Project Contact Person. Unless a longer notification period is required elsewhere in the Contract Documents, notify the Project Manager at least thirty (30) days in advance of any interruption of existing utility service. Time and duration of interruptions are subject to the Project Manager's approval. Keep the utility interruptions and duration to a minimum so as not to cause inconvenience or hardship to the facility. If temporary electrical or other utility systems hook-up is required, provide the necessary services. Pay for temporary services as part of the contract, unless specifically noted otherwise.
- C. Contractor's Operations - Provide means and methods to execute the Work and minimize interruption or interference to the facility's operations. Rearrange the construction schedule when construction activities result in interruptions that hamper the operations of the facilities.

## 1.05 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor with a license to practice in Hawaii.
- B. Professional Engineer Qualifications: A professional engineer with a license to practice in Hawaii.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.01 EXAMINING THE SITE

- A. Contractor and Subcontractors are expected to visit the site and make allowances for difficulties and contingencies to be encountered. Compare contract documents with work in place. Become familiar, with existing conditions, the conditions to be encountered in performing the Work, and the requirements of the drawings and specifications.
- B. Verify construction lines, grades, dimensions and elevations indicated on the drawings before any clearing, excavation or construction begins. Bring any discrepancy to the attention of the Project Manager and make any change in accordance with the Project Manager instruction.
- C. Obtain all field measurements required for the accurate fabrication and installation of the Work included in this Contract. Verify governing dimensions and examine adjoining work on which the Contractor or Subcontractor's work is in any way dependent. Submit differences discovered during the verification work to the Project Manager for interpretations before proceeding with the associated work. Exact measurements are the Contractor's responsibility.
- D. Furnish or obtain templates, patterns, and setting instructions as required for the installation of all Work. Verify dimensions in the field.
- E. Contractor shall accept the site and the existing building in the condition that exists at the time access is granted to begin the Work. Verify existing conditions and dimensions shown and other dimensions not indicated but necessary to accomplish the Work.
- F. Locate all general reference points and take action to prevent their destruction. Lay out work and be responsible for lines, elevations and measurements and the work executed. Exercise precautions to verify figures and conditions shown on drawings before layout of work.

### 3.02 SITE UTILITIES AND TONING

- A. Cooperate, coordinate and schedule work to maintain construction progress, and accommodate the operations and work of the owners of underground or overhead utility lines or other property in removing or altering the lines or providing new services.
- B. Contact the utility companies before the start of the work to ascertain any existing utilities and to develop a full understanding of the utility requirements with respect to this Project. Furnish the Project Manager with evidence that the utility companies were contacted.



- C. Should the Contractor discover the existence and location of utilities in the contract drawings are not correct, do not disturb the utilities and immediately notify the Project Manager.
- D. Do not disturb or modify any utilities encountered, whether shown or not on the Contract Drawings, unless otherwise instructed in the drawings and specifications or as directed by the Project Manager. Repair and restore to pre-damaged condition any utilities or any other property damaged by construction activities.
- E. Transfer to “Field Posted As-Built” drawings the location(s) and depth(s) of new and existing utilities that differ from the Contract Drawings. Locate by azimuth and distance and depth(s) from fixed referenced points.
- F. Toning: Prior to the start of grading, or excavation or trenching work verify and confirm the presence, location and depth of existing underground utility lines in the area affected by the project, by “toning” or by other appropriate means acceptable to the Project Manager. The intent of this advanced toning is to afford the Project Manager an opportunity to identify utility lines that may or may not be shown on the drawings and issue a directive to address the existing conditions.
  - 1. Perform toning using instruments specifically developed and designed for the detection of underground pipes and cable utilities.
  - 2. Notify the Project Manager 48 hours in advance before toning operations. Provide information on the proposed toning method and other pertinent information.
- G. Recording Toning Information: Upon completion of the toning operation, submit drawings that show the location and approximate depth of the existing and newly discovered utility lines. Identify the type of utility lines. Also, identify where utility lines indicated on the drawings are not shown in their approximate location or where new utility lines are found or pointed out in the field.
- H. After ascertaining the exact location and depth of utilities within the project area, mark and protect the locations.
  - 1. Acquaint personnel working near utilities with the type, size, location, depth of the utilities, and the consequences that might result from disturbances.
  - 2. Do not start trenching or start similar operations until reasonable and appropriate precautions to protect the utilities are taken.
- I. For newly identified utility lines, if directed by the Project Manager, manually excavate within 2-foot of the utility line to avoid damage. Under this directive, manual excavation is considered additional work.

### 3.03 FIELD MEASUREMENTS

- A. Take field measurements to fit and install the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress.

- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Submit a Request For Information (RFI) immediately upon discovery of the need for clarification of the Contract Documents. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

#### 3.04 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to existing conditions. If discrepancies are discovered, notify the Project Manager promptly.
- B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level the foundations and piers from 2 or more locations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by the Project Manager.

#### 3.05 INSTALLATION

- A. Install materials, items, fixtures required by the various Divisions and Sections of the Specifications in accordance with Contract Documents, by workers specially trained and skilled in performance of the particular type of work, to meet guarantee and regulatory agency requirements. Should the drawings or specifications be void of installation requirements, install the materials, items, and fixtures in accordance with the manufacturer's current specifications, recommendations, instructions and directions.

#### 3.06 CUTTING AND PATCHING

- A. Oversee cutting and patching of concrete, masonry, structural members and other materials where indicated on drawings and as required by job conditions. Unless noted elsewhere in the contract documents, do not cut or patch existing or new structural members without previously notifying the Project Manager.
- B. Provide patch materials and workmanship of equal quality to that indicated on the drawings or specified for new work.

#### 3.07 CLEANING

- A. General: Clean the Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste more than 7 days unless approved otherwise by the Project Manager.
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- B. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use only cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.08 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

### 3.09 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions to provide proper temperature and relative humidity conditions.

### 3.10 CORRECTION OF THE WORK

- A. Repair or replace defective construction. Restore damaged substrates and finishes. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair defective components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION



**EnvironMETeo Services, Inc.**  
Environmental / Industrial Health & Safety

## **Project Specific Asbestos and Lead Paint Survey Report**

**For:**

**Mason Architects, Inc.  
119 Merchant Street, Suite 501  
Honolulu, Hawaii 96813**

**at**

**Building 90T  
90 Enterprise Avenue  
Kapolei, Hawaii 96707**

**Project:**

**Restoration of Facility 90T, Kalaeloa**

**Submitted by:**

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

**Report Date: April 24, 2024**

**EMET ID: 2309339**



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## Certification of Report

We certify that this report is based on a physical survey of EMET scope of work areas as impacted by this project at Building 90T, located at 90 Enterprise Avenue, Kapolei, Hawaii. The survey included an inspection for asbestos-containing materials (ACM) and lead paint on surfaces/building components.

The survey was conducted by EnvironMETeo Services, Inc. (EMET) on March 27, 2024 and was limited to the following scope of work:

### Asbestos/Lead Paint Investigation

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

#### **Building 90T\***

- interior
- exterior including roof

\* Building 90T consists of a high ceiling south wing and a high ceiling north wing connected by a shorter middle wing. Each wing was constructed at different times so the homogeneity of materials for asbestos testing purposes cannot extend between wings. EMET sampled each wing independently of the others.

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

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



Bulk samples of suspect asbestos-containing materials taken during the survey were analyzed for asbestos content by a National Institute of Standards and Technology (NIST) accredited laboratory under the National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos fiber analysis. Laboratory analyses performed by Polarized Light Microscopy (PLM) for asbestos identification are in accordance with U.S. Environmental Protection Agency (EPA) Test Method 600/R-93/116.

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

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

A handwritten signature in black ink, appearing to read "Andrew Uyeda", with a long horizontal flourish extending to the right.

Andrew Uyeda  
Asbestos Building Inspector  
Hawaii State Certification # HIASB-2432  
Lead Based Paint Risk Assessor  
Hawaii State Certification # PB-0669





## Summary

EnvironMETeo Services, Inc. (EMET) conducted a survey for asbestos-containing materials (ACM) and lead paint on surfaces/building components at Building 90T, 90 Enterprise Avenue, Kapolei, Hawaii, on March 27, 2024. Andrew Uyeda and Joseph Iopa of EMET conducted the survey in accordance with Hawaii Administrative Rules (H.A.R) 11-501 as well as EMET's scope of work. The survey was requested and authorized by Glenn Mason of Mason Architects, Inc. and was performed in preparation for planned renovations.

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

### Asbestos Summary

EMET could not safely access the high roofs over the north and south wings due to the presence of skylights and the lack of anchor points. Suspect materials encountered on these high roofs must be handled as ACM until properly tested and proven otherwise.

The following materials were identified as ACM:

### **ACM**

- black mastic beneath 12" x 12" beige w/ blue stripes vinyl floor tiles in the smaller office of the middle wing, approx. 460 sf
- black mastic beneath 12" x 12" off-white w/ black streaks vinyl floor tiles in the larger office of the middle wing, approx. 1130 sf
- pink sink insulation on the underside of the smaller office of the middle wing, approx. 6 sf



Known or assumed ACM to be disturbed by renovation or demolition must be removed prior to the renovation or demolition by a Hawaii-certified Asbestos Abatement Contractor in accordance with HAR 11-501. A certified Asbestos Project Monitor should also be retained to provide oversight of abatement activity and ensure compliance with state and federal regulations during the abatement of ACM.

Trace asbestos was detected in the brown adhesive behind 4" brown covebase in the north wing. The Occupational Safety and Health Administration (OSHA) Asbestos in Construction standard still applies to the workers disturbing this adhesive.

#### Lead Paint Summary

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

The following painted surfaces contain lead in a concentration of less than 1.0 mg/cm<sup>2</sup>. The paints on these surfaces are lead-containing paint (LCP). Paint on testing combinations similar to those identified with LCP should also be treated as LCP.

#### **Middle Wing LCP**

brown paint on metal door, exterior	brown paint on metal door frame, exterior
red paint on metal pipe, exterior	off white paint on metal post, exterior
brown paint on metal roll-up door, exterior	brown paint on metal roll-up door frame, exterior
brown paint on metal window, exterior	brown paint on gypboard window frame, exterior
brown paint on metal window frame, exterior	blue paint on metal door frame, interior
yellow paint on metal railing, interior	green paint on wood wall base, interior
blue paint on metal window frame, interior	off white paint on metal window frame, interior



### North Wing LCP

off white paint on metal beam, exterior	brown paint on metal door, exterior
brown paint on metal door frame, exterior	gray paint on metal electrical box, exterior
off white paint on metal gutter, exterior	off white paint on metal pipe, exterior
brown paint on metal roll-up door, exterior	brown paint on metal roll-up door frame, exterior
yellow paint on metal bollard, exterior	off white paint on metal wall, exterior
white paint on metal wall, exterior	brown paint on metal window frame, exterior
off white paint on metal beam, interior	yellow paint on metal beam, interior
red paint on metal pipe, interior	off white paint on metal rafter, interior
yellow paint on concrete striping, interior	-

### South Wing LCP

off white paint on metal conduit pipe, interior	-
---	---

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

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

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



## **Asbestos-Containing Material**

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

- Hawaii Administrative Rules (HAR), Title 11, Department of Health, Chapter 501 (11-501), *Asbestos Requirements*.
- 29 CFR 1926.1101 Occupational Safety and Health Administration (OSHA), *Asbestos Standards for the Construction Industry*.
- EPA 40 CFR Part 61, Subpart M - National Emission Standards for Hazardous Air Pollutants (NESHAP), Final Rule revised July 20, 2004, *National Emission Standard for Asbestos*.

## **Asbestos Bulk Sampling**

A total of 123 samples of suspect ACM were collected and analyzed. The samples were placed in plastic containers with a unique identification number assigned to each sample and entered on a field data sheet. The sample locations were indicated on the field drawings shown in Appendix B.

EMET could not safely access the roofs over the north and south wings due to their height, presence of fall hazards (skylights), and lack of anchor points. No suspect materials were observed on the low roof over the middle wing.

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



### Middle Wing Suspect ACM

12" x 12" beige w/blue stripes vinyl floor tile (VFT)	black mastic beneath 12" x 12" beige w/blue stripes VFT
12" x 12" off-white w/black streaks VFT	black mastic beneath 12" x 12" off-white w/black streaks VFT
leveling compound beneath 12" x 12" beige w/blue stripes VFT	leveling compound beneath 12" x 12" off-white w/black streaks VFT
4" black covebase	brown adhesive beneath 4" black covebase
gypsum wallboard/mudjoint wall and ceiling system	off-white caulking at window frame
pink sink insulation	gray window glazing

### North Wing Suspect ACM

12" x 12" beige w/beige specks VFT	black adhesive beneath 12" x 12" beige w/beige specks VFT
4" brown covebase	brown adhesive beneath 4" brown covebase
4" off-white covebase	beige adhesive beneath 4" off-white covebase
4" black covebase	brown adhesive beneath 4" black covebase
1" brown threshold	yellow adhesive beneath 1" brown threshold
gypsum wallboard/mudjoint wall system	2' x 4' off-white fissured pinhole acoustical ceiling tile
off-white caulking at door frame	black expansion joint material
black vibration cloth	gray grout
gray mortar	black waterproofing

### North Wing Mezzanine Suspect ACM

gypsum wallboard/mudjoint wall system	black vibration cloth
4" brown covebase	beige adhesive beneath 4" brown covebase



### South Wing Suspect ACM

12" x 12" beige w/gray specks VFT	yellow/black adhesive beneath 12" x 12" beige w/gray specks VFT
gypsum wallboard/mudjoint wall and ceiling system	silver wrap w/yellow insulation wall insulation
off-white sink insulation	gray caulking at duct seams

### Asbestos Analyses

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

Based on the visual inspection and laboratory results of the samples collected, the following materials were identified as ACM.

### ACM Details

Material Description	Observable Quantity at Time of Inspection	Material Location	Condition; Friable/Non-Friable
black mastic beneath 12" x 12" beige w/blue stripes VFT	460 sf	office in middle wing; see Sketch 339-90TM-1	not friable, not damaged
black mastic beneath 12" x 12" off-white w/black streaks VFT	1130 sf	office in middle wing; see Sketch 339-90TM-1	not friable, not damaged
pink sink insulation	6 sf	underside of sink in middle wing; see Sketch 339-90TM-1	not friable, not damaged

Suspect materials found on the roofs of the north and south wings must be assumed to be ACM until properly tested and proven otherwise.



Known or assumed ACM to be disturbed by renovation or demolition must be removed prior to the renovation or demolition by a Hawaii-certified Asbestos Abatement Contractor in accordance with HAR 11-501.

A certified Asbestos Project Monitor should also be retained to provide oversight of abatement activity and ensure compliance with state and federal regulations during the abatement of ACM.

A trace (less than 1%) concentration of asbestos was detected in the brown adhesive behind 4" brown covebase in the north wing. Although this brown adhesive is not ACM by definition, it does contain asbestos and the OSHA 1926.1101 Asbestos in Construction standard applies to workers disturbing the material. The landfill or other final destination for the disposal of this adhesive should also be notified that the it contains asbestos in trace amounts.

### **Lead Paint**

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

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



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

### Lead Paint Sampling and Analyses

Painted surfaces were analyzed for lead using an XRF analyzer. A total of 161 analyses of painted surfaces/building components and calibrations were performed. A unique identification number was assigned to each test location and entered on a field data sheet. The ID number, location, description, and lead concentration of each sample is indicated in the XRF analyzer test results, which are provided in Appendix C.

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

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

#### LCP Details

Location	Testing Combination Component/Substrate	Condition	Color
middle wing, exterior	door / metal	intact	brown
middle wing, exterior	door frame / metal	poor	brown
middle wing, exterior	pipe / metal	intact	red
middle wing, exterior	post / metal	poor	off white
middle wing, exterior	roll up door / metal	intact	brown
middle wing, exterior	roll up door frame / metal	intact	brown
middle wing, exterior	window / metal	peeling	brown





Location	Testing Combination Component/Substrate	Condition	Color
middle wing, exterior	window / metal	intact	brown
middle wing, exterior	window / metal	poor	brown
middle wing, exterior	window frame / gypboard	peeling	brown
middle wing, exterior	window frame / metal	intact	brown
middle wing, exterior	window frame / metal	poor	brown
middle wing, interior	door frame / metal	intact	blue
middle wing, interior	railing / metal	intact	yellow
middle wing, interior	wall base / wood	intact	green
middle wing, interior	window frame / metal	intact	blue
middle wing, interior	window frame / metal	intact	off white
north wing, exterior	beam / metal	peeling	off white
north wing, exterior	door / metal	intact	brown
north wing, exterior	door frame / metal	intact	brown
north wing, exterior	electrical box / metal	intact	gray
north wing, exterior	gutter / metal	peeling	off white
north wing, exterior	pipe / metal	poor	off white
north wing, exterior	roll up door / metal	intact	brown
north wing, exterior	roll up door frame / metal	intact	brown
north wing, exterior	bollard / metal	poor	yellow
north wing, exterior	wall / metal	intact	off white
north wing, exterior	wall / metal	intact	white
north wing, exterior	window frame / metal	intact	brown
north wing, exterior	window frame / metal	intact	brown
north wing, interior	beam / metal	intact	off white
north wing, interior	beam / metal	intact	yellow
north wing, interior	pipe / metal	intact	red
north wing, interior	rafter / metal	intact	off white



<b>Location</b>	<b>Testing Combination Component/Substrate</b>	<b>Condition</b>	<b>Color</b>
north wing, interior	stripe / concrete	intact	yellow
south wing, interior	conduit pipe / metal	peeling	off white

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

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

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

### **Limitations**

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

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

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



## Appendix A

### Asbestos Survey Report

Mauka Lani Elementary School  
SFA PreK Renovation, DOE Job No. S85080-24

Asbestos and Lead Paint Survey  
EMET ID: 2402059

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

## Building Information Sheet

<b>Job Code /EMET ID</b>	<b>Client Name</b>	<b>Inspection date</b>
2309339	Mason Architects, Inc.	3/27/2024
<b>Building Number</b>	<b>Building Name</b>	<b>No. of Floors Surveyed</b>
90TM	BUILDING 90T MIDDLE SECTION	1
	<b>Location</b>	<b>No. of Other Levels Surveyed</b>
	90 Enterprise St. Kapolei, HI 96707	1

<b>Building Construction Type</b>	<b>Building Use</b>	<b>% Floor Space</b>	<b>ACBM PRESENT?</b>  <div style="border: 1px solid black; padding: 5px; display: inline-block;">YES</div>  YES = PRESENT NO = NOT PRESENT ASM = ASSUMED
STEEL FRAME	<b>Use #1</b> WAREHOUSE	100	
Structural Concrete with: Metal Decks, Flat Slab, Beam/Joist or Waffle Slabs; Structural Tees Steel Frame Wood Frame Load Bearing Masonry	<b>Use #2</b>		
	<b>Use #3</b>		
	Academic Classes, Administration Offices, Food Services, Dormitory, Mechanical Spaces, Gymnasium, Laboratory, Library, Residential or Other (Specify)		

<b>Inspector Identification</b>	<b>Specific areas surveyed</b>
<b>Name:</b> Andrew Uyeda <b>State of HI Certification No.</b> HIASB-2432 <b>State of HI Certification Expiration Date:</b> 6/1/2024 <b>Building Inspector Certification Exp. Date:</b> 12/6/2024	interior and exterior

**Inspector Comments**

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

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

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TM BUILDING 90T MIDDLE	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>	<b>Inspection Date(s):</b>	
339-90TM-1	3/27/2024	

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present			Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC	PD		
339-90TM-1A	12" X 12" BEIGE W/BLUE STRIPES VFT		YES	NO ACM						
339-90TM-1B	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BLUE STRIPES VFT		YES	ACM	NO	M	ND	NPD	8	\$4600
339-90TM-1C	OFF-WHITE LEVELING COMPOUND		YES	NO ACM						
339-90TM-1D	12" X 12" OFF-WHITE W/BLACK STREAKS VFT		YES	NO ACM						
339-90TM-1E	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT		YES	ACM	NO	M	ND	NPD	8	\$11300
339-90TM-1F	OFF-WHITE LEVELING COMPOUND		YES	NO ACM						

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type; S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition; ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition; NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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EMET Services, Inc. • 94-520 Uke`e Street, Suite A • Waipahu, HI 96797 • Phone (808) 671-8383 • Fax (808) 671-7979  
Bldg 90TM - Page 2

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TM BUILDING 90T MIDDLE	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TM-1		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present			Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC	PD		
339-90TM-1G	4" BLACK COVEBASE		YES	NO ACM						
339-90TM-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE		YES	NO ACM						
339-90TM-1I	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM		YES	NO ACM						
339-90TM-1J	OFF-WHITE CAULKING AT WINDOW FRAME		YES	NO ACM						
339-90TM-1K	PINK SINK INSULATION		YES	ACM	NO	M	ND	PD	8	
339-90TM-1L	GRAY WINDOW GLAZING		YES	NO ACM					\$450	

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type; S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition; ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition; NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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EMET Services, Inc. • 94-520 Uke`e Street, Suite A • Waipahu, HI 96797 • Phone (808) 671-8383 • Fax (808) 671-7979  
Bldg 90TM - Page 3

### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1A	12" X 12" BEIGE W/BBLUE STRIPES VFT		
	Drawing/Sketch Number		339-90TM-1A

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

#### Unified Sample Area/Homogeneous Material

12" X 12" BEIGE W/BBLUE STRIPES VFT

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

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TM-1A1, 339-90TM-1A2, 339-90TM-1A3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1A	12" X 12" BEIGE W/BBLUE STRIPES VFT
-------------	-------------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1A1	0	12" X 12" BEIGE W/BBLUE STRIPES VFT	See Sketch 339-90TM-1
339-90TM-1A2	0	12" X 12" BEIGE W/BBLUE STRIPES VFT	See Sketch 339-90TM-1
339-90TM-1A3	0	12" X 12" BEIGE W/BBLUE STRIPES VFT	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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





# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1A Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-088	339-90TM-1A1	blue, beige	Yes	No	-	-	misc. part. 100	
339-091	339-90TM-1A2	blue, beige	Yes	No	-	-	misc. part. 100	
339-094	339-90TM-1A3	blue, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TM-1B	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT	
	Drawing/Sketch Number		339-90TM-1B
	339-90TM-1	339-90TM-1	

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

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

#### Unified Sample Area/Homogeneous Material

BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT	See Sketch 339-90TM-1  offices
---	--------------------------------------

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input style="width: 50px;" type="text"/>	#2	<input style="width: 50px;" type="text"/>
Square Feet of Ceiling Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Wall Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Floor Surface	460		
Linear Feet of TSI	<input style="width: 100%;" type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input style="width: 100%;" type="text"/>		
Square Feet of Other ACM	<input style="width: 100%;" type="text"/>		
Linear Feet of Other ACM	<input style="width: 100%;" type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<b>±460</b>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
None	None	None
Visible	Reachable	Texture
None visible	Within reach	smooth
Barriers	Ventilation	If Yes
Enclosed	No	No
		Category I
Air Movement	Proximity to Repair Items	Activity
Low	Less than 1 ft.	Low

#### PHOTOGRAPH



#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1B1, 339-90TM-1B2, 339-90TM-1B3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>YES</b>
Number of Salient Designations:	<input style="width: 50px;" type="text"/>

### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1B	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1B1	5	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT	See Sketch 339-90TM-1
339-90TM-1B2	5	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT	See Sketch 339-90TM-1
339-90TM-1B3	5	BLACK MASTIC BENEATH 12" X 12" BEIGE W/BUE STRIPES VFT	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



NVLAP LAB CODE 101807-0

Client: Mason Architects, Inc. Building: BUILDING 90T MIDDLE SECTION

Address: 119 Merchant Street, Suite 501 Honolulu, HI 96813 Address: 90 Enterprise St. Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1B Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-089	339-90TM-1B1	black	Yes	Yes	chrysotile 5	-	misc. part. 95	
339-092	339-90TM-1B2	black	Yes	Yes	chrysotile 5	-	misc. part. 95	
339-095	339-90TM-1B3	black	Yes	Yes	chrysotile 5	-	misc. part. 95	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1C	OFF-WHITE LEVELING COMPOUND		
	Drawing/Sketch Number		339-90TM-1C

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

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

#### Unified Sample Area/Homogeneous Material

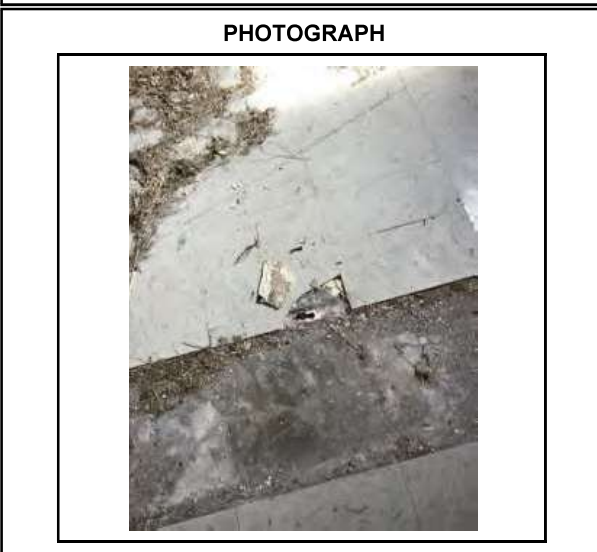
OFF-WHITE LEVELING COMPOUND

Not Applicable

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

RISK ASSESSMENT DETERMINATION		
Physical Condition	Potential Damage	Water Damage
--	--	--
Visible	Reachable	Texture
--	--	--
Barriers	Ventilation	If Yes
--	--	--
		Friable Surface
		--
Air Movement	Proximity to Repair Items	Activity
--	--	--

SAMPLE ANALYSIS SUMMARY SECTION	
Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1C1, 339-90TM-1C2, 339-90TM-1C3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1C	OFF-WHITE LEVELING COMPOUND
-------------	-----------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1C1	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1
339-90TM-1C2	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1
339-90TM-1C3	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1C Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-090	339-90TM-1C1	white, beige	Yes	No	-	-	misc. part. 100	
339-093	339-90TM-1C2	white, beige	Yes	No	-	-	misc. part. 100	
339-096	339-90TM-1C3	white, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1D	12" X 12" OFF-WHITE W/BLACK STREAKS VFT		
	Drawing/Sketch Number		339-90TM-1D

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

#### Unified Sample Area/Homogeneous Material

12" X 12" OFF-WHITE W/BLACK STREAKS VFT

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

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input type="text"/>		

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TM-1D1, 339-90TM-1D2, 339-90TM-1D3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH





### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1D	12" X 12" OFF-WHITE W/BLACK STREAKS VFT
-------------	---

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1D1	0	12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1
339-90TM-1D2	0	12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1
339-90TM-1D3	0	12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1D Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-097	339-90TM-1D1	black, beige	Yes	No	-	-	misc. part. 100	
339-100	339-90TM-1D2	black, beige	Yes	No	-	-	misc. part. 100	
339-103	339-90TM-1D3	black, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1E	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT		
	Drawing/Sketch Number		339-90TM-1E
	339-90TM-1	339-90TM-1	

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

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

#### Unified Sample Area/Homogeneous Material

BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1  offices
--	--------------------------------------

#### SAMPLING STRATEGY DATA

Ceiling Height #1		#2	
Square Feet of Ceiling Materials			
Square Feet of Wall Materials			
Square Feet of Floor Surface	1130		
Linear Feet of TSI			
Square Feet of Structural Steel Coatings (including over-spray)			
Square Feet of Other ACM			
Linear Feet of Other ACM			
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<b>±1130</b>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
None	None	None
Visible None visible	Reachable Within reach	Texture smooth
Barriers	Ventilation	If Yes
Enclosed	No	No
		Friable Surface Category I
Air Movement	Proximity to Repair Items	Activity
Low	Less than 1 ft.	Low

#### PHOTOGRAPH



#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1E1, 339-90TM-1E2, 339-90TM-1E3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>YES</b>
Number of Salient Designations:	

### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1E	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1E1	5	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1
339-90TM-1E2	5	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1
339-90TM-1E3	5	BLACK MASTIC BENEATH 12" X 12" OFF-WHITE W/BLACK STREAKS VFT	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1E Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-098	339-90TM-1E1	black	Yes	Yes	chrysotile 5	-	misc. part. 95	
339-101	339-90TM-1E2	black	Yes	Yes	chrysotile 5	-	misc. part. 95	
339-104	339-90TM-1E3	black	Yes	Yes	chrysotile 5	-	misc. part. 95	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1F	OFF-WHITE LEVELING COMPOUND		
	Drawing/Sketch Number		339-90TM-1F

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

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

#### Unified Sample Area/Homogeneous Material

OFF-WHITE LEVELING COMPOUND

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1F1, 339-90TM-1F2, 339-90TM-1F3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1F	OFF-WHITE LEVELING COMPOUND
-------------	-----------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1F1	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1
339-90TM-1F2	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1
339-90TM-1F3	0	OFF-WHITE LEVELING COMPOUND	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1F Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-099	339-90TM-1F1	tan, beige	Yes	No	-	-	misc. part. 100	
339-102	339-90TM-1F2	tan, beige	Yes	No	-	-	misc. part. 100	
339-105	339-90TM-1F3	tan, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1G	4" BLACK COVEBASE		
	Drawing/Sketch Number		339-90TM-1G

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

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

#### Unified Sample Area/Homogeneous Material

4" BLACK COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input style="width: 50px;" type="text"/>	#2	<input style="width: 50px;" type="text"/>
Square Feet of Ceiling Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Wall Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Floor Surface	<input style="width: 100%;" type="text"/>		
Linear Feet of TSI	<input style="width: 100%;" type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input style="width: 100%;" type="text"/>		
Square Feet of Other ACM	<input style="width: 100%;" type="text"/>		
Linear Feet of Other ACM	<input style="width: 100%;" type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="width: 100%; border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Visible	Reachable	Texture
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Barriers	Ventilation	If Yes
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
		Friable Surface
		<input style="width: 50px;" type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input style="width: 50px;" type="text" value="3"/>
Samples Collected by	<input style="width: 50px;" type="text" value="EMET"/>
Sample Numbers	<input style="width: 100%;" type="text" value="339-90TM-1G1, 339-90TM-1G2, 339-90TM-1G3"/>
Total Number of Samples Analyzed	<input style="width: 50px;" type="text" value="3"/>
Samples Analyzed by	<input style="width: 50px;" type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input style="width: 50px;" type="text" value="NO"/>
Number of Salient Designations:	<input style="width: 50px;" type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1G	4" BLACK COVEBASE
-------------	-------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1G1	0	4" BLACK COVEBASE	See Sketch 339-90TM-1
339-90TM-1G2	0	4" BLACK COVEBASE	See Sketch 339-90TM-1
339-90TM-1G3	0	4" BLACK COVEBASE	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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




Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory: 

Sample/Homogeneous Area: 339-90TM-1G Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-106	339-90TM-1G1	black	Yes	No	-	-	misc. part. 100	
339-108	339-90TM-1G2	black	Yes	No	-	-	misc. part. 100	
339-110	339-90TM-1G3	black	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE		
	Drawing/Sketch Number		339-90TM-1H

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

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

#### Unified Sample Area/Homogeneous Material

**BROWN ADHESIVE BENEATH 4" BLACK COVEBASE**

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1H1, 339-90TM-1H2, 339-90TM-1H3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1H1	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TM-1
339-90TM-1H2	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TM-1
339-90TM-1H3	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-107	339-90TM-1H1	brown	Yes	No	-	-	misc. part. 100	
339-109	339-90TM-1H2	brown	Yes	No	-	-	misc. part. 100	
339-111	339-90TM-1H3	brown	Yes	No	-	-	misc. part. 100	

Sample/Homogeneous Area: 339-90TM-1H Analysis Date: 4/2/2024 Report Date: 4/2/2024

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
 \*Laboratory test report relates only to items tested.  
 \*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
 \*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-11	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM		
	Drawing/Sketch Number		339-90TM-11

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

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

#### Unified Sample Area/Homogeneous Material

GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input type="text"/>		

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TM-111, 339-90TM-112, 339-90TM-113"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-11	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM
-------------	---

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-111	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TM-1
339-90TM-112	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TM-1
339-90TM-113	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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





# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-11 Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-112	339-90TM-111	brown	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-113	339-90TM-112	brown	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-114	339-90TM-113	brown	Yes	No	-	cellulose, glass 12	misc. part. 88	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1J	OFF-WHITE CAULKING AT WINDOW FRAME		
	Drawing/Sketch Number		339-90TM-1J

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

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

#### Unified Sample Area/Homogeneous Material

OFF-WHITE CAULKING AT WINDOW FRAME	Not Applicable
------------------------------------	----------------

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>	
Square Feet of Ceiling Materials	<input type="text"/>			
Square Feet of Wall Materials	<input type="text"/>			
Square Feet of Floor Surface	<input type="text"/>			
Linear Feet of TSI	<input type="text"/>			
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>			
Square Feet of Other ACM	<input type="text"/>			
Linear Feet of Other ACM	<input type="text"/>			
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="border: 2px solid black;" type="text"/>			

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Visible	Reachable	Texture
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Barriers	Ventilation	If Yes
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
		Friable Surface
		<input type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>

#### PHOTOGRAPH



#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TM-1J1, 339-90TM-1J2, 339-90TM-1J3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1J	OFF-WHITE CAULKING AT WINDOW FRAME
-------------	------------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1J1	0	OFF-WHITE CAULKING AT WINDOW FRAME	See Sketch 339-90TM-1
339-90TM-1J2	0	OFF-WHITE CAULKING AT WINDOW FRAME	See Sketch 339-90TM-1
339-90TM-1J3	0	OFF-WHITE CAULKING AT WINDOW FRAME	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1J Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-115	339-90TM-1J1	white	Yes	No	-	-	misc. part. 100	
339-116	339-90TM-1J2	white	Yes	No	-	-	misc. part. 100	
339-117	339-90TM-1J3	white	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1K	PINK SINK INSULATION		
	Drawing/Sketch Number		339-90TM-1K
	339-90TM-1	339-90TM-1	

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

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

#### Unified Sample Area/Homogeneous Material

PINK SINK INSULATION

See Sketch 339-90TM-1

underside of sink

SAMPLING STRATEGY DATA	
Ceiling Height #1	#2
Square Feet of Ceiling Materials	
Square Feet of Wall Materials	
Square Feet of Floor Surface	
Linear Feet of TSI	
Square Feet of Structural Steel Coatings (including over-spray)	
Square Feet of Other ACM	6
Linear Feet of Other ACM	
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<b>±6</b>

RISK ASSESSMENT DETERMINATION		
Physical Condition	Potential Damage	Water Damage
None	Moderate	None
Visible	Reachable	Texture
More than 10%	Within reach	smooth
Barriers	Ventilation	If Yes
None	No	No
		Category I
Air Movement	Proximity to Repair Items	Activity
Low	Less than 1 ft.	Low

SAMPLE ANALYSIS SUMMARY SECTION	
Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1K1, 339-90TM-1K2, 339-90TM-1K3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>YES</b>
Number of Salient Designations:	



### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1K	PINK SINK INSULATION
-------------	----------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1K1	7	PINK SINK INSULATION	See Sketch 339-90TM-1
339-90TM-1K2	7	PINK SINK INSULATION	See Sketch 339-90TM-1
339-90TM-1K3	7	PINK SINK INSULATION	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1K Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-118	339-90TM-1K1	pink	Yes	Yes	chrysotile 7	-	misc. part. 93	
339-119	339-90TM-1K2	pink	Yes	Yes	chrysotile 7	-	misc. part. 93	
339-120	339-90TM-1K3	pink	Yes	Yes	chrysotile 7	-	misc. part. 93	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TM	BUILDING 90T MIDDLE SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TM-1L	GRAY WINDOW GLAZING		
	Drawing/Sketch Number		339-90TM-1L

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

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

#### Unified Sample Area/Homogeneous Material

GRAY WINDOW GLAZING

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TM-1L1, 339-90TM-1L2, 339-90TM-1L3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH





### Sample Log and Notes

**Building Number and Name**

90TM	BUILDING 90T MIDDLE SECTION
------	-----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TM-1L	GRAY WINDOW GLAZING
-------------	---------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TM-1L1	0	GRAY WINDOW GLAZING	See Sketch 339-90TM-1
339-90TM-1L2	0	GRAY WINDOW GLAZING	See Sketch 339-90TM-1
339-90TM-1L3	0	GRAY WINDOW GLAZING	See Sketch 339-90TM-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T MIDDLE SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TM-1L Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-121	339-90TM-1L1	gray	Yes	No	-	-	misc. part. 100	
339-122	339-90TM-1L2	gray	Yes	No	-	-	misc. part. 100	
339-123	339-90TM-1L3	gray	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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## Building Information Sheet

<b>Job Code /EMET ID</b>	<b>Client Name</b>	<b>Inspection date</b>
2309339	Mason Architects, Inc.	3/27/2024
<b>Building Number</b>	<b>Building Name</b>	<b>No. of Floors Surveyed</b>
90TN	BUILDING 90T NORTH SECTION	2
	<b>Location</b>	<b>No. of Other Levels Surveyed</b>
	90 Enterprise St. Kapolei, HI 96707	1

<b>Building Construction Type</b>	<b>Building Use</b>	<b>% Floor Space</b>	<b>ACBM PRESENT?</b>  <div style="border: 1px solid black; padding: 5px; text-align: center; font-weight: bold;">NO</div>  YES = PRESENT NO = NOT PRESENT ASM = ASSUMED
STEEL FRAME	<b>Use #1</b> OFFICES	30	
Structural Concrete with: Metal Decks, Flat Slab, Beam/Joist or Waffle Slabs; Structural Tees Steel Frame Wood Frame Load Bearing Masonry	<b>Use #2</b> WAREHOUSE	70	
	<b>Use #3</b>		
Academic Classes, Administration Offices, Food Services, Dormitory, Mechanical Spaces, Gymnasium, Laboratory, Library, Residential or Other (Specify)			

<b>Inspector Identification</b>	<b>Specific areas surveyed</b>
<b>Name:</b> Andrew Uyeda <b>State of HI Certification No.</b> HIASB-2432 <b>State of HI Certification Expiration Date:</b> 6/1/2024 <b>Building Inspector Certification Exp. Date:</b> 12/6/2024	interior and exterior

**Inspector Comments**

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

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TN BUILDING 90T NORTH	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TN-1		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present			Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC	PD		
339-90TN-1A	12" X 12" BEIGE W/BEIGE SPECKS VFT		YES	NO ACM						
339-90TN-1B	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT		YES	NO ACM						
339-90TN-1C	4" BROWN COVEBASE		YES	NO ACM						
339-90TN-1D	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE	trace (<1%) anthophyllite	YES	NO ACM	NO	M	ND	NPD	8	
339-90TN-1E	4" OFF-WHITE COVEBASE		YES	NO ACM						
339-90TN-1F	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE		YES	NO ACM						

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type; S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition; ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition; NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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Bldg 90TM - Page 2

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TN   BUILDING 90T NORTH	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TN-1		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present			Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC	PD		
339-90TN-1G	4" BLACK COVEBASE		YES	NO ACM						
339-90TN-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE		YES	NO ACM						
339-90TN-1I	1" BROWN THRESHOLD		YES	NO ACM						
339-90TN-1J	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD		YES	NO ACM						
339-90TN-1K	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM		YES	NO ACM						
339-90TN-1L	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE		YES	NO ACM						

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type; S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition; ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition; NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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Bldg 90TM - Page 3

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

<b>Building ID and Name</b>	90TN   BUILDING 90T NORTH	<b>EMET ID</b>	2309339
<b>Building Location</b>	90 Enterprise St. Kapolei, HI 96707		
<b>For the ACM - Space Identified as:</b>	339-90TN-1		
		<b>Inspection Date(s):</b>	3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present		Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC		
339-90TN-1M	OFF-WHITE CAULKING AT DOOR FRAME		YES	NO ACM					
339-90TN-1N	BLACK EXPANSION JOINT MATERIAL		YES	NO ACM					
339-90TN-1O	BLACK VIBRATION CLOTH		YES	NO ACM					
339-90TN-1P	GRAY GROUT		YES	NO ACM					
339-90TN-1Q	GRAY MORTAR		YES	NO ACM					
339-90TN-1R	BLACK WATERPROOFING		YES	NO ACM					

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type;                  S = Surfacing                  M = Miscellaneous                  T = Thermal Systems</p> <p>DC = Damage Condition;                  ND = No Damage                  D = Damaged                  SD = Significant Damage</p> <p>PD = Potential Damage Condition;                  NPD = No Potential Damage                  PD = ACBM w/ Potential Damage                  PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1A	12" X 12" BEIGE W/BEIGE SPECKS VFT		
	Drawing/Sketch Number		339-90TN-1A

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

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

#### Unified Sample Area/Homogeneous Material

12" X 12" BEIGE W/BEIGE SPECKS VFT

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>			
			<input type="text"/>

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Visible	Reachable	Texture
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Barriers	Ventilation	If Yes
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
		Friable Surface
		<input type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TN-1A1, 339-90TN-1A2, 339-90TN-1A3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1A	12" X 12" BEIGE W/BEIGE SPECKS VFT
-------------	------------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1A1	0	12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1
339-90TN-1A2	0	12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1
339-90TN-1A3	0	12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1A Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-013	339-90TN-1A1	beige	Yes	No	-	-	misc. part. 100	
339-015	339-90TN-1A2	beige	Yes	No	-	-	misc. part. 100	
339-017	339-90TN-1A3	beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1B	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT		
	Drawing/Sketch Number		339-90TN-1B

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

#### Unified Sample Area/Homogeneous Material

BLACK ADHESIVE BENEATH 12" X 12" BEIGE  
W/BEIGE SPECKS VFT

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

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TN-1B1, 339-90TN-1B2, 339-90TN-1B3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
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**Sample Area/Lot Number and Name**

339-90TN-1B	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT
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Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1B1	0	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1
339-90TN-1B2	0	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1
339-90TN-1B3	0	BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/BEIGE SPECKS VFT	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1B Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-014	339-90TN-1B1	black	Yes	No	-	-	misc. part. 100	
339-016	339-90TN-1B2	black	Yes	No	-	-	misc. part. 100	
339-018	339-90TN-1B3	black	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1C	4" BROWN COVEBASE		
	Drawing/Sketch Number		339-90TN-1C

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

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

#### Unified Sample Area/Homogeneous Material

4" BROWN COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1C1, 339-90TN-1C2, 339-90TN-1C3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	NO
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
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**EMET ID**

2309339
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**Sample Area/Lot Number and Name**

339-90TN-1C	4" BROWN COVEBASE
-------------	-------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1C1	0	4" BROWN COVEBASE	See Sketch 339-90TN-1
339-90TN-1C2	0	4" BROWN COVEBASE	See Sketch 339-90TN-1
339-90TN-1C3	0	4" BROWN COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1C Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-019	339-90TN-1C1	brown	Yes	No	-	-	misc. part. 100	
339-021	339-90TN-1C2	brown	Yes	No	-	-	misc. part. 100	
339-023	339-90TN-1C3	brown	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1D	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE		
	Drawing/Sketch Number		339-90TN-1D

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

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

#### Unified Sample Area/Homogeneous Material

**BROWN ADHESIVE BENEATH 4" BROWN COVEBASE**

trace (<1%) anthophyllite

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1		#2	
Square Feet of Ceiling Materials			
Square Feet of Wall Materials			
Square Feet of Floor Surface			
Linear Feet of TSI			
Square Feet of Structural Steel Coatings (including over-spray)			
Square Feet of Other ACM			
Linear Feet of Other ACM			35
<b>Total square and/or linear feet of ACM in this Sample Space:</b>			<b>±35</b>

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1D1, 339-90TN-1D2, 339-90TN-1D3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH





### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1D	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1D1	< 1	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-1
339-90TN-1D2	< 1	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-1
339-90TN-1D3	< 1	BROWN ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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




Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory: 

Sample/Homogeneous Area: 339-90TN-1D Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-020	339-90TN-1D1	brown	Yes	Yes	anthophyllite < 1	wollastonite 2	misc. part. 97	
339-022	339-90TN-1D2	brown	Yes	Yes	anthophyllite < 1	wollastonite 2	misc. part. 97	
339-024	339-90TN-1D3	brown	Yes	Yes	anthophyllite < 1	wollastonite 2	misc. part. 97	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TN-1E	4" OFF-WHITE COVEBASE	
	Drawing/Sketch Number		339-90TN-1E

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

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

#### Unified Sample Area/Homogeneous Material

4" OFF-WHITE COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1E1, 339-90TN-1E2, 339-90TN-1E3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1E	4" OFF-WHITE COVEBASE
-------------	-----------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1E1	0	4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1
339-90TN-1E2	0	4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1
339-90TN-1E3	0	4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1E Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-025	339-90TN-1E1	white	Yes	No	-	-	misc. part. 100	
339-027	339-90TN-1E2	white	Yes	No	-	-	misc. part. 100	
339-029	339-90TN-1E3	white	Yes	No	-	-	misc. part. 100	

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1F	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE		
	Drawing/Sketch Number		339-90TN-1F

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

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

#### Unified Sample Area/Homogeneous Material

BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1F1, 339-90TN-1F2, 339-90TN-1F3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1F	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1F1	0	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1
339-90TN-1F2	0	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1
339-90TN-1F3	0	BEIGE ADHESIVE BENEATH 4" OFF-WHITE COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1F Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-026	339-90TN-1F1	beige	Yes	No	-	-	misc. part. 100	
339-028	339-90TN-1F2	beige	Yes	No	-	-	misc. part. 100	
339-030	339-90TN-1F3	beige	Yes	No	-	-	misc. part. 100	

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1G	4" BLACK COVEBASE		
	Drawing/Sketch Number		339-90TN-1G

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

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

#### Unified Sample Area/Homogeneous Material

4" BLACK COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1G1, 339-90TN-1G2, 339-90TN-1G3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1G	4" BLACK COVEBASE
-------------	-------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1G1	0	4" BLACK COVEBASE	See Sketch 339-90TN-1
339-90TN-1G2	0	4" BLACK COVEBASE	See Sketch 339-90TN-1
339-90TN-1G3	0	4" BLACK COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1G Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-031	339-90TN-1G1	black	No	-	-	misc. part. 100	
339-033	339-90TN-1G2	black	No	-	-	misc. part. 100	
339-035	339-90TN-1G3	black	No	-	-	misc. part. 100	

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Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE		
	Drawing/Sketch Number		339-90TN-1H

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

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

#### Unified Sample Area/Homogeneous Material

BROWN ADHESIVE BENEATH 4" BLACK COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1H1, 339-90TN-1H2, 339-90TN-1H3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1H	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1H1	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TN-1
339-90TN-1H2	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TN-1
339-90TN-1H3	0	BROWN ADHESIVE BENEATH 4" BLACK COVEBASE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-032	339-90TN-1H1	brown	Yes	No	-	-	misc. part. 100	
339-034	339-90TN-1H2	brown	Yes	No	-	-	misc. part. 100	
339-036	339-90TN-1H3	brown	Yes	No	-	-	misc. part. 100	

Sample/Homogeneous Area: 339-90TN-1H Analysis Date: 4/2/2024 Report Date: 4/2/2024

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
 \*Laboratory test report relates only to items tested.  
 \*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
 \*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1I	1" BROWN THRESHOLD		
	Drawing/Sketch Number		339-90TN-1I

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

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

#### Unified Sample Area/Homogeneous Material

1" BROWN THRESHOLD

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1I1, 339-90TN-1I2, 339-90TN-1I3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1I	1" BROWN THRESHOLD
-------------	--------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1I1	0	1" BROWN THRESHOLD	See Sketch 339-90TN-1
339-90TN-1I2	0	1" BROWN THRESHOLD	See Sketch 339-90TN-1
339-90TN-1I3	0	1" BROWN THRESHOLD	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979



# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-11 Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-037	339-90TN-111	brown	Yes	No	-	-	misc. part. 100	
339-039	339-90TN-112	brown	Yes	No	-	-	misc. part. 100	
339-041	339-90TN-113	brown	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

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 \*Laboratory test report relates only to items tested.  
 \*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
 \*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1J	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD		
	Drawing/Sketch Number		339-90TN-1J

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

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

#### Unified Sample Area/Homogeneous Material

**YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD**

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1J1, 339-90TN-1J2, 339-90TN-1J3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1J	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1J1	0	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD	See Sketch 339-90TN-1
339-90TN-1J2	0	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD	See Sketch 339-90TN-1
339-90TN-1J3	0	YELLOW ADHESIVE BENEATH 1" BROWN THRESHOLD	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1J Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-038	339-90TN-1J1	yellow	Yes	No	-	-	misc. part. 100	
339-040	339-90TN-1J2	yellow	Yes	No	-	-	misc. part. 100	
339-042	339-90TN-1J3	yellow	Yes	No	-	-	misc. part. 100	

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\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1K	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM		
	Drawing/Sketch Number		339-90TN-1K

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

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

#### Unified Sample Area/Homogeneous Material

GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM
---------------------------------------

Not Applicable
----------------

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1K1, 339-90TN-1K2, 339-90TN-1K3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1K	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM
-------------	---------------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1K1	0	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-1
339-90TN-1K2	0	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-1
339-90TN-1K3	0	GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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



Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1K Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-043	339-90TN-1K1	brown, tan	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-044	339-90TN-1K2	brown, tan	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-045	339-90TN-1K3	white, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1L	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE		
	Drawing/Sketch Number		339-90TN-1L

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

#### Unified Sample Area/Homogeneous Material

2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE

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

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input style="width: 50px;" type="text"/>	#2	<input style="width: 50px;" type="text"/>
Square Feet of Ceiling Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Wall Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Floor Surface	<input style="width: 100%;" type="text"/>		
Linear Feet of TSI	<input style="width: 100%;" type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input style="width: 100%;" type="text"/>		
Square Feet of Other ACM	<input style="width: 100%;" type="text"/>		
Linear Feet of Other ACM	<input style="width: 100%;" type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="width: 100%; border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Visible	Reachable	Texture
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Barriers	Ventilation	If Yes
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
		Friable Surface
		<input style="width: 50px;" type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input style="width: 50px;" type="text" value="3"/>
Samples Collected by	<input style="width: 50px;" type="text" value="EMET"/>
Sample Numbers	<input style="width: 100%;" type="text" value="339-90TN-1L1, 339-90TN-1L2, 339-90TN-1L3"/>
Total Number of Samples Analyzed	<input style="width: 50px;" type="text" value="3"/>
Samples Analyzed by	<input style="width: 50px;" type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input style="width: 50px;" type="text" value="NO"/>
Number of Salient Designations:	<input style="width: 50px;" type="text"/>

#### PHOTOGRAPH





### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1L	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1L1	0	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE	See Sketch 339-90TN-1
339-90TN-1L2	0	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE	See Sketch 339-90TN-1
339-90TN-1L3	0	2' X 4' OFF-WHITE FISSURED PINHOLE ACOUSTICAL CEILING TILE	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1L Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-046	339-90TN-1L1	gray, white	Yes	No	-	cellulose, min. wool 80	misc. part. 20	
339-047	339-90TN-1L2	gray, white	Yes	No	-	cellulose, min. wool 80	misc. part. 20	
339-048	339-90TN-1L3	gray, white	Yes	No	-	cellulose, min. wool 80	misc. part. 20	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1M	OFF-WHITE CAULKING AT DOOR FRAME		
	Drawing/Sketch Number		339-90TN-1M

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

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

#### Unified Sample Area/Homogeneous Material

OFF-WHITE CAULKING AT DOOR FRAME

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1M1, 339-90TN-1M2, 339-90TN-1M3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1M	OFF-WHITE CAULKING AT DOOR FRAME
-------------	----------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1M1	0	OFF-WHITE CAULKING AT DOOR FRAME	See Sketch 339-90TN-1
339-90TN-1M2	0	OFF-WHITE CAULKING AT DOOR FRAME	See Sketch 339-90TN-1
339-90TN-1M3	0	OFF-WHITE CAULKING AT DOOR FRAME	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-049	339-90TN-1M1	white	Yes	No	-	-	misc. part. 100	
339-050	339-90TN-1M2	white	Yes	No	-	-	misc. part. 100	
339-051	339-90TN-1M3	white	Yes	No	-	-	misc. part. 100	

Sample/Homogeneous Area: 339-90TN-1M Analysis Date: 4/2/2024 Report Date: 4/2/2024

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TN-1N	BLACK EXPANSION JOINT MATERIAL	
	Drawing/Sketch Number		339-90TN-1N

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

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

#### Unified Sample Area/Homogeneous Material

BLACK EXPANSION JOINT MATERIAL

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### PHOTOGRAPH



#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1N1, 339-90TN-1N2, 339-90TN-1N3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1N	BLACK EXPANSION JOINT MATERIAL
-------------	--------------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1N1	0	BLACK EXPANSION JOINT MATERIAL	See Sketch 339-90TN-1
339-90TN-1N2	0	BLACK EXPANSION JOINT MATERIAL	See Sketch 339-90TN-1
339-90TN-1N3	0	BLACK EXPANSION JOINT MATERIAL	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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# LABORATORY REPORT

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



NVLAP LAB CODE 101807-0

Client: Mason Architects, Inc. Building: BUILDING 90T NORTH SECTION

Address: 119 Merchant Street, Suite 501 Honolulu, HI 96813 Address: 90 Enterprise St. Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1N Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-052	339-90TN-1N1	black	Yes	No	-	cellulose 80	misc. part. 20	
339-053	339-90TN-1N2	black	Yes	No	-	cellulose 80	misc. part. 20	
339-054	339-90TN-1N3	black	Yes	No	-	cellulose 80	misc. part. 20	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1O	BLACK VIBRATION CLOTH		
	Drawing/Sketch Number		339-90TN-1O

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

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

#### Unified Sample Area/Homogeneous Material

**BLACK VIBRATION CLOTH**

Not Applicable

#### SAMPLING STRATEGY DATA

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

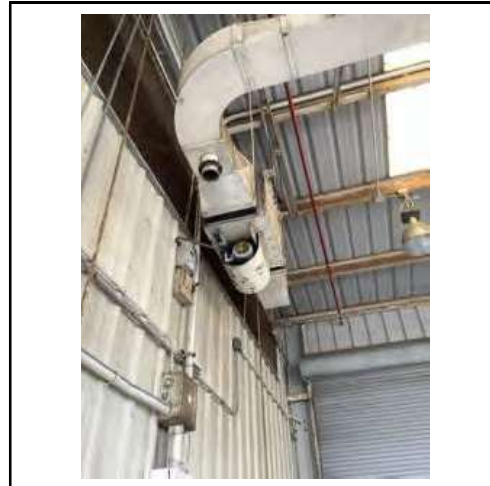
#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1O1, 339-90TN-1O2, 339-90TN-1O3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1O	BLACK VIBRATION CLOTH
-------------	-----------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1O1	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-1
339-90TN-1O2	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-1
339-90TN-1O3	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-10      Analysis Date: 4/2/2024      Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-055	339-90TN-101	black	Yes	No	-	synthetic 30	misc. part. 70	
339-056	339-90TN-102	black	Yes	No	-	synthetic 30	misc. part. 70	
339-057	339-90TN-103	black	Yes	No	-	synthetic 30	misc. part. 70	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1P	GRAY GROUT		
	Drawing/Sketch Number		339-90TN-1P

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

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

#### Unified Sample Area/Homogeneous Material

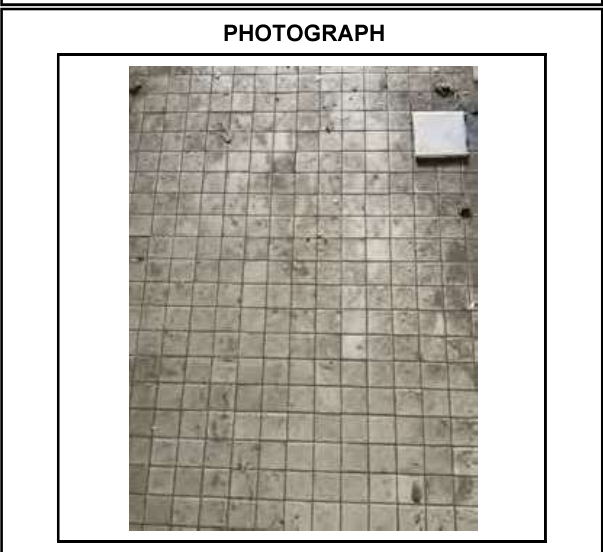
GRAY GROUT

Not Applicable

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

RISK ASSESSMENT DETERMINATION		
Physical Condition	Potential Damage	Water Damage
--	--	--
Visible	Reachable	Texture
--	--	--
Barriers	Ventilation	If Yes
--	--	--
		Friable Surface
		--
Air Movement	Proximity to Repair Items	Activity
--	--	--

SAMPLE ANALYSIS SUMMARY SECTION	
Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1P1, 339-90TN-1P2, 339-90TN-1P3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1P	GRAY GROUT
-------------	------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1P1	0	GRAY GROUT	See Sketch 339-90TN-1
339-90TN-1P2	0	GRAY GROUT	See Sketch 339-90TN-1
339-90TN-1P3	0	GRAY GROUT	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT

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




Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory: 

Sample/Homogeneous Area: 339-90TN-1P Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-058	339-90TN-1P1	gray	Yes	No	-	-	misc. part. 100	
339-059	339-90TN-1P2	gray	Yes	No	-	-	misc. part. 100	
339-060	339-90TN-1P3	gray	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1Q	GRAY MORTAR		
	Drawing/Sketch Number		339-90TN-1Q

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

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

#### Unified Sample Area/Homogeneous Material

GRAY MORTAR

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1Q1, 339-90TN-1Q2, 339-90TN-1Q3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-1Q	GRAY MORTAR
-------------	-------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1Q1	0	GRAY MORTAR	See Sketch 339-90TN-1
339-90TN-1Q2	0	GRAY MORTAR	See Sketch 339-90TN-1
339-90TN-1Q3	0	GRAY MORTAR	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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





# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1Q      Analysis Date: 4/2/2024      Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-061	339-90TN-1Q1	gray	Yes	No	-	-	misc. part. 100	
339-062	339-90TN-1Q2	gray	Yes	No	-	-	misc. part. 100	
339-063	339-90TN-1Q3	gray	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-1R	BLACK WATERPROOFING		
	Drawing/Sketch Number		339-90TN-1R

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

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

#### Unified Sample Area/Homogeneous Material

**BLACK WATERPROOFING**

Not Applicable

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

RISK ASSESSMENT DETERMINATION		
Physical Condition	Potential Damage	Water Damage
--	--	--
Visible	Reachable	Texture
--	--	--
Barriers	Ventilation	If Yes
--	--	--
		Friable Surface
		--
Air Movement	Proximity to Repair Items	Activity
--	--	--

SAMPLE ANALYSIS SUMMARY SECTION	
Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-1R1, 339-90TN-1R2, 339-90TN-1R3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
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**Sample Area/Lot Number and Name**

339-90TN-1R	BLACK WATERPROOFING
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Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-1R1	0	BLACK WATERPROOFING	See Sketch 339-90TN-1
339-90TN-1R2	0	BLACK WATERPROOFING	See Sketch 339-90TN-1
339-90TN-1R3	0	BLACK WATERPROOFING	See Sketch 339-90TN-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-1R Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-064	339-90TN-1R1	black	Yes	No	-	glass 2	misc. part. 98	
339-065	339-90TN-1R2	black	Yes	No	-	glass 2	misc. part. 98	
339-066	339-90TN-1R3	black	Yes	No	-	glass 2	misc. part. 98	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TN   BUILDING 90T NORTH	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TN-M		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present		Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC		
339-90TN-MA	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM		YES	NO ACM					
339-90TN-MB	BLACK VIBRATION CLOTH		YES	NO ACM					
339-90TN-MC	4" BROWN COVEBASE		YES	NO ACM					
339-90TN-MD	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE		YES	NO ACM					

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type:                  S = Surfacing                  M = Miscellaneous                  T = Thermal Systems</p> <p>DC = Damage Condition:                  ND = No Damage                  D = Damaged                  SD = Significant Damage</p> <p>PD = Potential Damage Condition:                  NPD = No Potential Damage                  PD = ACBM w/ Potential Damage                  PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TN-MA	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	
	Drawing/Sketch Number		339-90TN-MA

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

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

#### Unified Sample Area/Homogeneous Material

WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-MA1, 339-90TN-MA2, 339-90TN-MA3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
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**EMET ID**

2309339
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**Sample Area/Lot Number and Name**

339-90TN-MA	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM
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Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-MA1	0	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-M
339-90TN-MA2	0	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-M
339-90TN-MA3	0	WHITE GYPSUM WALLBOARD/MUDJOINT WALL SYSTEM	See Sketch 339-90TN-M

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-MA Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-001	339-90TN-MA1	brown, white	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-002	339-90TN-MA2	brown, white	Yes	No	-	cellulose, glass 12	misc. part. 88	
339-003	339-90TN-MA3	brown, white	Yes	No	-	cellulose, glass 12	misc. part. 88	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-MB	BLACK VIBRATION CLOTH		
	Drawing/Sketch Number		339-90TN-MB

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

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

#### Unified Sample Area/Homogeneous Material

**BLACK VIBRATION CLOTH**

Not Applicable

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

RISK ASSESSMENT DETERMINATION		
Physical Condition	Potential Damage	Water Damage
--	--	--
Visible	Reachable	Texture
--	--	--
Barriers	Ventilation	If Yes
--	--	--
		Friable Surface
		--
Air Movement	Proximity to Repair Items	Activity
--	--	--

SAMPLE ANALYSIS SUMMARY SECTION	
Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-MB1, 339-90TN-MB2, 339-90TN-MB3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-MB	BLACK VIBRATION CLOTH
-------------	-----------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-MB1	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-M
339-90TN-MB2	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-M
339-90TN-MB3	0	BLACK VIBRATION CLOTH	See Sketch 339-90TN-M

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-MB Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-004	339-90TN-MB1	black, clear	Yes	No	-	synthetic 15	misc. part. 85	
339-005	339-90TN-MB2	black, clear	Yes	No	-	synthetic 15	misc. part. 85	
339-006	339-90TN-MB3	black, clear	Yes	No	-	synthetic 15	misc. part. 85	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TN-MC	4" BROWN COVEBASE	
	Drawing/Sketch Number		339-90TN-MC

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

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

#### Unified Sample Area/Homogeneous Material

4" BROWN COVEBASE

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input style="width: 50px;" type="text"/>	#2	<input style="width: 50px;" type="text"/>
Square Feet of Ceiling Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Wall Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Floor Surface	<input style="width: 100%;" type="text"/>		
Linear Feet of TSI	<input style="width: 100%;" type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input style="width: 100%;" type="text"/>		
Square Feet of Other ACM	<input style="width: 100%;" type="text"/>		
Linear Feet of Other ACM	<input style="width: 100%;" type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="width: 100%; border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
Visible	Reachable	Texture
<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
Barriers	Ventilation	If Yes
<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>
		Friable Surface
		<input style="width: 50px;" type="text"/>
Air Movement	Proximity to Repair Items	Activity
<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>	<input style="width: 50px;" type="text"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input style="width: 50px;" type="text" value="3"/>
Samples Collected by	<input style="width: 50px;" type="text" value="EMET"/>
Sample Numbers	<input style="width: 100%;" type="text" value="339-90TN-MC1, 339-90TN-MC2, 339-90TN-MC3"/>
Total Number of Samples Analyzed	<input style="width: 50px;" type="text" value="3"/>
Samples Analyzed by	<input style="width: 50px;" type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input style="width: 50px;" type="text" value="NO"/>
Number of Salient Designations:	<input style="width: 50px;" type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-MC	4" BROWN COVEBASE
-------------	-------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-MC1	0	4" BROWN COVEBASE	See Sketch 339-90TN-M
339-90TN-MC2	0	4" BROWN COVEBASE	See Sketch 339-90TN-M
339-90TN-MC3	0	4" BROWN COVEBASE	See Sketch 339-90TN-M

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TN-MC Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Asbestos Detected	Homogeneity	Yes	No	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-007	339-90TN-MC1	brown	No	Yes	-	-	-	-	misc. part. 100	
339-009	339-90TN-MC2	brown	No	Yes	-	-	-	-	misc. part. 100	
339-011	339-90TN-MC3	brown	No	Yes	-	-	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TN	BUILDING 90T NORTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TN-MD	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE		
	Drawing/Sketch Number		339-90TN-MD

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

#### Unified Sample Area/Homogeneous Material

BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE

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

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TN-MD1, 339-90TN-MD2, 339-90TN-MD3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TN	BUILDING 90T NORTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TN-MD	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TN-MD1	0	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-M
339-90TN-MD2	0	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-M
339-90TN-MD3	0	BEIGE ADHESIVE BENEATH 4" BROWN COVEBASE	See Sketch 339-90TN-M

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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



# LABORATORY REPORT

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




Client: Mason Architects, Inc.

Building: BUILDING 90T NORTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory: 

Sample/Homogeneous Area: 339-90TN-MD Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-008	339-90TN-MD1	beige	No	-	-	misc. part. 100	
339-010	339-90TN-MD2	beige	No	-	-	misc. part. 100	
339-012	339-90TN-MD3	beige	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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## Building Information Sheet

<b>Job Code /EMET ID</b>	<b>Client Name</b>	<b>Inspection date</b>
2309339	Mason Architects, Inc.	3/27/2024
<b>Building Number</b>	<b>Building Name</b>	<b>No. of Floors Surveyed</b>
90TS	BUILDING 90T SOUTH SECTION	1
	<b>Location</b>	<b>No. of Other Levels Surveyed</b>
	90 Enterprise St. Kapolei, HI 96707	1

<b>Building Construction Type</b>	<b>Building Use</b>	<b>% Floor Space</b>	<b>ACBM PRESENT?</b>  <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">NO</div> YES = PRESENT NO = NOT PRESENT ASM = ASSUMED
STEEL FRAME	<b>Use #1</b> WAREHOUSE	100	
Structural Concrete with: Metal Decks, Flat Slab, Beam/Joist or Waffle Slabs; Structural Tees Steel Frame Wood Frame Load Bearing Masonry	<b>Use #2</b>		
	<b>Use #3</b>		
	Academic Classes, Administration Offices, Food Services, Dormitory, Mechanical Spaces, Gymnasium, Laboratory, Library, Residential or Other (Specify)		

<b>Inspector Identification</b>	<b>Specific areas surveyed</b>
<b>Name:</b> Andrew Uyeda <b>State of HI Certification No.</b> HIASB-2432 <b>State of HI Certification Expiration Date:</b> 6/1/2024 <b>Building Inspector Certification Exp. Date:</b> 12/6/2024	interior and exterior

**Inspector Comments**

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

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TS BUILDING 90T SOUTH	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TS-1		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present		Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC		
339-90TS-1A	12" X 12" BEIGE W/GRAY SPECKS VFT		YES	NO ACM					
339-90TS-1B	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT		YES	NO ACM					
339-90TS-1C	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM		YES	NO ACM					
339-90TS-1D(L1)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION		YES	NO ACM					
339-90TS-1D(L2)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION		YES	NO ACM					
339-90TS-1E	OFF-WHITE SINK INSULATION		YES	NO ACM					

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type; S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition; ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition; NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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Bldg 90TS - Page 2

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

<b>Building ID and Name</b>	<b>Building Location</b>	<b>EMET ID</b>
90TS BUILDING 90T SOUTH	90 Enterprise St. Kapolei, HI 96707	2309339
<b>For the ACM - Space Identified as:</b>		<b>Inspection Date(s):</b>
339-90TS-1		3/27/2024

Unified Sample Area	Homogeneous Sample Area or Salient Description	Comments	ACBM Present		Material Type*			Response Action	Estimated Cost to Remove
			Suspected	Confirmed	Friable	T	DC		
339-90TS-1F	GRAY CAULKING AT DUCT SEAMS		YES	NO ACM					

<p><b>* Refers to Material Type and Damage Conditions</b></p> <p>T = Material Type: S = Surfacing M = Miscellaneous T = Thermal Systems</p> <p>DC = Damage Condition: ND = No Damage D = Damaged SD = Significant Damage</p> <p>PD = Potential Damage Condition: NPD = No Potential Damage PD = ACBM w/ Potential Damage PSD = Potential Significant Damage</p>	<p><b>** Recommended Response Actions:</b></p> <ol style="list-style-type: none"> <li>1. Isolate area and restrict access. Remove or repair ASAP.</li> <li>2. Continue Operations and Maintenance (O&amp;M) program. Remove or repair ASAP or reduce potential for disturbance.</li> <li>3-5. Repair, continue O&amp;M. Lower number indicates higher priority if all repair cannot be done immediately.</li> <li>6-7. Continue O&amp;M. Take preventive measures to reduce disturbance. Number indicates priority for removal.</li> <li>8. Continue O&amp;M until major renovation or demolition requires removal under NESHAPS, or until hazard assessment factors change. Note: An O&amp;M program may include enclosure and encapsulation.</li> </ol>
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Bldg 90TS - Page 3

### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TS-1A	12" X 12" BEIGE W/GRAY SPECKS VFT		
	Drawing/Sketch Number		339-90TS-1A

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

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

#### Unified Sample Area/Homogeneous Material

12" X 12" BEIGE W/GRAY SPECKS VFT

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>			
			<input type="text"/>

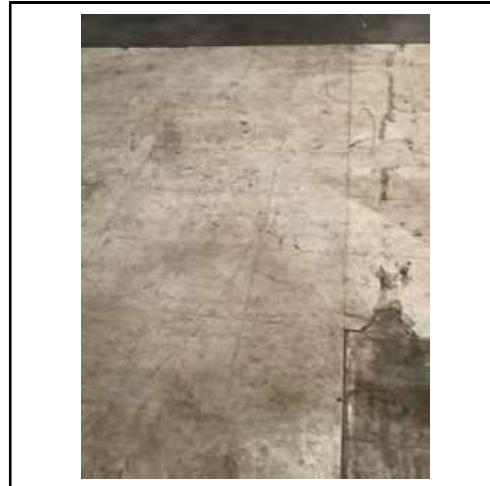
#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Visible	Reachable	Texture
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Barriers	Ventilation	If Yes
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
		Friable Surface
		<input type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	339-90TS-1A1, 339-90TS-1A2, 339-90TS-1A3
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1A	12" X 12" BEIGE W/GRAY SPECKS VFT
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Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1A1	0	12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1
339-90TS-1A2	0	12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1
339-90TS-1A3	0	12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1A Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-067	339-90TS-1A1	gray, beige	Yes	No	-	-	misc. part. 100	
339-069	339-90TS-1A2	gray, beige	Yes	No	-	-	misc. part. 100	
339-071	339-90TS-1A3	gray, beige	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
 \*Laboratory test report relates only to items tested.  
 \*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
 \*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TS-1B	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT	
	Drawing/Sketch Number		339-90TS-1B

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

#### Unified Sample Area/Homogeneous Material

YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT

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

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>	
Square Feet of Ceiling Materials	<input type="text"/>			
Square Feet of Wall Materials	<input type="text"/>			
Square Feet of Floor Surface	<input type="text"/>			
Linear Feet of TSI	<input type="text"/>			
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>			
Square Feet of Other ACM	<input type="text"/>			
Linear Feet of Other ACM	<input type="text"/>			
<b>Total square and/or linear feet of ACM in this Sample Space:</b>				
<input style="border: 2px solid black;" type="text"/>				

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Visible	Reachable	Texture
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Barriers	Ventilation	If Yes
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
		Friable Surface
		<input type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TS-1B1, 339-90TS-1B2, 339-90TS-1B3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH





### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1B	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT
-------------	--

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1B1	0	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1
339-90TS-1B2	0	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1
339-90TS-1B3	0	YELLOW/BLACK ADHESIVE BENEATH 12" X 12" BEIGE W/GRAY SPECKS VFT	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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Phone (808) 671-8383 Fax (808) 671-7979



# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1B Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-068	339-90TS-1B1	yellow, black	Yes	No	-	-	misc. part. 100	
339-070	339-90TS-1B2	yellow, black	Yes	No	-	-	misc. part. 100	
339-072	339-90TS-1B3	yellow, black	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TS-1C	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM		
	Drawing/Sketch Number		339-90TS-1C

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

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

#### Unified Sample Area/Homogeneous Material

GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="border: 2px solid black;" type="text"/>		

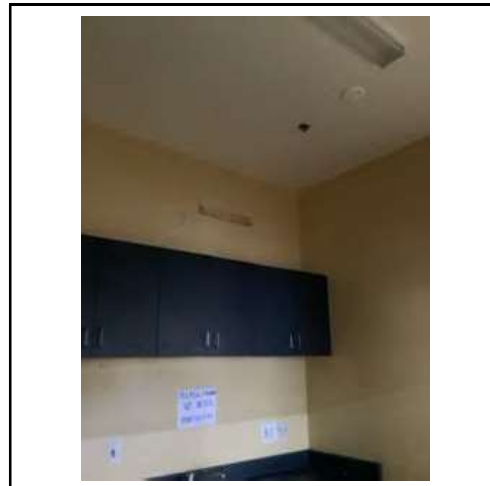
#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TS-1C1, 339-90TS-1C2, 339-90TS-1C3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1C	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM
-------------	---

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1C1	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TS-1
339-90TS-1C2	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TS-1
339-90TS-1C3	0	GYPSUM WALLBOARD/MUDJOINT WALL AND CEILING SYSTEM	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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 Phone (808) 671-8383 Fax (808) 671-7979

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1C Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-073	339-90TS-1C1	white, brown	Yes	No	-	cellulose 5	misc. part. 95	
339-074	339-90TS-1C2	white, brown	Yes	No	-	cellulose 5	misc. part. 95	
339-075	339-90TS-1C3	white, brown	Yes	No	-	cellulose, glass 12	misc. part. 88	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TS-1D (L1)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	
	Drawing/Sketch Number		339-90TS-1D(L1)

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

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

#### Unified Sample Area/Homogeneous Material

SILVER WRAP W/YELLOW INSULATION WALL INSULATION

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TS-1D(L1)1, 339-90TS-1D(L1)2, 339-90TS-1D(L1)3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1D(L1)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION
-----------------	---

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1D(L1)1	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1
339-90TS-1D(L1)2	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1
339-90TS-1D(L1)3	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1D(L1) Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-076	339-90TS-1D (L1)1	brown, silver	Yes	No	-	cellulose, glass 45	misc. part. 55	
339-078	339-90TS-1D (L1)2	brown, silver	Yes	No	-	cellulose, glass 45	misc. part. 55	
339-080	339-90TS-1D (L1)3	brown, silver	Yes	No	-	cellulose, glass 45	misc. part. 55	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of file or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
	339-90TS-1D (L2)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	
	Drawing/Sketch Number		339-90TS-1D(L2)

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

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

#### Unified Sample Area/Homogeneous Material

SILVER WRAP W/YELLOW INSULATION WALL INSULATION

Not Applicable

#### SAMPLING STRATEGY DATA

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

#### RISK ASSESSMENT DETERMINATION

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

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	3
Samples Collected by	EMET
Sample Numbers	339-90TS-1D(L2)1, 339-90TS-1D(L2)2, 339-90TS-1D(L2)3
Total Number of Samples Analyzed	3
Samples Analyzed by	EMET
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<b>NO</b>
Number of Salient Designations:	

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1D(L2)	SILVER WRAP W/YELLOW INSULATION WALL INSULATION
-----------------	---

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1D(L2)1	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1
339-90TS-1D(L2)2	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1
339-90TS-1D(L2)3	0	SILVER WRAP W/YELLOW INSULATION WALL INSULATION	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1D(L2) Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-077	339-90TS-1D (L2)1	white, yellow	Yes	No	-	glass 99	misc. part. 1	
339-079	339-90TS-1D (L2)2	white, yellow	Yes	No	-	glass 99	misc. part. 1	
339-081	339-90TS-1D (L2)3	gray	Yes	No	-	glass 99	misc. part. 1	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.  
\*Laboratory test report relates only to items tested.  
\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.  
\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TS-1E	OFF-WHITE SINK INSULATION		
	Drawing/Sketch Number		339-90TS-1E

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

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

#### Unified Sample Area/Homogeneous Material

OFF-WHITE SINK INSULATION

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input style="width: 50px;" type="text"/>	#2	<input style="width: 50px;" type="text"/>
Square Feet of Ceiling Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Wall Materials	<input style="width: 100%;" type="text"/>		
Square Feet of Floor Surface	<input style="width: 100%;" type="text"/>		
Linear Feet of TSI	<input style="width: 100%;" type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input style="width: 100%;" type="text"/>		
Square Feet of Other ACM	<input style="width: 100%;" type="text"/>		
Linear Feet of Other ACM	<input style="width: 100%;" type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>	<input style="width: 100%; border: 2px solid black;" type="text"/>		

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Visible	Reachable	Texture
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
Barriers	Ventilation	If Yes
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>
		Friable Surface
		<input style="width: 50px;" type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>	<input style="width: 50px;" type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input style="width: 50px;" type="text" value="3"/>
Samples Collected by	<input style="width: 50px;" type="text" value="EMET"/>
Sample Numbers	<input style="width: 100%;" type="text" value="339-90TS-1E1, 339-90TS-1E2, 339-90TS-1E3"/>
Total Number of Samples Analyzed	<input style="width: 50px;" type="text" value="3"/>
Samples Analyzed by	<input style="width: 50px;" type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input style="width: 50px;" type="text" value="NO"/>
Number of Salient Designations:	<input style="width: 50px;" type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1E	OFF-WHITE SINK INSULATION
-------------	---------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1E1	0	OFF-WHITE SINK INSULATION	See Sketch 339-90TS-1
339-90TS-1E2	0	OFF-WHITE SINK INSULATION	See Sketch 339-90TS-1
339-90TS-1E3	0	OFF-WHITE SINK INSULATION	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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

# LABORATORY REPORT



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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Address: 90 Enterprise St.  
Kapolei, HI 96707

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1E Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-082	339-90TS-1E1	beige	Yes	No	-	cellulose 40	misc. part. 60	
339-083	339-90TS-1E2	beige	Yes	No	-	cellulose 40	misc. part. 60	
339-084	339-90TS-1E3	beige	Yes	No	-	cellulose 40	misc. part. 60	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

Note: EPA, OSHA, and HIOSH define "asbestos-containing material" as any material or product which contains more than one percent asbestos.

\*Laboratory test report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

\*Laboratory test report relates only to items tested.

\*Asbestos fiber percentage is approximate - performed by visual observation only, unless otherwise indicated.

\*This method is not reliable for analysis of tile or other materials when fiber size is less than 10 microns and/or below detection limit (appr. 1%) of current PLM techniques.

\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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### Sample Area Report - Area Master

EMET ID	Building Number and Name		Inspection Date
2309339	90TS	BUILDING 90T SOUTH SECTION	3/27/2024
Document Number	Material ID and Description		Unified Sample Area Number
339-90TS-1F	GRAY CAULKING AT DUCT SEAMS		
	Drawing/Sketch Number		339-90TS-1F

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

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

#### Unified Sample Area/Homogeneous Material

GRAY CAULKING AT DUCT SEAMS

Not Applicable

#### SAMPLING STRATEGY DATA

Ceiling Height #1	<input type="text"/>	#2	<input type="text"/>
Square Feet of Ceiling Materials	<input type="text"/>		
Square Feet of Wall Materials	<input type="text"/>		
Square Feet of Floor Surface	<input type="text"/>		
Linear Feet of TSI	<input type="text"/>		
Square Feet of Structural Steel Coatings (including over-spray)	<input type="text"/>		
Square Feet of Other ACM	<input type="text"/>		
Linear Feet of Other ACM	<input type="text"/>		
<b>Total square and/or linear feet of ACM in this Sample Space:</b>			
<input style="border: 2px solid black;" type="text"/>			

#### RISK ASSESSMENT DETERMINATION

Physical Condition	Potential Damage	Water Damage
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Visible	Reachable	Texture
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
Barriers	Ventilation	If Yes
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>
		Friable Surface
		<input type="text" value="--"/>
Air Movement	Proximity to Repair Items	Activity
<input type="text" value="--"/>	<input type="text" value="--"/>	<input type="text" value="--"/>

#### SAMPLE ANALYSIS SUMMARY SECTION

Total Number of Samples Collected	<input type="text" value="3"/>
Samples Collected by	<input type="text" value="EMET"/>
Sample Numbers	<input type="text" value="339-90TS-1F1, 339-90TS-1F2, 339-90TS-1F3"/>
Total Number of Samples Analyzed	<input type="text" value="3"/>
Samples Analyzed by	<input type="text" value="EMET"/>
<b>ASBESTOS-CONTAINING MATERIAL ?</b>	<input type="text" value="NO"/>
Number of Salient Designations:	<input type="text"/>

#### PHOTOGRAPH



### Sample Log and Notes

**Building Number and Name**

90TS	BUILDING 90T SOUTH SECTION
------	----------------------------


**EMET ID**

2309339
---------

**Sample Area/Lot Number and Name**

339-90TS-1F	GRAY CAULKING AT DUCT SEAMS
-------------	-----------------------------

Sample Number	% Asbestos	Description of Sampled Material	Sample Location
339-90TS-1F1	0	GRAY CAULKING AT DUCT SEAMS	See Sketch 339-90TS-1
339-90TS-1F2	0	GRAY CAULKING AT DUCT SEAMS	See Sketch 339-90TS-1
339-90TS-1F3	0	GRAY CAULKING AT DUCT SEAMS	See Sketch 339-90TS-1

Inspector's Name	Signature	Date Samples Collected
Andrew Uyeda		3/27/2024

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





# LABORATORY REPORT

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

Client: Mason Architects, Inc.

Building: BUILDING 90T SOUTH SECTION

NVLAP LAB CODE 101807-0

Address: 119 Merchant Street, Suite 501  
Honolulu, HI 96813

Approved Signatory:

Sample/Homogeneous Area: 339-90TS-1F Analysis Date: 4/2/2024 Report Date: 4/2/2024

Lab ID	Sample ID	Color	Homogeneity	Asbestos Detected	Asbestos (Type) Area %	Fibrous Components Area %	Non-fibrous Components Area %	Comments
339-085	339-90TS-1F1	green	Yes	No	-	cellulose 5	misc. part. 95	
339-086	339-90TS-1F2	gray, white	Yes	No	-	-	misc. part. 100	
339-087	339-90TS-1F3	gray	Yes	No	-	-	misc. part. 100	

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for the scope specific under Lab Code 101807-0. State of Hawaii Asbestos Requirements mandates all samples to be collected by a certified Asbestos Inspector in accordance with § 11-501, 11-502, and 11-504. Results of samples collected by someone other than a certified Asbestos Inspector may be invalid.

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\*Samples analyzed as received by the laboratory, interpretation is responsibility of the client.

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Bldg 90TS - Page 24

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## Appendix B

### Asbestos Survey Sample Locations Sketch

Mauka Lani Elementary School  
SFA PreK Renovation, DOE Job No. S85080-24

Asbestos and Lead Paint Survey  
EMET ID: 2402059

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

ASBESTOS SAMPLE LOCATION PLAN

BLDG #	90TM	NAME OF PROJECT SITE	KALAELOA FACILITY 90T	ADDRESS	90 ENTERPRISE AVE KAPOLEI, HI 96707	SKETCH #	339-90TM-1 1-CP-1
--------	------	----------------------	-----------------------	---------	--	----------	----------------------

**LEGEND**

ACM: [Hatched Box] SAMPLE #  
 NON-ACM: [Dotted Box] SAMPLE #

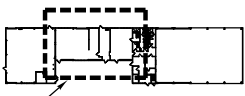
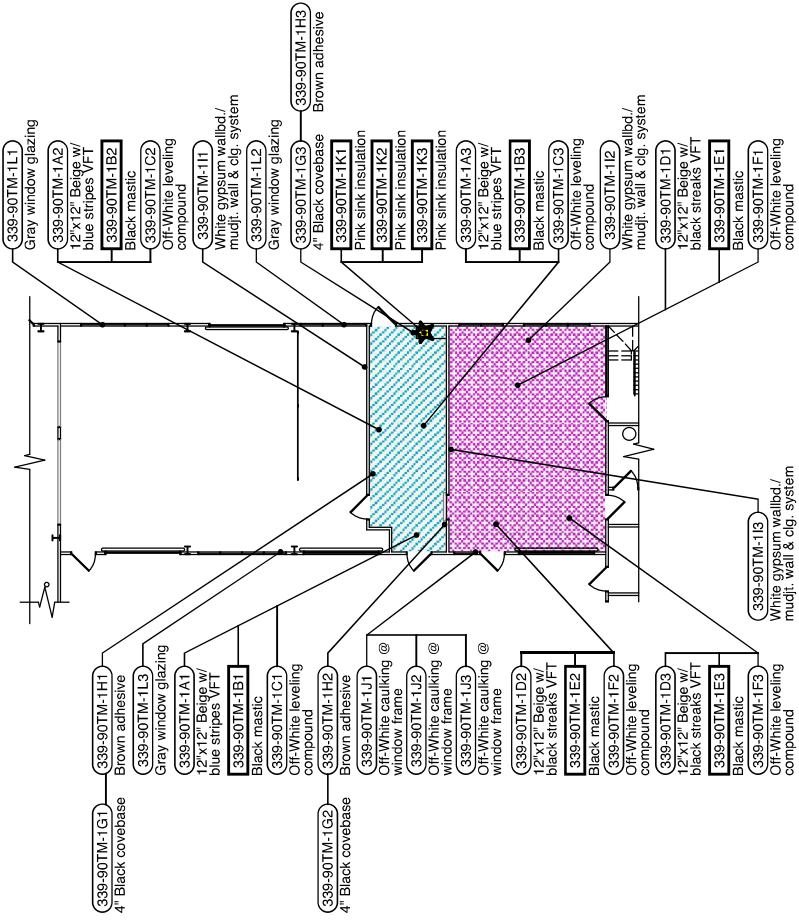
**ASBESTOS-CONTAINING MATERIALS (ACM):**  
 \* ACM are described in this Legend in **boldface** text.  
 Non-ACM (listed here only if layered with ACM) are described in plain text.

**SAMPLE AREAS 339-90TM-1A - 1B - 1C:**  
 12"x12" BEIGE w/ BLUE STRIPES VFT  
**BLACK MASTIC**; OFF-WHITE LEVELING COMPOUND

**SAMPLE AREAS 339-90TM-1D - 1E - 1F:**  
 12"x12" BEIGE w/ BLACK STRIPES VFT  
**BLACK MASTIC**; OFF-WHITE LEVELING COMPOUND

**SAMPLE AREA 339-90TM-1K:**  
 PINK SINK INSULATION

\* ASBESTOS-CONTAINING MATERIAL (ACM) IS DEFINED AS ANY MATERIAL CONTAINING > 1% ASBESTOS.  
 THIS SURVEY WAS LIMITED IN SCOPE TO SPECIFIC AREAS AFFECTED BY PLANNED RENOVATION ACTIVITIES ONLY. THEREFORE, THIS REPORT MAKES NO WARRANTY FOR AREAS OF THE BUILDING WHICH WERE NOT INCLUDED IN THE SCOPE OF THE SURVEY.



KALAELOA FACILITY 90T  
 (MIDDLE) PORTION - PARTIAL FLOOR PLAN  
 NOT TO SCALE

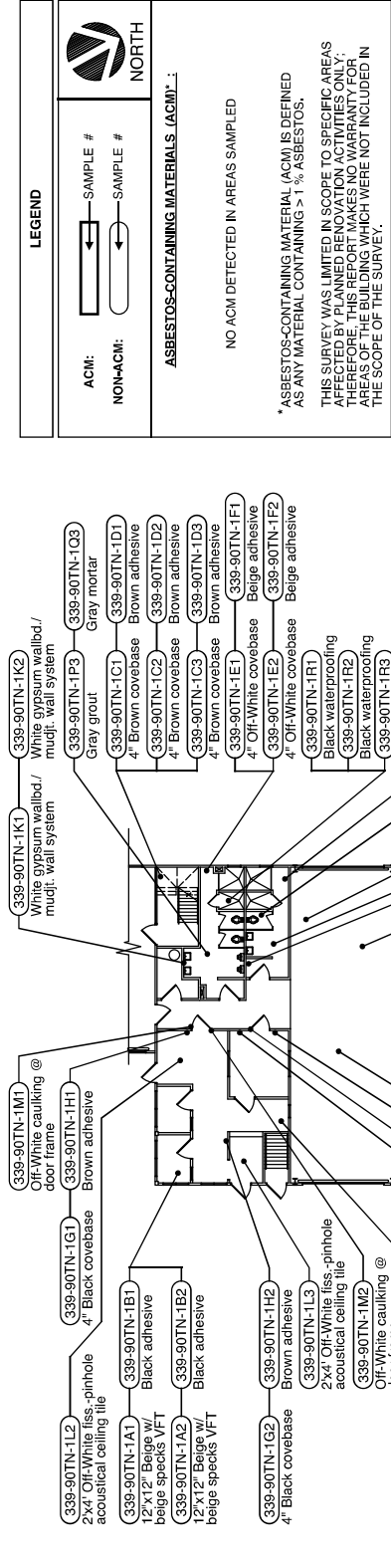
KEY PLAN: KALAELOA FACILITY 90T

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

EMET I.D. #2309339

ASBESTOS SAMPLE LOCATION PLAN

BLDG #	NAME OF PROJECT SITE	ADDRESS	SKETCH #
90TN	KALAELOA FACILITY 90T	90 ENTERPRISE AVE KAPOLEI, HI 96707	339-90TN-1 1 OF 1



- (339-90TN-1L2) 2x4' Off-White fliss.-pinhole acoustical ceiling tile
- (339-90TN-1A1) 12'x12' Beige w/ beige specks VFT
- (339-90TN-1A2) 12'x12' Beige w/ beige specks VFT
- (339-90TN-1G2) 4" Black coverbase
- (339-90TN-1H2) Brown adhesive
- (339-90TN-1L3) 2x4' Off-White fliss.-pinhole acoustical ceiling tile
- (339-90TN-1M2) Off-White caulking @ door frame
- (339-90TN-1A3) 12x12" Beige w/ beige specks VFT
- (339-90TN-1B3) Black adhesive
- (339-90TN-1J1) 1" Brown threshold
- (339-90TN-1J2) 1" Brown threshold
- (339-90TN-1J3) 1" Brown threshold
- (339-90TN-1M3) Off-White caulking @ door frame
- (339-90TN-1G3) 4" Black coverbase
- (339-90TN-1H3) Brown adhesive
- (339-90TN-1N1) Black expansion joint material
- (339-90TN-1N3) Black expansion joint material
- (339-90TN-1M1) Off-White caulking @ door frame
- (339-90TN-1H1) 339-90TN-1H1 Brown adhesive
- (339-90TN-1G1) 4" Black coverbase
- (339-90TN-1B1) Black adhesive
- (339-90TN-1B2) Black adhesive
- (339-90TN-1I1) White gypsum wallboard/multipl. wall system
- (339-90TN-1I2) White gypsum wallboard/multipl. wall system
- (339-90TN-1P3) Gray grout
- (339-90TN-1C1) 4" Brown coverbase
- (339-90TN-1C2) 4" Brown coverbase
- (339-90TN-1C3) 4" Brown coverbase
- (339-90TN-1E1) 4" Off-White coverbase
- (339-90TN-1E2) 4" Off-White coverbase
- (339-90TN-1F1) 4" Off-White coverbase
- (339-90TN-1F2) 4" Off-White coverbase
- (339-90TN-1R1) Black waterproofing
- (339-90TN-1R2) Black waterproofing
- (339-90TN-1R3) Black waterproofing
- (339-90TN-1E3) 4" Off-White coverbase
- (339-90TN-1L1) 2x4' Off-White fliss.-pinhole acoustical ceiling tile
- (339-90TN-1O1) Black vibration cloth
- (339-90TN-1O2) Black vibration cloth
- (339-90TN-1O3) Black vibration cloth
- (339-90TN-1P1) Gray grout
- (339-90TN-1P2) Gray grout
- (339-90TN-1K3) White gypsum wallboard/multipl. wall system
- (339-90TN-1N2) Black expansion joint material
- (339-90TN-1D1) Brown adhesive
- (339-90TN-1D2) Brown adhesive
- (339-90TN-1D3) Brown adhesive
- (339-90TN-1Q1) Gray mortar
- (339-90TN-1Q2) Gray mortar
- (339-90TN-1Q3) Beige adhesive
- (339-90TN-1F3) Beige adhesive

KALAELOA FACILITY 90T  
(NORTH) PORTION - PARTIAL FIRST FLOOR PLAN  
NOT TO SCALE

KEY PLAN: KALAELOA FACILITY 90T

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

EMET I.D. #2309339

ASBESTOS SAMPLE LOCATION PLAN

BLDG #	NAME OF PROJECT SITE	ADDRESS	SKETCH #
90TN	KALAELOA FACILITY 90T	90 ENTERPRISE AVE KAPOLEI, HI 96707	339-90TN-M 1 OF 1

**LEGEND**

ACM: SAMPLE #


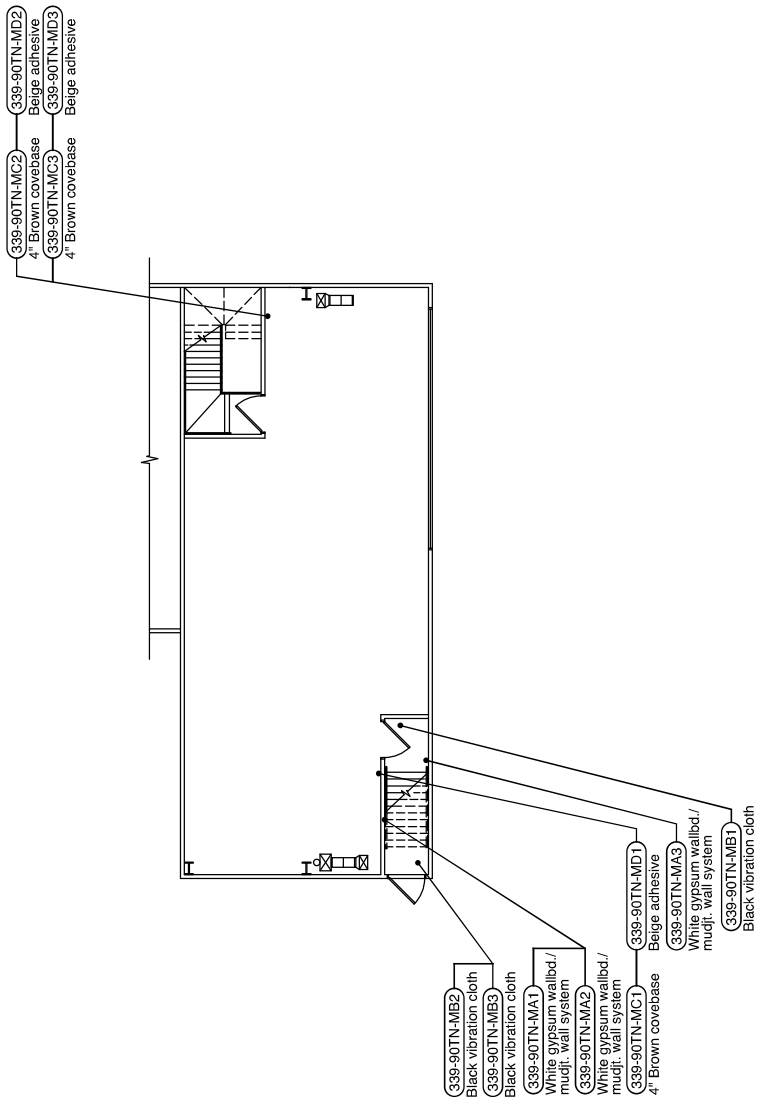
NON-ACM: SAMPLE #

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

NO ACM DETECTED IN AREAS SAMPLED

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

THIS SURVEY WAS LIMITED IN SCOPE TO SPECIFIC AREAS AFFECTED BY PLANNED REMOVAL ACTIVITIES ONLY. AREAS OF THE BUILDING WHICH WERE NOT INCLUDED IN THE SCOPE OF THE SURVEY.

KALAELOA FACILITY 90T  
(NORTH) PORTION - MEZZANINE FLOOR PLAN  
NOT TO SCALE

KEY PLAN: KALAELOA FACILITY 90T




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


EMET I.D. #2309339

ASBESTOS SAMPLE LOCATION PLAN

BLDG #	NAME OF PROJECT SITE	ADDRESS	SKETCH #
90TS	KALAELOA FACILITY 90T	90 ENTERPRISE AVE KAPOLEI, HI 96707	339-90TS-1 1 OF 1

**LEGEND**

ACM:  SAMPLE #

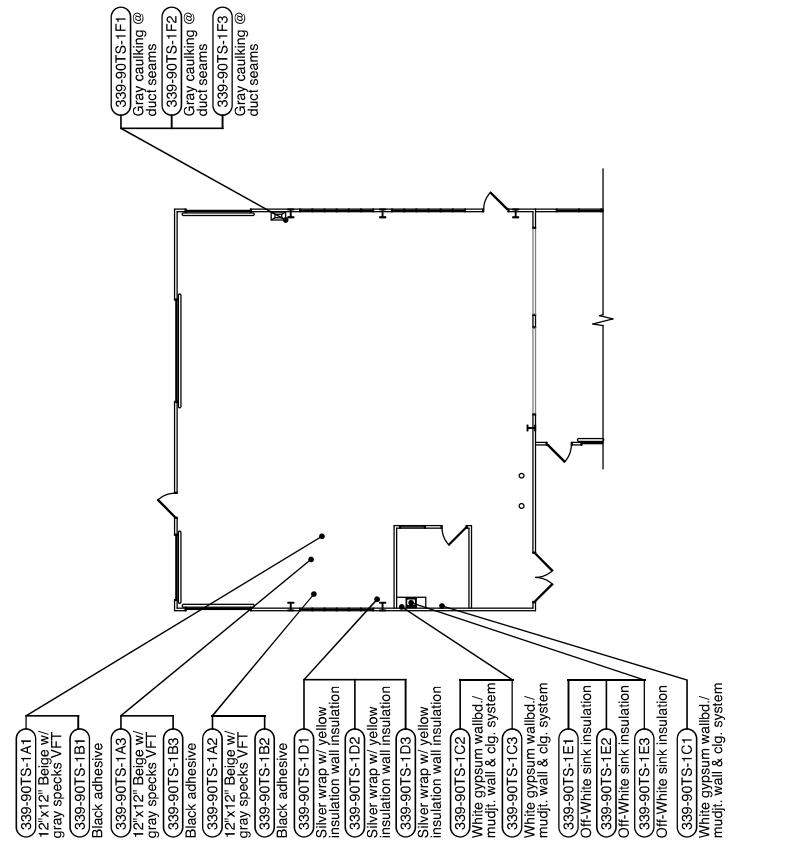
NON-ACM:  SAMPLE #

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

NO ACM DETECTED IN AREAS SAMPLED

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

THIS SURVEY WAS LIMITED IN SCOPE TO SPECIFIC AREAS AFFECTED BY PLANNED RENOVATION ACTIVITIES ONLY. AREAS OF THE BUILDING INCLUDING THE ROOF AND OTHER AREAS OF THE BUILDING WHICH WERE NOT INCLUDED IN THE SCOPE OF THE SURVEY.



KALAELOA FACILITY 90T  
(SOUTH) PORTION - PARTIAL FLOOR PLAN  
NOT TO SCALE

KEY PLAN: KALAELOA FACILITY 90T





## Appendix C

### Lead Paint Test Results

Mauka Lani Elementary School  
SFA PreK Renovation, DOE Job No. S85080-24

Asbestos and Lead Paint Survey  
EMET ID: 2402059

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



# Laboratory Report

Painted Surfaces Total Elemental Lead Analyses  
by X-Ray Fluorescence

EMET ID: 2309339

Test Date: March 27, 2024

Restoration of Facility 90T  
Kalaeloa

XRF#	Location	Component	Substrate	Condition	Color	Lead	Lead-Based	Confirmed
						Pb (mg/cm <sup>2</sup> )	Paint	Lead-Containing Paint
146	Calibration					1.04 ± 0.10		
147	Calibration					1.25 ± 0.10		
148	Calibration					1.13 ± 0.10		
149	south wing, Exterior	wall	metal	intact	off white	<LOD ± 0.01	no	no
150	south wing, Exterior	door frame	metal	intact	off white	<LOD ± 0.01	no	no
151	south wing, Exterior	door	metal	intact	blue	<LOD ± 0.01	no	no
152	south wing, Exterior	eave	metal	intact	off white	<LOD ± 0.01	no	no
153	south wing, Exterior	downspout	plastic	intact	off white	<LOD ± 0.01	no	no
154	south wing, Exterior	gutter	metal	intact	off white	<LOD ± 0.01	no	no
155	south wing, Exterior	window frame	metal	intact	off white	<LOD ± 0.01	no	no
156	south wing, Exterior	roll up door frame	metal	intact	off white	<LOD ± 0.01	no	no
157	south wing, Exterior	roll up door	metal	intact	off white	<LOD ± 0.01	no	no
158	south wing, Exterior	pipe	metal	intact	red	<LOD ± 0.01	no	no
159	south wing, Exterior	door	metal	intact	off white	<LOD ± 0.01	no	no
160	south wing, Exterior	roll up door	metal	intact	off white	<LOD ± 0.01	no	no
161	south wing, Exterior	electrical box	metal	intact	off white	<LOD ± 0.03	no	no
162	south wing, Exterior	pipe	plastic	intact	gray	<LOD ± 0.01	no	no
163	south wing, Exterior	conduit pipe	metal	intact	off white	<LOD ± 0.01	no	no
164	south wing, Exterior	overhang roof	metal	intact	off white	<LOD ± 0.01	no	no
165	south wing, Exterior	pipe	metal	intact	off white	<LOD ± 0.01	no	no
166	south wing, Exterior	parking post	metal	intact	off white	<LOD ± 0.01	no	no
167	south wing, Exterior	AC duct	metal	intact	off white	<LOD ± 0.01	no	no
168	south wing, Exterior	pipe	metal	intact	off white	<LOD ± 0.01	no	no
169	south wing, Exterior	door frame	metal	intact	off white	<LOD ± 0.01	no	no
170	south wing, Exterior	door	metal	intact	off white	<LOD ± 0.01	no	no
171	middle wing, Exterior	wall	metal	intact	off white	<LOD ± 0.01	no	no
172	middle wing, Exterior	post	metal	poor	off white	0.08 ± 0.03	no	yes
173	middle wing, Exterior	window frame	gypboard	peeling	brown	0.12 ± 0.02	no	yes
174	middle wing, Exterior	window	metal	peeling	brown	0.19 ± 0.02	no	yes
175	middle wing, Exterior	roll up door frame	metal	intact	brown	0.24 ± 0.03	no	yes
176	middle wing, Exterior	roll up door	metal	intact	brown	0.11 ± 0.02	no	yes
177	middle wing, Exterior	door frame	wood	poor	brown	<LOD ± 0.01	no	no
178	middle wing, Exterior	pipe	metal	intact	red	0.25 ± 0.03	no	yes
179	middle wing, Exterior	eave	metal	peeling	off white	<LOD ± 0.01	no	no
180	middle wing, Exterior	window	metal	intact	brown	0.08 ± 0.01	no	yes
181	middle wing, Exterior	window frame	metal	intact	brown	0.16 ± 0.03	no	yes
182	middle wing, Exterior	eave	metal	peeling	off white	<LOD ± 0.01	no	no

"Lead" column indicates the detected lead content in paint film in mg/cm<sup>2</sup> (milligrams per square centimeter).  
<LOD = less than instrument level of detection, 0.01 mg/cm<sup>2</sup>.

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t

Page 1 of 4

EnvironMETeo (EMET) Services, Inc. Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200  
(808) 671-8383...Telephone (808) 671-7979...Facsimile emet@emetservices.com...Email





EMET ID: 2309339

Test Date: March 27, 2024

Restoration of Facility 90T  
Kalaeloa

XRF#	Location	Component	Substrate	Condition	Color	Lead	Lead-Based	Confirmed
						Pb (mg/cm <sup>2</sup> )	Paint	Lead-Containing Paint
183	middle wing, Exterior	beam	metal	peeling	off white	<LOD ± 0.01	no	no
184	middle wing, Exterior	rafter	metal	peeling	off white	<LOD ± 0.01	no	no
185	middle wing, Exterior	Wall foundation	concrete	intact	off white	<LOD ± 0.01	no	no
186	middle wing, Exterior	wall base	metal	intact	off white	<LOD ± 0.01	no	no
187	middle wing, Exterior	door frame	metal	poor	brown	0.08 ± 0.02	no	yes
188	middle wing, Exterior	door	metal	intact	brown	0.41 ± 0.10	no	yes
189	middle wing, Exterior	roll up door	metal	intact	brown	<LOD ± 0.01	no	no
190	middle wing, Exterior	roll up door frame	metal	intact	off white	<LOD ± 0.01	no	no
191	middle wing, Exterior	window	metal	poor	brown	0.15 ± 0.02	no	yes
192	middle wing, Exterior	window frame	metal	poor	brown	0.07 ± 0.02	no	yes
193	middle wing, Exterior	roll up door	metal	intact	brown	<LOD ± 0.01	no	no
194	middle wing, Exterior	roll up door frame	metal	intact	brown	<LOD ± 0.01	no	no
195	north wing, Exterior	wall	metal	intact	off white	0.02 ± 0.01	no	yes
196	north wing, Exterior	door frame	metal	intact	brown	0.17 ± 0.03	no	yes
197	north wing, Exterior	door	metal	intact	brown	0.27 ± 0.04	no	yes
198	north wing, Exterior	pipe	metal	poor	off white	0.02 ± 0.01	no	yes
199	north wing, Exterior	window frame	metal	intact	brown	0.16 ± 0.02	no	yes
200	north wing, Exterior	window frame	metal	intact	brown	0.16 ± 0.02	no	yes
201	north wing, Exterior	electrical box	metal	intact	gray	0.02 ± 0.01	no	yes
202	north wing, Exterior	eave	metal	peeling	off white	<LOD ± 0.01	no	no
203	north wing, Exterior	rafter	metal	peeling	off white	<LOD ± 0.01	no	no
204	north wing, Exterior	beam	metal	peeling	off white	0.02 ± 0.01	no	yes
205	north wing, Exterior	safety pole	metal	poor	yellow	0.25 ± 0.04	no	yes
206	north wing, Exterior	gutter	metal	peeling	off white	0.29 ± 0.02	no	yes
207	north wing, Exterior	wall	metal	intact	white	0.22 ± 0.01	no	yes
208	north wing, Exterior	column	metal	intact	off white	<LOD ± 0.01	no	no
209	north wing, Exterior	column	metal	intact	red	<LOD ± 0.01	no	no
210	north wing, Exterior	roll up door frame	metal	intact	brown	0.27 ± 0.02	no	yes
211	north wing, Exterior	roll up door	metal	intact	brown	0.31 ± 0.10	no	yes
212	north wing, Exterior	roof	metal	poor	off white	<LOD ± 0.01	no	no
213	north wing, Exterior	window frame	metal	intact	beige	<LOD ± 0.01	no	no
214	middle wing, Exterior	roof	metal	poor	off white	<LOD ± 0.01	no	no
215	south wing, Exterior	roof	metal	intact	off white	<LOD ± 0.01	no	no
216	south wing, Interior	wall	gypboard	intact	off white	<LOD ± 0.01	no	no
217	south wing, Interior	wall	wood	intact	blue	<LOD ± 0.01	no	no
218	south wing, Interior	door frame	metal	intact	blue	<LOD ± 0.01	no	no
219	south wing, Interior	door	metal	intact	blue	<LOD ± 0.01	no	no
220	south wing, Interior	wall trim	wood	intact	white	<LOD ± 0.01	no	no
221	south wing, Interior	wall	gypboard	intact	yellow	<LOD ± 0.01	no	no
222	south wing, Interior	window frame	wood	intact	yellow	<LOD ± 0.01	no	no
223	south wing, Interior	window frame	wood	intact	white	<LOD ± 0.01	no	no
224	south wing, Interior	beam	metal	intact	off white	<LOD ± 0.01	no	no

"Lead" column indicates the detected lead content in paint film in mg/cm<sup>2</sup> (milligrams per square centimeter).  
<LOD = less than instrument level of detection, 0.01 mg/cm<sup>2</sup>.

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t

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EnvironMETeo (EMET) Services, Inc. Waipio Gentry Business Park 94-520 Uke'e Street, Suite A Waipahu, Hawaii, USA 96797-4200  
(808) 671-8383...Telephone (808) 671-7979...Facsimile emet@emetservices.com...Email



EMET ID: 2309339

Test Date: March 27, 2024

Restoration of Facility 90T  
Kalaeloa

XRF#	Location	Component	Substrate	Condition	Color	Lead	Lead-Based	Confirmed
						Pb (mg/cm <sup>2</sup> )	Paint	Lead-Containing Paint
225	south wing, Interior	wall	metal	intact	blue	<LOD ± 0.01	no	no
226	south wing, Interior	duct	metal	intact	off white	<LOD ± 0.01	no	no
227	south wing, Interior	mechanical equipment	metal	intact	red	<LOD ± 0.01	no	no
228	south wing, Interior	conduit pipe	metal	intact	off white	<LOD ± 0.01	no	no
229	south wing, Interior	roll up door	metal	intact	blue	<LOD ± 0.01	no	no
230	south wing, Interior	roll up door frame	metal	intact	blue	<LOD ± 0.01	no	no
231	south wing, Interior	door frame	metal	intact	beige	<LOD ± 0.01	no	no
232	south wing, Interior	door	metal	intact	beige	<LOD ± 0.01	no	no
233	south wing, Interior	roll up door	metal	intact	yellow	<LOD ± 0.01	no	no
234	south wing, Interior	roll up door frame	metal	intact	yellow	<LOD ± 0.01	no	no
235	south wing, Interior	security wall	metal	intact	yellow	<LOD ± 0.01	no	no
236	south wing, Interior	duct	metal	intact	beige	<LOD ± 0.01	no	no
237	south wing, Interior	conduit pipe	metal	peeling	off white	0.02 ± 0.01	no	yes
238	south wing, Interior	window frame	metal	intact	off white	<LOD ± 0.01	no	no
239	south wing, Interior	rafter	metal	intact	off white	<LOD ± 0.01	no	no
240	middle wing, Interior	roll up door	metal	intact	blue	<LOD ± 0.01	no	no
241	middle wing, Interior	roll up door frame	metal	intact	blue	<LOD ± 0.01	no	no
242	middle wing, Interior	door frame	metal	intact	blue	0.02 ± 0.01	no	yes
243	middle wing, Interior	door	metal	intact	blue	<LOD ± 0.01	no	no
244	middle wing, Interior	column	metal	intact	off white	<LOD ± 0.01	no	no
245	middle wing, Interior	rafter	metal	intact	off white	<LOD ± 0.01	no	no
246	middle wing, Interior	beam	metal	intact	off white	<LOD ± 0.01	no	no
247	middle wing, Interior	window frame	metal	intact	blue	0.02 ± 0.01	no	yes
248	middle wing, Interior	window	metal	intact	blue	<LOD ± 0.01	no	no
249	middle wing, Interior	wall	metal	intact	blue	<LOD ± 0.01	no	no
250	middle wing, Interior	wall	gypboard	intact	blue	<LOD ± 0.01	no	no
251	middle wing, Interior	wall base	wood	intact	green	0.70 ± 0.10	no	yes
252	middle wing, Interior	door frame	wood	intact	off white	<LOD ± 0.01	no	no
253	middle wing, Interior	door	wood	intact	brown	<LOD ± 0.01	no	no
254	middle wing, Interior	wall	gypboard	intact	off white	<LOD ± 0.01	no	no
255	middle wing, Interior	cabinet	wood	intact	brown	<LOD ± 0.01	no	no
256	middle wing, Interior	door frame	wood	intact	beige	<LOD ± 0.01	no	no
257	middle wing, Interior	conduit pipe	metal	intact	off white	<LOD ± 0.01	no	no
258	middle wing, Interior	door	metal	intact	beige	<LOD ± 0.01	no	no
259	middle wing, Interior	ceiling	gypboard	intact	white	<LOD ± 0.01	no	no
260	middle wing, Interior	window frame	wood	intact	off white	<LOD ± 0.01	no	no
261	middle wing, Interior	window frame	metal	intact	off white	0.02 ± 0.01	no	yes
262	middle wing, Interior	window sill	wood	intact	off white	<LOD ± 0.01	no	no
263	middle wing, Interior	railing	metal	intact	yellow	0.02 ± 0.01	no	yes
264	middle wing, Interior	door	metal	intact	brown	<LOD ± 0.01	no	no
265	north wing, Interior	door frame	metal	intact	beige	<LOD ± 0.01	no	no
266	north wing, Interior	door	metal	intact	beige	<LOD ± 0.01	no	no

"Lead" column indicates the detected lead content in paint film in mg/cm<sup>2</sup> (milligrams per square centimeter).  
<LOD = less than instrument level of detection, 0.01 mg/cm<sup>2</sup>.

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #112969, Model XL3t



EMET ID: 2309339

Test Date: March 27, 2024

Restoration of Facility 90T  
Kalaeloa

XRF#	Location	Component	Substrate	Condition	Color	Lead	Lead-Based	Confirmed
						Pb (mg/cm <sup>2</sup> )	Paint	Lead-Containing Paint
267	north wing, Interior	wall	gypboard	intact	off white	<LOD ± 0.01	no	no
268	north wing, Interior	wall	metal	intact	off white	<LOD ± 0.01	no	no
269	north wing, Interior	door	wood	intact	beige	<LOD ± 0.01	no	no
270	north wing, Interior	door frame	metal	intact	beige	<LOD ± 0.01	no	no
271	north wing, Interior	window frame	wood	intact	beige	<LOD ± 0.01	no	no
272	north wing, Interior	door frame	wood	intact	beige	<LOD ± 0.01	no	no
273	north wing, Interior	wall	gypboard	intact	beige	<LOD ± 0.01	no	no
274	north wing, Interior	window frame	metal	intact	brown	<LOD ± 0.01	no	no
275	north wing, Interior	wall base	wood	intact	black	<LOD ± 0.01	no	no
276	north wing, Interior	wall	gypboard	intact	off white	<LOD ± 0.01	no	no
277	north wing, Interior	stripe	concrete	intact	yellow	0.67 ± 0.10	no	yes
278	north wing, Interior	wall	metal	intact	off white	<LOD ± 0.01	no	no
279	north wing, Interior	pipe	metal	intact	off white	<LOD ± 0.01	no	no
280	north wing, Interior	roll up door frame	metal	poor	off white	<LOD ± 0.01	no	no
281	north wing, Interior	roll up door	metal	intact	gray	<LOD ± 0.01	no	no
282	north wing, Interior	conduit pipe	metal	peeling	off white	<LOD ± 0.01	no	no
283	north wing, Interior	beam	metal	intact	off white	0.03 ± 0.01	no	yes
284	north wing, Interior	rafter	metal	intact	off white	0.04 ± 0.01	no	yes
285	north wing, Interior	pipe	metal	intact	red	0.06 ± 0.01	no	yes
286	north wing, Interior	beam	metal	intact	yellow	0.07 ± 0.01	no	yes
287	north wing, Interior	duct	metal	intact	off white	<LOD ± 0.01	no	no
288	north wing, Interior	gutter	metal	intact	red	<LOD ± 0.01	no	no
289	north wing, Interior	beam	metal	intact	red	<LOD ± 0.01	no	no
290	north wing, mezzanine	wall	gypboard	fair	beige	<LOD ± 0.01	no	no
291	north wing, mezzanine	door frame	metal	intact	beige	<LOD ± 0.01	no	no
292	north wing, mezzanine	door	metal	intact	brown	<LOD ± 0.01	no	no
293	north wing, mezzanine	wall	metal	intact	beige	<LOD ± 0.01	no	no
294	north wing, mezzanine	post	metal	intact	beige	<LOD ± 0.01	no	no
295	north wing, mezzanine	rafter	metal	intact	beige	<LOD ± 0.01	no	no
296	north wing, mezzanine	beam	metal	intact	beige	<LOD ± 0.01	no	no
297	north wing, mezzanine	railing	metal	peeling	brown	<LOD ± 0.01	no	no
298	north wing, mezzanine	ceiling	metal	intact	beige	<LOD ± 0.01	no	no
299	north wing, mezzanine	machine	metal	fair	beige	<LOD ± 0.01	no	no
300	north wing, mezzanine	duct	metal	fair	beige	<LOD ± 0.01	no	no
301	north wing, mezzanine	pipe	metal	intact	red	<LOD ± 0.01	no	no
302	north wing, mezzanine	floor	metal	fair	brown	<LOD ± 0.01	no	no
303	north wing, mezzanine	railing	metal	fair	brown	<LOD ± 0.01	no	no
304	Calibration					1.10 ± 0.10		
305	Calibration					1.14 ± 0.10		
306	Calibration					1.15 ± 0.10		

"Lead" column indicates the detected lead content in paint film in mg/cm<sup>2</sup> (milligrams per square centimeter).  
<LOD = less than instrument level of detection, 0.01 mg/cm<sup>2</sup>.

Lead-based paint (LBP) is defined as paint with a lead content greater than or equal to 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>).

Occupational Safety and Health Administration (OSHA) regulates activities disturbing paint that contains any amount of lead (lead-containing paint or LCP), even if the content is below the HUD standard.

Serial #1 12969, Model XL3t

Page 4 of 4

EnvironMETeo (EMET) Services, Inc. Waipio Gentry Business Park 94-520 Uke'e Street, SuiteA Waipahu, Hawaii, USA 96797-4200  
(808) 671-8383...Telephone (808) 671-7979...Facsimile emet@emetservices.com...Email



## **Appendix D**

### **Certifications**

Mauka Lani Elementary School  
SFA PreK Renovation, DOE Job No. S85080-24

Asbestos and Lead Paint Survey  
EMET ID: 2402059

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

United States Department of Commerce  
National Institute of Standards and Technology



---

## Certificate of Accreditation to ISO/IEC 17025:2017

---

NVLAP LAB CODE: 101807-0

**EnvironMETeo Services Inc.**  
Waipahu, HI

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:

### Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-IAC/IAF Communiqué dated January 2009).

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2023-07-01 through 2024-06-30  
Effective Dates



A handwritten signature in blue ink, which appears to read "Peter S. Samaha".

For the National Voluntary Laboratory Accreditation Program



STATE OF HAWAII

DEPARTMENT OF HEALTH



# Lead-Based Paint Activities Firm Certification

THIS IS TO CERTIFY THAT

## EnvironMETeo Services, Inc.

has fulfilled the requirements of Chapter 11-41 Hawaii Administrative Rules and the Toxic Substance Control Act (TSCA) Section 402(a)(2), and has received certification as a firm pursuant to §11-41-4, HAR to conduct lead-based paint activities in Hawaii.

This certification is valid from the date of issuance and expires on **JUNE 19, 2024**.

Date of Issue: **MAY 18, 2021**  
Certification # **PBF-0024**

*Anna J. Jennings*  
FOR DIRECTOR OF HEALTH

NON-TRANSFERABLE

REVOCABLE FOR CAUSE



**State of Hawai'i  
Asbestos Certification**

**Training Course Exp. Dates**  
 W n/a MP n/a  
 CS n/a PD n/a  
 INS 12/06/24 PM 10/01/24

W= Worker  
 CS= Cont. Sup.  
 INS= Inspector  
 PD= Project Designer  
 MP= Mgmt. Planner  
 PM= Project Monitor

**Iopa**  
 Joseph K. III  
 EnvironMETeo Services, Inc.  
 HIASB-0585  
 State Exp. Date **11/06/2024**

**State of Hawai'i  
Lead Based Paint Activities Certification**

**Expiration Dates:**  
 Inspector: n/a  
 Supervisor: n/a  
 Risk Assessor: 08/25/2024  
 Project Designer: n/a  
 Worker: n/a

**Iopa, III  
Joseph**  
 Certification # PB-0668



**State of Hawai'i  
Asbestos Certification**

**Training Course Exp. Dates**  
 W n/a MP n/a  
 CS n/a PD n/a  
 INS 12/06/24 PM 10/01/24

W= Worker  
 CS= Cont. Sup.  
 INS= Inspector  
 PD= Project Designer  
 MP= Mgmt. Planner  
 PM= Project Monitor

**Uyeda**  
 Andrew H.  
 EnvironMETeo Services, Inc.  
 HIASB-2432  
 State Exp. Date **06/01/2024**

**State of Hawai'i  
Lead Based Paint Activities Certification**

**Expiration Dates:**  
 Inspector: n/a  
 Supervisor: n/a  
 Risk Assessor: 10/19/2025  
 Project Designer: n/a  
 Worker: n/a

**Uyeda  
Andrew**  
 Certification # PB-0669





**End of Report**  
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## SECTION 01770 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including the following:
  - 1. Project Record Documents.
  - 2. Operation and Maintenance Manuals.
  - 3. Warranties.
  - 4. Instruction for the State's personnel.
- B. Related documents include the following:
  - 1. SECTION 01700 - EXECUTION REQUIREMENTS.

#### 1.02 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting a Final Inspection to determine Substantial Completion, complete the following items in addition to requirements of Article 7 of the GENERAL CONDITIONS.
  - 1. Advise the Project Manager of pending insurance changeover requirements.
  - 2. Submit specific warranties, final certifications, and similar documents.
  - 3. Obtain and submit occupancy permits, operating certificates, and similar releases and access to services and utilities, unless waived by the Project Manager.
  - 4. Arrange to deliver tools, spare parts, extra materials, and similar items to a location designated by the Project Manager. Label with manufacturer's name and model number where applicable.
  - 5. Make final changeover of permanent locks and deliver keys to the Project Manager. Advise the State's personnel of changeover in security provisions.
  - 6. Complete startup testing of systems.
  - 7. Submit test, adjust, and balance records.
  - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 9. Advise the Project Manager of changeover in other utilities.
  - 10. Submit changeover information related to the State's occupancy, use, operation, and maintenance.

11. Complete final cleaning requirements, including touch up painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
13. Submit the O&M Manual(s) for review.

#### 1.03 FINAL COMPLETION

- A. Preliminary Procedures: Within ten (10) days from the Project Acceptance Date, complete the following items in addition to requirements of GENERAL CONDITIONS Article 7 PROSECUTION AND PROGRESS:
1. Instruct the State's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training media materials.

#### 1.04 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit 2 copies of any updated and action taken list. In addition to requirements of GENERAL CONDITIONS Article 7 PROSECUTION AND PROGRESS, include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project Name and Title.
    - b. Job No.
    - c. Date and page number.
    - d. Name of Contractor.

#### 1.05 PROJECT RECORD DOCUMENTS AND REQUIREMENTS

- A. General:
1. Definition: "Project Record Documents", including Record Drawings, shall fulfill the requirements of "Field-Posted As-Built Drawings" listed in the GENERAL CONDITIONS.
  2. Do not use Project Record Documents for daily construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Project Manager's reference during normal working hours. Maintain these documents as specified in paragraph entitled "Record Drawings" hereinafter.
  3. The Designer, under contract with the State, will update the drawings to show all addendum, PCD, and sketch changes. The Project Manager will transmit these drawings (mylar or

vellum) to the Contractor who will make all “red-line” corrections to these drawings to record the changes depicted on the Contractor’s Field Posted Record (“As-Builts”) by accepted drafting practices as approved by the Project Manager.

4. Where the recorded changes depicted on the Contractor’s Field Posted Record (“As-Builts”) are in the form of shop drawings, the Contractor shall provide those shop drawings on mylar or vellum sheets in the same material and size as the drawings transmitted to the Contractor. The new drawing sheets shall be titled and numbered to conform to the construction drawings and clearly indicate what information they supersede in the actual construction drawings. For example a new drawing that replaces drawing M-3, could be numbered M3a.
5. The Contractor shall bring to the attention of the Project Manager any discrepancy between the changes made by the Designer and those depicted on addendum, PCD, and sketch changes. The Project Manager will resolve any conflicts.
6. Submit final Record Documents (Field Posted Record Drawings) within ten (10) days after the Final Inspection Date but no later than the Contract Completion Date, unless the GENERAL CONDITIONS require an earlier submittal date.
7. The Contractor shall guarantee the accuracy of its final Record Documents. The State will hold the Contractor liable for costs the State incurs as a result of inaccuracies in the Contractor’s Record Documents.
8. Prepare and submit property surveys, and similar final record information as required by the Project Manager.
9. Deliver tools, spare parts, extra materials, and similar items to a location designated by the Project Manager. Label with manufacturer’s name and model number where applicable.
10. Submit Final, corrected O&M Manual(s).

B. Record Drawings:

1. Maintain a duplicate full-size set of Field Posted Record (“As-Builts”) Drawings at the job site. Clearly and accurately record all deviations from alignments, elevations and dimensions, which are stipulated on the drawings and for changes directed by the Project Manager that deviate from the drawings.
2. Record changes immediately after they are constructed in place and where applicable, refer to the authorizing document (Field Order, Change Order, or Contract Modification). Use red pencil to record changes. Make Field Posted Record Drawings available to the Project Manager at any time so that its clarity and accuracy can be monitored.
  - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
  - b. Accurately record information in an understandable drawing technique.
  - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

- d. Mark the contract drawings or the shop drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on contract drawings.
  - e. Mark important additional information that was either shown schematically or omitted from original Drawings.
  - f. Locate concealed building utilities by dimension from benchmarks or permanent structures. Locate site utilities by dimensions, azimuth and lengths from benchmarks or permanent structures.
  - g. Note field order numbers, Change Order numbers, Contract Modification numbers, Alternate numbers, post-construction drawing numbers (PCD) and similar identification (RFI numbers) where applicable.
  - h. The Contractor shall initial each deviation and each revision marking.
3. Use the final updated Contract Drawing set plus applicable shop drawings for making the final Field Posted Record Drawings submittal.
  4. Certify drawing accuracy and completeness. Label and sign the record drawings.
  5. Label the title sheet and on all sheets in the margin space to the right of the sheet number, written from the bottom upward, with the title "FIELD POSTED RECORD DRAWINGS" and certification information as shown below. Provide a signature line and company name line for each subcontractor that will also certify the respective drawing. Adjust size to fit margin space.

FIELD POSTED                      Certified By: \_\_\_\_\_ Date: \_\_\_\_\_  
 RECORD DRAWINGS                [Contractor's Company Name]

6. Revise the Drawing Index and label the set "FIELD POSTED RECORD DRAWINGS". Include the label "A COMPLETE SET CONTAINS [\_\_\_\_\_] SHEETS" in the margin at the bottom right corner of each sheet. Quantify the total number of sheets comprising the set.
7. If the Project Manager determines a drawing does not accurately record a deviation or omits relevant information, the State will correct any FIELD POSTED RECORD DRAWINGS sheet. Contractor will be charged for the State's cost to correct the error or omission.
8. Use the final Field Posted Record Drawings sheets to create one electronic version of the set. The set shall be recorded in Adobe Acrobat PDF (Portable Document Format). Create a single indexed, bookmarked PDF file of the entire set of drawings and record on the CD. Submit one set of the final Field Posted Record Drawings sheets and the complete electronic CD set(s).

#### 1.06 WARRANTIES

- A. Submittal Time: Submit written manufacturer's warranties at request of the Project Manager for designated portions of the Work where commencement of warranties other than Project Acceptance date is indicated.

- B. Partial Occupancy: Submit properly executed manufacturer's warranties within forty five (45) days of completion of designated portions of the Work that are completed and occupied or used by the State during construction period by separate agreement with Contractor.
- C. Organize manufacturer's warranty documents into an orderly sequence based on the table of contents of the Specifications.
  - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 inch x 11-inch paper.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer and prime contractor.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES", Project Name and Title, DAGS Job Number, and name of Contractor.
  - 4. Use the final submittal of the warranties to create an electronic Adobe Acrobat PDF (Portable Document Format) version of the bound warranty documents files. Each sheet shall be separately scanned, at 600 DPI or better into a PDF file, indexed and recorded on a recordable compact disc (CD).
- D. Provide 2 sets of manufacturer's warranties that exceed one year and one CD as part of the closing document submittals. Provide additional copies of each warranty to include in operation and maintenance manuals.

#### 1.07 OPERATION AND MAINTENANCE MANUALS

- A. Assemble complete sets of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
  - 1. Operation Data:
    - a. Emergency instructions and procedures.
    - b. System, subsystem, and equipment descriptions, including operating standards.
    - c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
    - d. Description of controls and sequence of operations.
    - e. Piping diagrams.
  - 2. Maintenance Data:
    - a. Manufacturer's information, Material Safety Data Sheets, and a list of spare parts.
    - b. Name, address, and telephone number of installer or supplier.
    - c. Maintenance procedures.
    - d. Maintenance and service schedules for preventive and routine maintenance.
    - e. Maintenance record forms.
    - f. Sources of spare parts and maintenance materials.
    - g. Copies of maintenance service agreements.

- h. Copies of warranties and bonds.
- B. Use the following 3 paragraph headings, “Notes, Cautions and Warnings”, to emphasize important and critical instructions and procedures. Place the words “Notes”, “Cautions”, or “Warnings” immediately before the applicable instructions or procedures. Notes, Cautions and Warnings are defined as follows:
- 1. Note: highlights an essential operating or maintenance procedure, condition or statement.
  - 2. Caution: highlights an operating or maintenance procedure, practice, condition or statement which if not strictly observed, could result in damage to or destruction of equipment, loss of designed effectiveness, or health hazards to personnel.
  - 3. Warning: highlights an operating or maintenance procedure, practice, condition, or statement that if not strictly observed, could result in injury to or death of personnel.
- C. Organize the Operation and Maintenance Manuals into suitable sets of manageable size. Bind and index data in heavy-duty, “D” type 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Binder color shall be maroon, or if not available red. Identify each binder on front and spine with the printed title “OPERATION AND MAINTENANCE MANUAL”, Project Name and Title include building number when appropriate, DAGS Job Number, Prepared For: State of Hawaii, State Civil Defense, Prepared By: [Contractor – Insert Name, Address and Phone Number] and Volume Number. Each binder is a single volume.
- C. Electronic Format
- 1. Provide all information (narratives, drawings and manual) on a Compact Disc (CD). Provide drawings and plans prepared for the O&M Manuals drawn electronically and saved as a PDF file. Name and index the files for ease of identification and updates.
  - 2. Provide the complete O&M Manual using Adobe Acrobat PDF (Portable Document Format) files. Each sheet shall be separately scanned into a PDF file, indexed, bookmarked, hyperlinked to the table of contents and recorded on a compact disc (CD). Scanned documents shall be scanned at 600 DPI or better. Indexes and bookmarks may be highlighted or colored text. The final submittal shall include written instructions for installing, accessing and retrieving information from the compact disc.
- D. Pre-Final Submittal: Submit two (2) printed sets of Pre-Final Operation and Maintenance Manuals, for review by the Project Manager, at least five (5) days prior to scheduled final inspection. Manuals shall be marked as Pre-Final. Make any correction noted before submitting the final Operation and Maintenance Manuals.
- 1. The user and the Department will each keep one copy of the Pre-Final submittal to operate and maintain the facility from the Project Acceptance Date through submission of the final submittal. Therefore, the submittal shall contain all the required information that is available at the time of submission.

2. One (1) set will be returned with comments. Additional review comments may include problems discovered during the O&M Manual's review, site validation, and facility start up and will be provided to the Contractor after facility Project Acceptance Date.

F. Final Submittal: Use the final submittal of the manuals to create the electronic PDF file version of the bound Operation and Maintenance Manuals documents. Include the Submittal (100 percent) review comments along with a response to each item. Provide four (4) Final sets of the printed manuals and 6 Final compact discs, (CDs) as part of the closing document submittal. Final printed manual and disks shall be marked as Final.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.01 DEMONSTRATION AND TRAINING

- A. Instruction: Instruct the State's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  1. Provide instructors experienced in operation and maintenance procedures.
  2. Provide instruction at mutually accepted times.
  3. Schedule training with the State's users, through the Project Manager with at least 7 days advanced notice.
  4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:
  1. System design and operational philosophy.
  2. Review of documentation.
  3. Operations.
  4. Adjustments.
  5. Troubleshooting.
  6. Maintenance.
  7. Repair.

### 3.02 FINAL [PROGRESSIVE] CLEANING

- A. General: Provide final cleaning. In addition to requirements of the GENERAL CONDITIONS conduct cleaning and waste-removal operations to comply with local laws and ordinances and federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturers written instructions unless noted otherwise. Complete the following cleaning operations before requesting final inspection for entire Project or for a portion of Project:
  - 1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  - 2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits resulting from construction activities.
  - 3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - 4. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - 5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - 6. Remove debris and surface dust from limited access spaces, including: roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - 7. Sweep concrete floors broom clean in unoccupied spaces.
  - 8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass surfaces, taking care not to scratch surfaces.
  - 9. Remove labels that are not permanent.
  - 10. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - 11. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - 12. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.



13. Replace disposable air filters and clean permanent air filters. Clean the exposed surfaces of diffusers, registers, and grills.
  14. Clean ducts and blowers if units were operated without filters during construction.
  15. Replace parts subject to unusual operating conditions.
  16. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  17. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the State's property. Do not discharge volatile, harmful, or dangerous materials into drainage and sewer systems or onto State property. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

## SECTION 02230 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Clearing.
  - 2. Removing site improvements.
  - 3. Removing tree stumps and large roots

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept 1986, Department of Public Works, City and County of Honolulu.
- B. For all work in the public right of way, refer to Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions.
- C. The measurement and payment sections in the Standard Specifications will not apply.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 CLEARING

- A. See Section 10 - "Standard Specifications for Public Works Construction", Department of Public Works, City and County of Honolulu, State of Hawaii, 1986.
- B. For Clearing work in the public right of way, refer to Section 201, "Clearing and Grubbing" in the HDOT Standard Specifications & Special Provisions.

#### 3.2 SITE IMPROVEMENTS

- A. Remove existing improvements as indicated and necessary to facilitate new construction.
- B. Remove pavements and/or sidewalks as indicated. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing sidewalk. Saw-cut faces vertically.

- C. Remove tree stumps identified on the plans, including large roots below the ground surface within the areas identified for pavement removal.

END OF SECTION

## SECTION 02300 - EARTHWORK

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Excavating and filling for rough grading the Site.
  - 2. Preparing subgrades for grasses, concrete pavement and foundations, and asphalt concrete pavement.
  - 3. Excavating and backfilling trenches for storm drainage, sewer, and water lines.
- B. Related Requirements:
  - 1. SECTION 02230 - SITE CLEARING for site stripping, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
  - 2. For work in the public right of way, see Sections 203 & 204 of the HDOT 2005 Standard Specifications & Special Provisions.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept 1986, Department of Public Works, City and County of Honolulu.
- B. For all work in the public right of way, refer to Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions.
- C. The measurement and payment sections in the Standard Specifications will not apply.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. See Sections 11 and 16 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work in the public right of way, see Sections 203 & 204 of the HDOT 2005 Standard Specifications & Special Provisions.

PART 3 - EXECUTION

3.1 EXECUTION

- A. See Sections 11, 12, and 16 - “Standard Specifications for Public Works Construction”, Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work in the public right of way, see Sections 203 & 204 of the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02310 - AGGREGATE BASE COURSE

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes aggregate base course for concrete pavement and asphalt concrete pavement.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. "Boilerplate Special Provisions", Department of Design and Construction, City and County of Honolulu.
- C. For all work in the public right of way, refer to Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions.
- D. The measurement and payment sections in the Standard Specifications will not apply.

### PART 2 - PRODUCTS

#### 2.1 AGGREGATE BASE COURSE

- A. See Section 31.2 - "Standard Specifications for Public Works Construction", Department of Public Works, City and County of Honolulu, State of Hawaii, 1986.
- B. For work in the public right of way, see Section 703 of the HDOT 2005 Standard Specifications & Special Provisions.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Section SP Amend 31.3, SECTION SP 31 – AGGREGATE BASE COURSE, "Boilerplate Special Provisions", Department of Design and Construction, City and County of Honolulu.
- B. For work in the public right of way, see Section 304 of the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02411 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 SUMMARY

Section Includes: Demolition and removal of selected portions of building or structure.

#### 1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

#### 1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
- C. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 4. Review areas where existing construction is to remain and requires protection.

## 1.5 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Project Manager of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

## 1.6 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner or tenant operations as much as possible.

## PART 2 – PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.
- C. Sustainable Design Requirements for Building Reuse:
  - 1. Maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.

## PART 3 – EXECUTION

### 3.1 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent materials and finishes within tenant spaces.



- B. Remove temporary barricades and protections where hazards no longer exist.

### 3.2 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

## SECTION 02512 - WATER SYSTEM

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the exterior water system on site from 5 feet beyond (outside of) the building or as indicated on the Drawings and specified herein.

#### 1.2 REFERENCE STANDARDS

- A. "Water System Standards", dated 2002, Board of Water Supply (BWS), City and County of Honolulu, hereafter referred to as the BWS Standards.
- B. For work within the public right of way, refer to the Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions

#### 1.3 SUBMITTALS

- A. Product Data: Furnish manufacturer's product data and certificates for pipe, valves, fittings, joints and couplings, valve boxes, hydrants, and reduced pressure backflow preventers.
- B. Test Results: Furnish test results as required by BWS Standards.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. All materials shall conform to the BWS Standards and "Standard Specification for Road and Bridge Construction", Section 624 - WATER SYSTEM, Paragraph 624.02.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION

- A. Refer to "Standard Specification for Road and Bridge Construction", Section 624 - WATER SYSTEM, Paragraph 624.03.
- B. For work within the public right of way, refer to Section 624 of the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02530 - SANITARY SEWERAGE

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. PVC pipe and fittings.
  - 2. Cleanouts.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work within the public right of way, refer to the Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions
- C. The measurement and payment sections in the Standard Specifications will not apply.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic pipe and fittings in direct sunlight.
- B. Protect pipe, fittings, cleanouts, and seals from dirt and damage.

### PART 2 - PRODUCTS

#### 2.1 PIPE AND FITTINGS

- A. See Section 21.2 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.

#### 2.2 CLEANOUTS

- A. Cleanouts: PVC body with brass countersunk plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping.

## PART 3 - EXECUTION

### 3.1 PIPING INSTALLATION

- A. See Section 21.3 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work within the public right of way, refer to Section 625 of the HDOT 2005 Standard Specifications & Special Provisions

### 3.2 CLEANOUT INSTALLATION

- A. Install cleanouts as indicated on the plans.

### 3.3 FIELD QUALITY CONTROL

- A. See Section 21.3 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work within the public right of way, refer to Section 625 of the HDOT 2005 Standard Specifications & Special Provisions
- C. Before Final Inspection, ensure sewer lines and structures are free from dirt, sand, silt or other obstructions.

END OF SECTION

## SECTION 02741 - ASPHALT CONCRETE PAVEMENT

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Cold planing of existing pavement.
  - 2. Asphalt surface treatment.
  - 3. Asphalt concrete pavement.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. "Boilerplate Special Provisions", Department of Design and Construction, City and County of Honolulu. <http://www.honolulu.gov/cms-ddc-menu/site-ddc-sitearticles/6393-boilerplate-special-provisions.html>
- C. Flexible Pavement Technical Guide TG 02740, Department of Accounting and General Services, State of Hawaii
- D. For all work in the public right of way, refer to the Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions.
- E. The measurement and payment sections in the Standard Specifications will not apply.

### PART 2 - PRODUCTS

#### 2.1 PRIME AND TACK COATS

- A. Prime Coat: See Section 33.2 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. Tack Coat: See Amend 33.2, SECTION SP 33 - ASPHALT SURFACE TREATMENT, "Boilerplate Special Provisions", Department of Design and Construction, City and County of Honolulu.
- C. For work in the public right of way, refer to Section 407 "Tack Coat" and Section 702 "Bituminous Material" in the HDOT 2005 Standard Specifications & Special Provisions.

## 2.2 ASPHALT

- A. See Section SP 34.2, SECTION SP 34 - ASPHALT CONCRETE PAVEMENT (CITY MIX IV), “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- B. For work in the public right of way, refer to Section 401 “Hot Mix Asphalt Pavement” and Section 702 “Bituminous Material” in the HDOT 2005 Standard Specifications & Special Provisions.

## PART 3 - EXECUTION

### 3.1 INSTALLATION AND FIELD QUALITY CONTROL:

- A. See SECTION SP 104 - COLD PLANING OF PAVEMENT, “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- B. See Amend 32.2, SP 34.4, SECTION SP 33 - ASPHALT SURFACE TREATMENT “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- C. See Sections SP 34.3 and SP 34.4, SECTION SP 34 - ASPHALT CONCRETE PAVEMENT (CITY MIX IV), “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- D. For work in the public right of way, refer to Division 400, “Pavements” in the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02763 - PAVEMENT MARKINGS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes pavement striping.

#### 1.2 REFERENCE STANDARDS

- A. “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu. <http://www.honolulu.gov/cms-ddc-menu/site-ddc-sitearticles/6393-boilerplate-special-provisions.html>
- B. For work in the public right of way, refer to the Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions
- C. The measurement and payment sections in the Boilerplate Special Provisions will not apply.

### PART 2 - PRODUCTS

#### 2.1 PAVEMENT MARKINGS

- A. See SECTION SP 61 - PAVEMENT MARKERS, STRIPING AND MARKINGS, “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- B. For work in the public right of way, refer to Section 755 “Pavement Marking Materials” of the HDOT 2005 Standard Specifications & Special Provisions.

### PART 3 - EXECUTION

#### 3.1 PLANTING

- A. See SECTION SP 61 - PAVEMENT MARKERS, STRIPING AND MARKINGS, “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- B. For work in the public right of way, refer to Section 629 “Pavement Markings” of the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02770 - CURBS AND GUTTERS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes concrete curbs and gutters.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. "Boilerplate Special Provisions", Department of Design and Construction, City and County of Honolulu.
- C. For work within the public right of way, refer to the Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions
- D. The measurement and payment sections in the Standard Specifications will not apply.

#### 1.3 SUBMITTALS

- A. Product Data: Submit batch ticket for proposed material. Submit gradation report.
- B. Mix Design: Submit mix design for proposed concrete.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE AND FORMS

- A. See Section 41.2 - "Standard Specifications for Public Works Construction", Sept. 1986, Department of Public Works, City and County of Honolulu.
- B. For work within the public right of way, refer to Section 638 of the HDOT 2005 Standard Specifications & Special Provisions.



PART 3 - EXECUTION

3.1 INSTALLATION AND FIELD QUALITY CONTROL

- A. See Sections SP 41.1 DESCRIPTION and SP 41.3 DETAILS, SECTION SP 41 - CONCRETE CURB AND GUTTER “Boilerplate Special Provisions”, Department of Design and Construction, City and County of Honolulu.
- B. For work within the public right of way, refer to Section 638 of the HDOT 2005 Standard Specifications & Special Provisions.

END OF SECTION

## SECTION 02920 - LAWNS AND GRASSES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes restoration of grass landscaping disturbed during construction activities.

#### 1.2 REFERENCE STANDARDS

- A. "Standard Specifications for Public Works Construction", Sept 1986, Department of Public Works, City and County of Honolulu.
- B. Lawns and Grasses Technical Guide TG 02920, Department of Accounting and General Services, State of Hawaii
- C. For work within the public right of way, refer to Hawaii Department of Transportation 2005 Standard Specifications & Special Provisions.
- D. The measurement and payment sections in the Standard Specifications will not apply.

### PART 2 - PRODUCTS

#### 2.1 GRASS

- A. See Section 51.2 – "Standard Specifications for Public Works Construction", Department of Public Works, City and County of Honolulu, State of Hawaii, 1986.
- B. See Section 6.2 – Technical Guide TG 02920

### PART 3 - EXECUTION

#### 3.1 PLANTING

- A. See Section 51.4 - "Standard Specifications for Public Works Construction", Department of Public Works, City and County of Honolulu, State of Hawaii, 1986.

3.2 MAINTENANCE

- A. See Section 51.5 - “Standard Specifications for Public Works Construction”, Department of Public Works, City and County of Honolulu, State of Hawaii, 1986.

END OF SECTION

## SECTION 07210 - THERMAL INSULATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

### PART 2 – PRODUCTS

- A. Insulation shall be provided to meet the requirements indicated. A single layer of insulation shall be used unless attaining the R-Values indicated cannot be accomplished with a single layer of insulation.
- B. Fiberglass batts, with integral vapor barrier one side.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

#### 3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Install insulation with manufacturer's R-value label exposed after insulation is installed.

- D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

### 3.3 INSTALLATION OF INSULATION

- A. Blanket Insulation: Install in exterior walls around the toilet rooms, as indicated. Install in cavities formed by framing members according to the following requirements:
  1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
  2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
  3. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.
  4. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.

### 3.4 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
- B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

## SECTION 07461 - STEEL SIDING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Steel siding.
2. Steel soffit.

#### 1.2 COORDINATION

- A. Coordinate siding installation with flashings and other adjoining construction to ensure proper sequencing.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1. Steel siding.
2. Steel soffit.

- B. Samples for Initial Selection: For steel siding soffit including related accessories.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of steel siding soffit.
- B. Research/Evaluation Reports: For each type of steel siding required, from ICC-ES.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of product, including related accessories, to include in maintenance manuals.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with labels intact until time of use.
- B. Store materials on elevated platforms, under cover, and in a dry location.

## 1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including cracking and deforming.
    - b. Deterioration of metals and other materials beyond normal weathering.
    - c. Deterioration of metal finishes, including chalking and fading.
  - 2. Warranty Period: 25 years from date of Substantial Completion.
  - 3. Warranty Period for Chalking and Fading: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

- A. Obtain products, including related accessories, from single source from single manufacturer.

### 2.2 STEEL SIDING

- A. Steel Siding: Formed product in continuous lengths without end joints, made from galvanized steel complying with ASTM A653/A653M, G90 coating.
- B. Vertical Pattern: 12-inch exposure in board-and-batten, single V-grooved, double-board style.
- C. Nominal Thickness: 0.017 inch 0.019 inch.
- D. Finish: Manufacturer's standard primer and heat-fused PVC.
  - 1. Colors: The final selection shall be made by Contracting Officer from manufacturer's standard full range of colors.

## 2.3 STEEL SOFFIT

- A. Steel Soffit: Formed product made from galvanized steel complying with ASTM A653/A653M, G90 coating.
- B. Pattern: 12-inch exposure in board-and-batten, single V-grooved, double-board style.
- C. Nominal Thickness: 0.017 inch 0.019 inch Insert dimension.
- D. Finish: Manufacturer's standard primer and heat-fused PVC Insert requirement.
  - 1. Colors: The final selection shall be made by Contracting Officer from manufacturer's standard full range of colors.

## 2.4 ACCESSORIES

- A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.
  - 1. Provide accessories made from same material as adjacent siding unless otherwise indicated.
- B. Decorative Accessories: Provide the following steel decorative accessories as indicated:
  - 1. Fasciae.
  - 2. Moldings and trim.
- C. Colors for Decorative Accessories: The final selection shall be made by Contracting Officer from manufacturer's standard full range of colors.
- D. Flashing: Provide flashing complying with Section 076200 "Sheet Metal Flashing and Trim" at window and door heads and where indicated.
- E. Fasteners:
  - 1. For fastening to metal, use ribbed stainless steel bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch, or three screw-threads, into substrate.
  - 2. For fastening galvanized steel, use stainless steel-steel fasteners. Where fasteners are exposed to view, use prefinished stainless-steel fasteners in color to match item being fastened.
- F. Insect Screening for Soffit Vents: PVC-coated, glass-fiber fabric, 18-by-14 or 18-by-16 mesh Insert requirement.



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of steel siding soffit and related accessories.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

### 3.3 INSTALLATION OF STEEL SIDING AND SOFFIT

- A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
  - 1. Center nails in elongated nailing slots without binding siding to allow for thermal movement.
- B. Install joint sealants as specified in Section 079200 "Joint Sealants" and to produce a weathertight installation.
- C. Where steel siding contacts dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.

### 3.4 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION

## SECTION 07610 - SHEET METAL ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Metallic-coated steel sheet.
  - 2. Fasteners.
  - 3. Sealant tape.
  - 4. Elastomeric sealant.
  - 5. Butyl sealant.

#### 1.2 COORDINATION

- A. Coordinate sheet metal roofing layout and seams with sizes and locations of roof curbs, equipment supports, equipment provided, and roof penetrations.
- B. Coordinate sheet metal roofing installation with rain drainage work, flashing, trim, and construction of roofing substrate, parapets, walls, and other adjoining work to provide leakproof, secure, and noncorrosive installation.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review structural loading limitations of substrates during and after roofing installation.
  - 3. Review insulation, air barrier, vapor retarder, and underlayment requirements.
  - 4. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affect sheet metal roofing.
  - 5. Review requirements for insurance and certificates if applicable.
  - 6. Review roof observation and repair procedures after sheet metal roofing installation.

#### 1.4 SUBMITTALS

##### A. Product Data:

1. Metallic-coated steel sheet.
2. Fasteners.
3. Sealant tape.
4. Elastomeric sealant.
5. Butyl sealant.

##### B. Shop Drawings:

1. Include details of expansion joints of gutters, including showing direction of expansion and contraction from points of fixity.

##### C. Samples for Initial Selection: For each type of sheet metal with factory-applied finishes.

1. Include Samples of trim and accessories involving finish or color selection.

#### 1.5 CLOSEOUT SUBMITTALS

##### A. Maintenance Data: For roofing sheet metals and accessories to include in maintenance manuals.

##### B. Special warranties.

#### 1.6 QUALITY ASSURANCE

##### A. Sheet Metal Roofing Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal roofing similar to that required for this Project and whose products have a record of successful in-service performance.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

##### A. Do not store sheet metal roofing materials in contact with other materials that might cause staining, denting, or other surface damage.

1. Store sheet metal roofing materials away from uncured concrete and masonry.
2. Protect stored sheet metal roofing materials from contact with water.

##### B. Protect strippable protective covering on sheet metal roofing from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal roofing installation.

## 1.8 WARRANTY

- A. Special Warranty: Warranty form at end of this Section in which Installer agrees to repair or replace components of sheet metal roofing that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Structural failures, including, but not limited to, rupturing, cracking, or puncturing.
    - b. Wrinkling or buckling.
    - c. Loose parts.
    - d. Failure to remain weathertight, including uncontrolled water leakage.
    - e. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including nonuniformity of color or finish.
    - f. Galvanic action between sheet metal roofing and dissimilar materials.
  2. Warranty Period: Five years from date of Substantial Completion.
- B. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal roofing that shows evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Sheet metal roofing system, including, but not limited to, metal roof panels, cleats, anchors and fasteners, sheet metal flashing integral with sheet metal roofing, fascia panels, trim, battens, underlayment, and accessories, is to comply with requirements without failure due to defective manufacture, fabrication, or installation, or due to other defects in construction. Sheet metal roofing is to remain watertight.

- B. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or indicated on Drawings.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
  - 1. Temperature Change: 40 deg F, ambient; 180 deg F, material surfaces.

## 2.2 ROOFING SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 or coating designation aluminum-zinc alloy-coated steel sheet in accordance with ASTM A792/A792M, Class AZ50 coating designation. Prepainted by coil-coating process to comply with ASTM A755/A755M.
  - 1. Thickness: Nominal 0.022 inch 0.028 inch
  - 2. Exposed Coil-Coated Finish:
    - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.
  - 3. Color: As selected by Architect from manufacturer's full range.
  - 4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
  - 5. Thickness: 0.0156 inch 0.0188 inch unless otherwise indicated.

## 2.3 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete roofing system and as recommended by primary sheet metal manufacturer unless otherwise indicated.
  - 1. Fasteners for Zinc-Coated (Galvanized) or Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel in accordance with ASTM A153/A153M.

- B. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- C. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polysulfide silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal roofing and remain watertight.
- D. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- E. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187.

## 2.4 ACCESSORIES

- A. Sheet Metal Accessories: Provide components required for complete sheet metal roofing assembly, including trim, fasciae, corner units, clips, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items. Match material and finish of sheet metal roofing unless otherwise indicated.
  - 1. Cleats: Intermittent and continuous attachment devices for mechanically seaming into joints and formed from the following materials and thicknesses unless otherwise indicated:
    - a. Metallic-Coated Steel or Aluminum: 0.0250-inch- thick stainless steel.
  - 2. Backing Plates: Plates at roofing splices, fabricated from material recommended by SMACNA's "Architectural Sheet Metal Manual."
  - 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible-closure strips; cut or premolded to match sheet metal roofing profile. Provide closure strips where necessary to ensure weathertight construction.
  - 4. Flashing and Trim: Formed from same material and with same finish as sheet metal roofing, minimum 0.018 inch thick.
- B. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base.

## 2.5 FABRICATION

- A. Custom-Fabricated Sheet Metal Roofing: Comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions (panel width and seam height), geometry, metal thickness, and other characteristics of installation. Fabricate sheet metal roofing and accessories in shop to greatest extent possible.

- B. Fabrication Tolerances: Fabricate sheet metal roofing that is capable of installation to tolerances specified in MCA's "Metal Roof Installation Manual."
- C. Form exposed sheet metal work to fit substrates with little oil canning; free of buckling and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  - 1. Lay out sheet metal roofing, so transverse seams, if required, are made in direction of flow, with higher panels overlapping lower panels.
  - 2. Form and fabricate sheets, seams, strips, cleats, valleys, ridges, edge treatments, integral flashings, and other components of metal roofing to profiles, patterns, and drainage arrangements indicated on Drawings and as required for leakproof construction.
- D. Expansion Provisions: Fabricate sheet metal roofing to allow for expansion in running work sufficient to prevent leakage, damage, and deterioration of the Work.
  - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
  - 2. Use lapped expansion joints only where indicated on Drawings.
- E. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant in accordance with SMACNA's "Architectural Sheet Metal Manual."
- F. Sheet Metal Accessories: Custom fabricate flashings and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item required. Obtain field measurements for accurate fit before shop fabrication.
  - 1. Form exposed sheet metal accessories without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
- G. Do not use graphite pencils to mark metal surfaces.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
  - 1. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

- B. Examine roughing-in for components and systems penetrating sheet metal roofing to verify actual locations of penetrations relative to seam locations of sheet metal roofing before installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Install sheet metal roofing to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to installation characteristics required unless otherwise indicated on Drawings.
  - 1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required for complete roofing system.
  - 2. Install sheet metal roofing true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of sealant.
  - 3. Anchor sheet metal roofing and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 4. Do not field cut sheet metal roofing by torch.
  - 5. Provide metal closures at peaks, rake edges, rake walls (eaves) and each side of ridge caps.
  - 6. Flash and seal sheet metal roofing with closure strips at eaves, rakes, and perimeter of all openings. Fasten with self-tapping screws.
  - 7. Locate and space fastenings in uniform vertical and horizontal alignment. Predrill panels for fasteners.
  - 8. Install ridge caps as sheet metal roofing work proceeds.
  - 9. Lap metal flashing over sheet metal roofing to direct moisture to run over and off roofing.
  - 10. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating, by applying self-adhering sheet underlayment to each contact surface, or by other permanent separation as recommended in SMACNA's "Architectural Sheet Metal Manual."



- C. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- D. Fasciae:
  - 1. Align bottom of sheet metal roofing and fasten with blind rivets, bolts, or self-tapping screws.
  - 2. Flash and seal sheet metal roofing with closure strips where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

### 3.3 INSTALLATION OF ACCESSORIES

- A. Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion.
  - 1. Coordinate installation with flashings and other components.
  - 2. Install components required for complete sheet metal roofing assembly, including trim, seam covers, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items.
- B. Flashing and Trim: Comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual."
  - 1. Provide concealed fasteners where possible, and install units true to line, levels, and slopes.
  - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
  - 3. Install flashing and trim as required to seal against weather and to provide finished appearance, including, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
  - 4. Install continuous strip of self-adhering underlayment at edge of continuous flashing overlapping self-adhering underlayment, where "continuous seal strip" is indicated in SMACNA's "Architectural Sheet Metal Manual" and on Drawings.
  - 5. Install exposed flashing and trim without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  - 6. Install sheet metal flashing and trim to fit substrates, and to result in waterproof and weather-resistant performance.
  - 7. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.

- a. Space expansion joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
  - b. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, and filled with butyl sealant concealed within joints.
  - c. Use lapped expansion joints only where indicated on Drawings.
- C. Pipe Flashing: Form flashing around pipe penetration and sheet metal roofing. Fasten and seal to sheet metal roofing as recommended in SMACNA's "Architectural Sheet Metal Manual."

### 3.4 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal roofing within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

### 3.5 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. On completion of sheet metal roofing installation, clean finished surfaces as recommended by sheet metal roofing manufacturer.
- C. Clean off excess sealants.

### 3.6 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal roofing is installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Prohibit traffic of any kind on installed sheet metal roofing.
- C. Maintain sheet metal roofing in clean condition during construction.
- D. Replace sheet metal roofing components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

### 3.7 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

- 1. Owner: Hawaii Army National Guard
- 2. Owner's Address: <Insert address>.

3. Building Name/Type: <Insert information>.
  4. Building's Address: Kalaeloa,
  5. Area of Work: All of facility 90T
  6. Acceptance Date: <Insert date>.
  7. Warranty Period: <Insert time>.
  8. Expiration Date: <Insert date>.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    - a. Lightning;
    - b. Peak gust wind speed exceeding 130 mph;
    - c. Fire;
    - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. Faulty construction of parapet walls, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    - f. Vapor condensation on bottom of roofing; and
    - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
  2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
  3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this **<Insert day>** day of **<Insert month>**, **<Insert year>**.

1. Authorized Signature: **<Insert signature>**.
2. Name: **<Insert name>**.
3. Title: **<Insert title>**.

END OF SECTION

## SECTION 07920 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
  - 2. When joint substrates are wet.
  - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

#### 1.2 SUBMITTALS

- A. Product Data: Provide manufacturer's product data and specifications for each type of sealant required.
- A. Sample: Submit sets of color finish samples for each type of sealant required.

### PART 2 - PRODUCTS

#### 2.1 SOURCE LIMITATIONS

- A. Obtain joint sealants from single manufacturer.
- B. Exterior sealant shall be one-part polyurethane.
- C. Interior sealant shall be silicon modified acrylic.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
  - a. Concrete.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
  - a. Metal.
  - b. Glass.
  - c. Solid surfacing materials

- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that 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.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint profile in accordance with Figure 8A in ASTM C1193 unless otherwise indicated.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION



## SECTION 08111 - STEEL DOORS AND FRAMES

### PART 1 - GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

##### AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2020; Errata 1 2021) Structural Welding Code - Steel

##### ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M (2020) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM A879/A879M (2012; R 2017) Standard Specification for Steel Sheet, zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface

ASTM A924/A924M (2022) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

ASTM C578 (2019) Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation

ASTM C591 (2021) Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation

ASTM C612 (2014; R 2019) Standard Specification for Mineral Fiber Block and Board Thermal Insulation

ASTM D2863 (2019) Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)

ASTM E1300 (2016) Standard Practice for Determining Load Resistance of Glass in Buildings  
ASTM F2248 (2012) Standard Practice for Specifying an Equivalent 3-Second Duration Design Loading for Blast Resistant Glazing Fabricated with Laminated Glass

##### BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.115 (2016) Hardware Preparation in Steel Doors and Steel Frames

## STEEL DOOR INSTITUTE (SDI/DOOR)

SDI/DOOR 111	(2009) Recommended Details for Standard Steel Doors, Frames, and Accessories and Related Components
SDI/DOOR 113	(2013; R2018) Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door and Frame Assemblies
SDI/DOOR A250.6	(2015) Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames
SDI/DOOR A250.8	(2017) Specifications for Standard Steel Doors and Frames
SDI/DOOR A250.11	(2012) Recommended Erection Instructions for Steel Frames

## U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 4-010-01	(2018; with Change 1, 2020) DoD Minimum Antiterrorism Standards for Buildings
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### 1.2 SUBMITTALS

- A. Product Data: For each product include construction details, material descriptions, core descriptions, and finishes.

### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors, frames, and accessories undamaged and with protective wrappings or packaging. Provide temporary steel spreaders securely fastened to the bottom of each welded frame. Store doors and frames on splatforms under cover in clean, dry, ventilated, and accessible locations, with 1/4 inch airspace between doors. Remove damp or wet packaging immediately and wipe affected surfaces dry. Replace damaged materials with new.

## PART 2 PRODUCTS

### 2.1 STANDARD STEEL DOORS

- A. SDI/DOOR A250.8, except as specified otherwise. Prepare doors to receive door hardware as specified in Section 08 71 00 DOOR HARDWARE. Undercut where indicated. Provide exterior doors with top edge closed flush and sealed to prevent water intrusion. Provide doors at 1-3/4 inch thick, unless otherwise indicated. Provide door material that uses a minimum of 25 percent recycled content. Provide data indicating percentage of recycled content for steel door product. Provide exterior glazing in accordance with ASTM F2248 and ASTM E1300. Exterior doors must be tested in accordance with ASTM F2247 or ASTM F2927 to meet requirements of UFC 4-010-01.
- B. Classification - Level, Performance, Model

1. Maximum Duty Doors
2. SDI/DOOR A250.8, Level 4, physical performance Level A, Model 2 with core construction as required by the manufacturer for interior doors and for indicated exterior doors, of size(s) and design(s) indicated.

## 2.2 ACCESSORIES

- A. Provide moldings around glass of interior and exterior doors. Provide nonremovable moldings on outside of exterior doors. Other moldings may be stationary or removable. Secure inside moldings to stationary moldings, or provide snap on moldings.

## 2.3 INSULATION CORES

- A. Provide insulating cores at all exterior doors, and provide an apparent U-factor of .48 in accordance with SDI/DOOR 113 and conforming to:
  1. Rigid Cellular Polyisocyanurate Foam: ASTM C591, Type I or II, foamed-in-place or in board form, with oxygen index of not less than 22 percent when tested in accordance with ASTM D2863; or
  2. Rigid Polystyrene Foam Board: ASTM C578, Type I or II; or
  3. Mineral board: ASTM C612, Type I.

## 2.4 STANDARD STEEL FRAMES

- A. SDI/DOOR A250.8, Level 4, except as otherwise specified. Form frames to sizes and shapes indicated, with welded corners. Provide steel frames for doors and sidelights unless otherwise indicated. Provide frame product that uses a minimum of 25 percent recycled content. Provide data indicating percentage of recycled content for steel frame product.

### B. Welded Frames

1. Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.
2. Weld frames in accordance with the recommended practice of the Structural Welding Code Sections 1 through 6, AWS D1.1/D1.1M and in accordance with the practice specified by the producer of the metal being welded.

### C. Stops and Beads

1. Provide form and loose stops and beads from 20 gage steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space fasteners approximately 12 to 16 inch on center. Miter molded shapes at corners. Butt or miter square or rectangular beads at corners.

### D. Cased Openings

1. Fabricate frames for cased openings of same material, gage, and assembly as specified for metal door frames, except omit door stops and preparation for hardware.

### E. Anchors

1. Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-

coated not lighter than 18 gage.

#### F. Wall Anchors

1. Provide at least three anchors for each jamb. For frames which are more than 7.5 feet in height, provide one additional anchor for each jamb for each additional 2.5 feet or fraction thereof.
  - a. Stud partitions: Weld or otherwise securely fasten anchors to backs of frames. Design anchors to be fastened to closed steel studs with sheet metal screws, and to open steel studs by wiring or welding;

#### G. Floor Anchors

1. Provide floor anchors drilled for 3/8 inch anchor bolts at bottom of each jamb member.

### 2.6 EXTERIOR FRAMES

- A. Provide thermal insulation in all exterior frames. Provide frames of a minimum Level 4, with frames of a minimum thickness of 0.067 inch, 14 gage.

### 2.7 HARDWARE PREPARATION

- A. Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of SDI/DOOR A250.8 and SDI/DOOR A250.6. For additional requirements refer to ANSI/BHMA A156.115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Punch door frames, with the exception of frames that will have weatherstripping gasketing, to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

### 2.8 FINISHES

#### A. Hot-Dip Zinc-Coated and Factory-Primed Finish

1. Fabricate doors and frames from hot dipped zinc coated steel, alloyed type, that complies with ASTM A924/A924M and ASTM A653/A653M. The coating weight must meet or exceed the minimum requirements for coatings having 0.4 ounces per square foot, total both sides, i.e., A40. Repair damaged zinc-coated surfaces by the application of zinc dust paint. Thoroughly clean and chemically treat to insure maximum paint adhesion. Factory prime as specified in SDI/DOOR A250.8.

#### B. Electrolytic Zinc-Coated Anchors and Accessories

1. Provide electrolytically deposited zinc-coated steel in accordance with ASTM A879/A879M, Commercial Quality, Coating Class A. Phosphate treat and factory prime zinc-coated surfaces as specified in SDI/DOOR A250.8.

### 2.9 FABRICATION AND WORKMANSHIP

- A. Provide finished doors and frames that are strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Provide molded members that are clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall

construction indicated. Corner joints must be well formed and in true alignment. Conceal fastenings where practicable.

## 2.10 PROVISIONS FOR GLAZING

- A. Materials are specified in Section 08 81 00, GLAZING.

## PART 3 EXECUTION

### 3.1 INSTALLATION

#### A. Frames

- 1. Set frames in accordance with SDI/DOOR A250.11. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction.

#### B. Doors

- 1. Hang doors in accordance with clearances specified in SDI/DOOR A250.8. After erection and glazing, clean and adjust hardware.

### 3.2 PROTECTION

- A. Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat.

### 3.3 CLEANING

- A. Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove mastic smears and other unsightly marks.

END OF SECTION

## SECTION 08511 - ALUMINUM WINDOWS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes aluminum windows for exterior locations

#### 1.3 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.
- B. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- C. Review, discuss, and coordinate the interrelationship of aluminum windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes
- D. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
- E. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.
- B. Shop Drawings: For aluminum windows.
  - 1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

## 1.5 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.
- B. **Installer Qualifications:** An installer acceptable to aluminum window manufacturer for installation of units required for this Project.

## 1.6 WARRANTY

- A. **Manufacturer's Warranty:** Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.
- B. **Failures include, but are not limited to, the following:**
  - 1. Failure to meet performance requirements.
  - 2. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
  - 3. Faulty operation of movable sash and hardware.
  - 4. Deterioration of materials and finishes beyond normal weathering.
  - 5. Failure of insulating glass.
- C. **Warranty Period:**
  - 1. Window: 10 years from date of Substantial Completion.
  - 2. Glazing Units: 10 years from date of Substantial Completion.
  - 3. Aluminum Finish: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- C. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

### 2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Window Certification: AAMA certified with label attached to each window.
- D. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
  - 1. Minimum Performance Class: CW or AW as required to meet impact rating.
  - 2. Minimum Performance Grade: minimum 30
  - 3. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.60 Btu/sq. ft. x h x deg F
- E. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.27
  - 2. Temperature Change: 30 deg F ambient; 120 deg F material surfaces
- F. Windborne-Debris Impact Resistance: Passes ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 1 for basic protection
  - 1. Large-Missile Test: For glazing located within 30 feet of grade.

### 2.3 ALUMINUM WINDOWS

- A. Subject to compliance with requirements, provide products by the following.
  - Arcadia
  - EFCO
  - Fleetwood
  - Kawneer
  - Quaker Windows and Doors
- B. Frames and Sashes: Aluminum extrusions complying with AAMA/WDMA/CSA 101/I.S.2/A440.



- C. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact.
- D. Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C1172 with two plies of float glass.
- E. Laminated Float Glass: As required by performance requirements indicated.
  - 1. Inner Ply: Clear.
  - 2. Interlayer: As required by performance requirements indicated.
  - 3. Outer Ply: Clear
  - 4. Low-E Coating: Pyrolytic on second surface
- F. Insulating-Glass Units: ASTM E2190.
  - 1. Glass: ASTM C1036, Type 1, Class 1, q3. Tint: Clear
  - 2. Lites: As indicated.
  - 3. Low-E Coating: Pyrolytic on second surface
- G. Windborne-Debris-Impact-Resistant Insulating-Glass Units: ASTM E2190 with two lites and complying with impact-resistance requirements in "Window Performance Requirements" Article.
  - 1. Exterior Lite: ASTM C1036, Type 1, Class 1, q3. Tint: Clear
  - 2. Interior Lite: ASTM C1172 clear laminated glass with two plies of float glass.
  - 3. Float Glass: As required by performance requirements indicated.
  - 4. Interlayer Thickness: As required by performance requirements indicated.
- H. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.
- I. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
  - 1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

## 2.4 FABRICATION

- A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
- B. Glaze aluminum windows in the factory.

- C. Weather strip each operable sash to provide weathertight installation.
- D. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.
- E. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- F. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation.

## 2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.6 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker) complying with AAMA 611.
  - 1. Color: Medium bronze

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.
- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

### 3.2 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
  - 1. Keep protective films and coverings in place until final cleaning.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION

## SECTION 08710 - DOOR HARDWARE

### PART 1 - GENERAL

#### 1.1 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

#### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's descriptive literature along with schedule.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Project Manager.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of door hardware from single manufacturer.
  - 1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- B. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the USDOJ's "2010 ADA Standards for Accessible Design".

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
  2. Comply with the following maximum opening-force requirements:
    - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
  3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
  4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
- C. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Project Manager.
1. Manufacturer's identification is permitted on rim of lock cylinders only.
- D. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- E. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.
1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
  2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
  3. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

### 2.3 KEYING

- A. All door locksets shall be unlocked with one master key.
- B. Doors to the Men's and Women's Rooms shall be keyed separately.
- C. All other doors shall be keyed alike.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accordance with ANSI/SDI A250.6.

### 3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights **to** comply with the following unless otherwise indicated or required to comply with governing regulations.
  - 1. Standard Steel Frames: ANSI/SDI A250.8.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
  - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

### 3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.

### 3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

### 3.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

### 3.7 HARDWARE SETS

#### HDWE 01 (DOORS 103, 104, 106, 115, 116, 117, 201, 202))

##### EXIST HDWE

#### HDWE 02 (DOOR 102)

6 EA	HINGES	REUSE EXIST HINGES	
1 EA	LOCKSET	F04 LEVER	630
2 EA	SURFACE BOLTS		630

#### HDWE 03 (DOORS 101,105,107,108,109,111,112)

3 EA	HINGES	A5111 4.5 X 4.5 NRP	630
1 EA	CLOSER	CO2011 PT4A, B, C, D, H FULL COVER	
1 EA	LOCKSET	F04 LEVER	630

#### HDWE 04 (DOORS 113, 114)

3 EA	HINGES	A5111 4.5 X 4.5 W/ FO7 X LEVER	630
1 EA	CLOSER	CO2011 PT4A, B, C, D, H FULL COVER	
1 EA	PUSH AND PULL PLATES	E09211	630
1 EA	DEADBOLT	BR260 SERIES	630

#### HDWE 05 (DOORS 120, 121, 122, 123)

3 EA	HINGES	A5111 4.5 X 4.5	630
1 EA	LOCKSET	F04 LEVER	630
1 EA	WALL STOP		630

HDWE 06 (DOORS 118, 119, 124, 125)

3 EA	HINGES	A5111 4.5 X 4.5	630
1 EA	LOCKSET	F04 LEVER	630
1 EA	CLOSER	CO2011 4A, B, C, D, H FULL COVER	

HDWE 07 (DOORS 126)

3 EA	HINGES	A5111 4.5 X 4.5	630
1 EA	DEADBOLT	BR260 SERIES	630
1 EA	PULL	6" LONG, 3/4" DIAMETER	630

HDWE 08 (DOORS 110)

BY MANUFACTURER

END OF SECTION



## SECTION 08800 - GLAZING

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters in accordance with ASTM C1036.
- C. IBC: International Building Code.
- D. Interspace: Space between lites of an insulating-glass unit.

#### 1.2 SUBMITTALS

- A. Samples: submit minimum 4-inch x 4-inch sample of obscure laminated glass

#### 1.3 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials in accordance with manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

#### 1.4 FIELD CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
  - 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F.

## PART 2 - PRODUCTS

### PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:
  - 1. Design Wind Pressures: Determine design wind pressures applicable to Project in accordance with ASCE/SEI 7, based on heights above grade indicated on Drawings.
    - a. Basic Wind Speed: 110 mph
  - 2. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.
- C. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
  - 1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
  - 2. For laminated-glass lites, properties are based on products of construction indicated.
  - 3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
  - 4. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F.
  - 5. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
  - 6. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

## 2.2 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
  - 1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
    - a. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces

## PART 3 – EXECUTION

### 3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
  - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
  - 2. Presence and functioning of weep systems.
  - 3. Minimum required face and edge clearances.
  - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

### 3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches.
  - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
  - 2. Provide 1/8-inch- minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.

#### GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.

- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

#### CLEANING AND PROTECTION

- A. Immediately after installation, remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
  - 1. If, despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

#### GLASS SCHEDULE

- A. Clear Insulating, Laminated Glass Type
  - 1. Overall Unit Thickness: 3/4 inch
  - 2. Minimum Thickness of Outdoor Lite: 6 mm
  - 3. Outdoor Lite: Clear float or tempered glass, as indicated.
  - 4. Interspace Content: Argon.
  - 5. Indoor Lite: Clear laminated glass with two plies of float glass.
    - a. Interlayer Thickness: 0.030 inch.
  - 6. Safety glazing required where indicated.

END OF SECTION

## SECTION 08911 - FIXED LOUVERS

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.
- B. Horizontal Louver: Louver with horizontal blades (i.e., the axis of the blades are horizontal).
- C. Wind-Driven-Rain-Resistant Louver: Louver that provides specified wind-driven-rain performance, as determined by testing in accordance with AMCA 500-L.

#### 1.2 SUBMITTALS

- A. Product Data: Manufacturer's technical product data, installation instructions, and general recommendations for each fabricated product.

#### 1.3 FIELD CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain fixed louvers from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. All exposed louver materials shall be fluoropolymer-coated aluminum. Color shall be selected from manufacturer's list of standard colors.
- B. Structural Performance: Louvers withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures are considered to act normal to the face of the building.

1. Wind Loads:

- a. Determine loads based on a uniform pressure of  $V_{ult}=130$  mph, acting inward or outward.

- C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width in accordance with AMCA 500-L.
- D. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

2.3 FABRICATION

- A. Factory assemble louvers to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.
- C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.
1. Frame Type: Channel unless otherwise indicated.
- D. Include supports, anchorages, and accessories required for complete assembly.
- E. Provide subsills made of same material as louvers for recessed louvers.
- F. Join frame members to each other and to fixed louver blades with fillet welds concealed from view, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

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

### 3.3 INSTALLATION

- A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.
- E. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.
- F. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

### 3.4 ADJUSTING AND CLEANING

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

END OF SECTION



## SECTION 09290 - GYPSUM BOARD

### PART 1 - GENERAL

#### 1.1 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

#### 1.2 SUBMITTALS

- A. Product Data: Manufacturer's material description and recommended installation procedures for each material.

#### 1.3 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

### PART 2 - PRODUCTS

#### 2.1 SOURCE LIMITATIONS

- A. Obtain each type of gypsum panel and joint finishing material from single source with resources to provide products of consistent quality in appearance and physical properties.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

## 2.3 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 2.4 INSTALLATION AND FINISHING OF PANELS, GENERAL

- A. Comply with ASTM C840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
  - 2. Fit gypsum panels around ducts, pipes, and conduits.
  - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.
- J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

## 2.4 FINISHING OF GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- E. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- F. Remove and replace panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

## SECTION 09301 - CERAMIC TILING

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. Face Size: Actual tile size

#### 1.2 SUBMITTALS

- A. Product Data: Provide manufacturer's data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- B. Samples: Provide two (2) samples of tile and accessories.

#### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

#### 1.4 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

### PART 3 – EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

### 3.2 PREPARATION

- A. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

### 3.3 INSTALLATION OF CERAMIC TILE

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Accurately form intersections and returns. No cutting and drilling of individual tiles. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- C. Where accent tile differs in thickness from solid surfacing, vary setting-bed thickness so that tiles are installed as indicated.
- D. Joint Pattern: Lay tile in grid pattern.
  - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
  - 2. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

### 3.4 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.

- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
  - 1. Remove grout residue from tile as soon as possible.
  - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

### 3.5 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION

## SECTION 09911 - EXTERIOR PAINTING (MPI STANDARDS)

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Surface preparation and application of paint systems on exterior substrates.
  - a. Exterior steel outriggers and purlins.
  - b. Exterior doors that are not prefinished.
  - c. Steel bollards

#### 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
- E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include preparation requirements and application instructions.

2. Product Data: For paints and coatings, indicating VOC content.

## 1.5 QUALITY ASSURANCE

MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

## 1.6 DELIVERY, STORAGE, AND HANDLING

1. Store materials not in use in tightly covered containers in well-ventilated areas.
2. Maintain containers in clean condition, free of foreign materials and residue.
3. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

- A. Do not apply paints in rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- B. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by available manufacturers offering products that may be incorporated into the Work.
- B. Source Limitations: Obtain paint from single source from single manufacturer.

### 2.2 PAINT PRODUCTS

- A. Material Compatibility:
  1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.



2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. MPI Standards: Provide products complying with MPI standards indicated and listed in its "MPI Approved Products List."
  - C. VOC Content: For field applications, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
    1. Nonflat Paints and Coatings: 50 g/L.
    2. Primers, Sealers, and Undercoaters: 100 g/L
  - D. Rust-Preventive Coatings: 100 g/L Colors: As selected by Architect from manufacturer's full range. Colors shall generally match the existing building colors.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Concrete: 12 percent.
  2. Portland Cement Plaster: 12 percent
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
- C. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

### 3.3 INSTALLATION

- A. Apply paints in accordance with manufacturer's written instructions and recommendations in "MPI Manual."
- B. Use applicators and techniques suited for paint and substrate indicated.
- C. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
- D. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- E. Primers specified in the Exterior Painting Schedule may be omitted on items that are factory primed or factory finished if compatible with intermediate and topcoat coatings and acceptable to intermediate and topcoat paint manufacturers.
- F. Tint undercoats same color as topcoat.
- G. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- H. Paint the following work where exposed to view:
  - 1. Equipment, including panelboards, that are attached to the building
  - 2. Uninsulated metal piping.
  - 3. Uninsulated plastic piping.
  - 4. Pipe hangers and supports.
  - 5. Metal conduit.
  - 6. Plastic conduit..

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
- C. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
  - 1. Allow empty paint cans to dry before disposal.
  - 2. Collect waste paint by type and deliver to recycling or collection facility.
- D. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 EXTERIOR PAINTING SCHEDULE

- A. Steel Substrates, No Significant Rusting
  - Prime Coat: MP 169, Bonding primer, solvent based
  - Intermediate Coat: Latex, MPI 163 Light Industrial Coating, water based<sup>4</sup>
  - Topcoat: Same as Intermediate Coat

- B. Steel Substrates, Noticeable rusting:  
Prime Coat: POR 15  
Intermediate Coat: Latex, MPI 163 Light Industrial Coating, water based4  
Topcoat: Same as Intermediate Coat

END OF SECTION

## SECTION 09912 - INTERIOR PAINTING (MPI STANDARDS)

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:

- 1. Gypsum board.

#### 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.

## PART 2 – PRODUCTS

### 2.1 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products List."
- B. Material Compatibility:
  - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
- D. VOC Content: For field applications inside the building, wall paints shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:).
- E. VOC Emissions: For field applications inside the building, wall paints shall contain no more than half of the chronic REL of VOCs when tested according to the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." The building concentration of formaldehyde shall not exceed half of the indoor recommended exposure limit or 33 mcg/cu. m and that of acetaldehyde shall not exceed 9 mcg/cu. m.
- F. Colors: All color references are to Sherwin Williams. All paints shall have a MPI Gloss level 3 finish. Paint used in the toilet rooms shall have mildewcide added.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

- a. Gypsum Board: 12 percent.
  - B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers. .
  - C. Proceed with coating application only after unsatisfactory conditions have been corrected. .
  - D. Application of coating indicates acceptance of surfaces and conditions. .
- 3.2 PREPARATION
- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
  - B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
    - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
  - C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants
  - D. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- 3.3 INSTALLATION
- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - B. Use applicators and techniques suited for paint and substrate indicated
  - C. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only - only if the equipment or furniture are to be removed as part of other required work
  - D. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - E. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

- F. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- G. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- H. Painting Fire-Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

#### 3.4 FIELD QUALITY CONTROL

- A. Dry-Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry-film thickness.
- B. Contractor shall touch up and restore painted surfaces damaged by testing
- C. If test results show that dry-film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry-film thickness that complies with paint manufacturer's written recommendations.

#### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

#### 3.6 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board:
  - Prime Coat: Primer/sealer MPI 50 X-Green
  - Intermediate Coat: MPI 52 X-Green
  - Topcoat: Same as intermediate coat

END OF SECTION



## SECTION 10211 - PLASTIC TOILET COMPARTMENTS

### PART 1 - GENERAL

#### COORDINATION

- A. Coordinate requirements for blocking, reinforcing, and other supports concealed within wall to ensure that toilet compartments can be supported and installed as indicated.

#### FIELD CONDITIONS

- B. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements, and coordinate before fabrication.

#### 1.2 SUBMITTALS

- A. Product data including preparation instructions and storage and handling recommendations.
- B. Shop Drawings: Layout drawings and installation details with location and type of hardware indicated.
- C. Samples: submit 6" x 6" sample of toilet compartment.

#### 1.3 QUALIFICATIONS

- A. Manufacturer: Provide certification that the manufacturer is a company with at least a five year record of manufacturing of the products specified in this section.
- B. Installer: Provide certification the installer has a minimum of five years experience installing products specified in this section.

### PART 2 - PRODUCTS

#### 2.1 SOURCE LIMITATIONS

- A. Obtain plastic toilet compartments from single source from single manufacturer.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Fire Performance: Tested in accordance with, and pass the acceptance criteria of, NFPA 286.
- C. Structural Performance: Where grab bars are mounted on toilet compartments, design panels to comply with the following requirements:
  - 1. Panels are able to withstand a concentrated load on grab bar of at least 250 lbf applied at any direction and at any point, without deformation of panel.
- D. Regulatory Requirements: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" for toilet compartments designated as accessible.

## MATERIALS

- E. Aluminum Castings: ASTM B26/B26M.
- F. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.
- G. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304, stretcher-leveled standard of flatness.
- H. Stainless Steel Castings: ASTM A743/A743M.
- I. Coat hook and Door Bumper Combination (provide one per door): Chrome plated Zamac: ASTM B86, commercial zinc-alloy die castings.
- J. Door pulls (for each handicapped stall): Chrome plated Zamac: ASTM B86, commercial zinc-alloy die castings. Hinges shall be continuous aluminum helix hinges.
- K. Overhead bracing shall be clear anodized aluminum.
- L. Doors and panels: High density polypropylene fabricated from extruded polymer resins to form a single thickness panel one inch (1") thick.
- M. All hardware not specifically mentioned above shall be polished Type 304 stainless steel or clear anodized aluminum.
- N. All fasteners shall be stainless steel.

## 2.3 FABRICATION

- A. Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.
- B. Door Size and Swings: Unless otherwise indicated, provide 24-inch- wide, in swinging doors for standard toilet enclosures and 36-inch- wide, out swinging doors with a minimum 32-inch- wide, clear opening for toilet enclosures designated as accessible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for fastening, support, alignment, operating clearances, and other conditions affecting performance of the Work.
  - 1. Confirm location and adequacy of blocking and supports required for installation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
  - 1. Maximum Clearances:
    - a. Pilasters and Panels or Screens: 1/2" inch.
    - b. Panels or Screens and Walls: 1/2" inch.

## ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware in accordance with hardware manufacturer's written instructions for proper operation. Set hinges on in swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out swinging doors to return doors to fully closed position.

END OF SECTION

## SECTION 10280 – TOILET ACCESSORIES

### PART 1 - GENERAL

#### COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

#### 1.2 SUBMITTALS

- A. Product Data: Manufacturer's product literature and installation instructions for each toilet accessory.

### PART 2 - PRODUCTS

#### PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Structural Performance: Design accessories and fasteners to comply with the following requirements:
  - 1. Grab Bars: Installed units are able to resist 250 lbf concentrated load applied in any direction and at any point.

#### 2.2 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

## 2.3 SCHEDULE OF PRODUCTS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR

- A. Soap Dispenser: Sloan ESD-500 foam soap dispenser or equal. Supply with two refills, each of 1500 ml size.
- B. Hand Dryer: Sloan EHD-511 spout or equal. Blower, hoses and wiring as required to have a complete operational system.
- C. Toilet Paper Dispenser: Type 304 stainless steel, 18 gauge. Shall hold two rolls of toilet paper up to 9-inches in diameter. Provide with theft resistant tumbler lock.
- D. Toilet Seat Cover Dispenser: Surface mounted maximum 2-inches deep. Fabricate of 22 gauge Type 304 stainless steel to hold a box of 250 seat covers.
- E. Grab Bars: Type 304 stainless steel, 18 gauge or thicker, 1.25-inch outside diameter. Provide with 1.5-inch clearance to wall, concealed flanges approximately 3-inches in diameter.
- F. Feminine Napkin Dispenser: One per stall in Women's Room. Grainger 1ECK9A or equal.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install accessories in accordance with manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
  - 1. Remove temporary labels and protective coatings.

### ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Clean and polish exposed surfaces in accordance with manufacturer's written instructions.

END OF SECTION

## DIVISION 15 - MECHANICAL

### SECTION 15000 - GENERAL MECHANICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 GENERAL CONDITIONS

- A. These General Mechanical Requirements govern work specified under all sections of DIVISION 15 - MECHANICAL.

##### 1.02 GENERAL REQUIREMENTS

- A. The Contractor shall furnish all labor, materials, tools and equipment and perform all work and services necessary for a complete and properly operating mechanical work, equipment and systems, as shown in drawings and as specified in accordance with provisions of the Contract Documents and completely coordinated with work of all other trades.
- B. The Contractor shall completely examine the Contract Documents and shall report to the State any error, inconsistency or omission he discovers prior to submitting a bid.
- C. Furnish and install all supplementary or miscellaneous items, details, appurtenances and devices incidental to or necessary for a sound, secure and complete mechanical system where work required is not specifically indicated.
- D. Drawings and specifications shall be taken together. Provide work specified and not indicated or work indicated and not specified as though mentioned in both.
- E. The Contractor shall warrant that all materials and equipment furnished under this Contract will be new and that all work will be good quality, free from faults and defects and in conformance with Contract Documents for a guaranteed period of one year.
- F. The Contractor shall maintain at the site one copy of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other modifications in good order and marked to record all changes made during construction. These shall be made available to the Engineer at all times.
- G. The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the work, he shall remove all his waste materials and rubbish from and about the project as well as all his tools, construction equipment, machinery and surplus materials and shall clean all new equipment and accessories.
- H. The Contractor shall give the State timely notice of its readiness for testing any work including the data arranged so that the Engineer may observe such testing. The Contractor shall bear all cost of such tests.

##### 1.03 SUBMITTALS

- A. Submit shop drawings, manufacturers' data and certificates for equipment, materials, finish and pertinent details for each system and have them approved before procurement, fabrication or delivery of the items to the job site. Partial submittals will not be acceptable and will be returned without review. Partial submittal for long lead equipment shall be accepted prior to complete submittal. Submittals shall include the manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions,

capacity, project specification and paragraph reference, applicable industry and technical society publication references and other information necessary to establish contract compliance of each item the Contractor proposes to furnish.

- B. Shop Drawings: Drawings shall be 24 inches by 36 inches in size, except as specified otherwise. Drawings shall include floor plans, sectional views, installation details of equipment; and equipment spaces identifying and indicating proposed location, layout and arrangement of items of equipment, accessories, piping and other items that must be shown to assure a coordinated installation. Drawings shall indicate adequate clearance for operation, maintenance and replacement of operating equipment devices. If equipment is disapproved, drawings shall be revised to show acceptable equipment and be resubmitted.

The Contractor shall review, stamp with his approval and submit, all Shop Drawings required by the Contract Documents or subsequently by the State as covered by modifications. At the time of submission, the Contractor shall inform the State in writing of any deviation in the Shop Drawings from the requirements of the Contract Documents. By approving and submitting Shop Drawings, the Contractor certifies that he has determined and verified all field measurements and obstructions, field construction criteria, materials, catalog numbers and similar data, that he has checked and coordinated each Shop Drawing with the requirements of the work and of the Contract Documents and that all equipment fits within designated spaces.

- C. Manufacturers' Data: Submittals for each manufactured item shall be manufacturers' descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves and catalog cuts. Submittals shall include equipment certification terms and conditions, applicable self-diagnostic testing and start-up procedures. Equipment submittals shall specifically indicate the specified equipment assembly configurations with all specified standard and optional features, above and beyond general catalog products technical literature.
- D. Standards Compliance: When materials or equipment must conform to the standards of organizations such as the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA) and Underwriters Laboratories (UL), American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) proof of such conformance shall be submitted to the State for approval. If an organization uses a label or listing to indicate compliance with a particular standard, the label or listing will be acceptable evidence, unless otherwise specified in the individual sections. In lieu of the label or listing, the Contractor shall submit a certificate from an independent testing organization, which is competent to perform acceptable test and is approved by the State. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item conforms to the specified organization's standard. For materials and equipment whose compliance with organizational standards or specifications is not regulated by an organization using its own listing or label as proof of compliance, a certificate of compliance from the manufacturer shall be submitted for approval. The certificate shall identify the manufacturer, the product and the referenced standard and shall simply state that the manufacturer certifies that the product conforms to all requirements of the project specification and of the referenced standards listed.
- E. Certified Test Reports: Before delivery of materials and equipment, certified copies of all test reports specified in the individual section shall be submitted for approval. Furthermore, submit a written certificate, dated and signed by an authorized corporate officer of the Contractor who is either a full-time employee, principal, or a full-time partner delegated with the authority to bind the Contractor in all matters relating to its

professional work of the Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Corporate credentials shall be furnished concurrently with applicable written certificates. Whenever a regulatory agency performs inspections or tests of any portion of the work, a written certificate shall be furnished by the Contractor to validate the results from the respective inspection test.

- F. **Certificates of Conformance or Compliance:** Submit all certificates applicable to all specified equipment assemblies and parts for the Engineer's approval prior to equipment delivery and commencement of equipment on-site installation. A certification from the manufacturer attesting that materials and equipment to be furnished for this project complies with the requirements of this specification and of the referenced publications. Preprinted certifications will not be acceptable; certifications shall be in the original. The certification shall not contain statements that could be interpreted to imply that the product does not meet all requirements specified, such as "as good as"; "achieve the same end use and result as materials formulated in accordance with the referenced publication," "equal or exceed the service and performance of the specified material." The certification shall simply state that the product conforms to the requirements specified. Furthermore, submit a written certificate, dated and signed by an authorized corporate officer of the Contractor who is either a full-time employee, principal, or a full-time partner delegated with the authority to bind the Contractor in all matters relating to its professional work of the Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Corporate credentials shall be furnished concurrently with applicable written certificates. Whenever a regulatory agency performs inspections or tests of any portion of the work, a written certificate shall be furnished by the Contractor to validate the results from the respective inspection test.
- G. **Manufacturers' Certified Full Standard Product Warranty:** Submit the manufacturer's certified Full Standard Product Warranty terms and conditions applicable to all specified equipment assemblies and parts for the Engineer's approval prior to equipment delivery and commencement of equipment on-site installation, as approved by the Engineer. All manufacturers' Full Standard Product Warranty certificates are to be provided to the State at the time of equipment delivery and prior to the commencement of equipment on-site installation.
- Warranty shall cover all costs for parts, labor, associated travel, and expenses for a period of one year from project acceptance.
- H. **Operation and Maintenance Manuals:** Submit manuals on all equipment and the overall system upon successful completion of equipment on-site installation and start-up and prior to final inspection, as approved by the Engineer.
- I. **Manufacturers' factory trained and certified service personnel:** Prior to the equipment on-site installation, submit to the State documentation as evidence of the respective manufacturers' certification of all personnel responsible for installation, testing, and start-up of the equipment.

#### 1.04 LAWS, REGULATIONS AND CODES

- A. All work shall be in accordance with government laws, ordinances, rules and regulations and orders.
- B. The following shall govern where applicable; the Uniform Plumbing Code, State of Hawaii Department of Health Regulations, Applicable National Fire Protection Association Standards, OSHA, Rules and Regulations and all other codes and standards



referenced in these specifications. Where requirements differ in these codes and standards, the more stringent shall apply.

#### 1.05 TRADE NAME

- A. Mentioning of a trade name in the plans and specifications indicates that the manufacturer is acceptable to the State. However, certain specified construction and details may not be regularly included in the manufacturer's catalogued product. The Mechanical Contractor shall provide the material or equipment complete as specified.

#### 1.06 PERMITS AND INSPECTIONS

- A. Applications for permits will be done by the State. The Mechanical Contractor shall pay for all necessary permits and fees.
- B. The Mechanical Contractor shall apply and pay for all necessary inspections required by any public authority having jurisdiction.

#### 1.07 DISCREPANCIES

- A. The Drawings and Specifications are intended to be cooperative. Any materials, equipment or system related to this section and exhibited on the Electrical or Mechanical Drawings but not mentioned in the Specifications are to be executed to the intent and meaning thereof, as if it were both mentioned in the Specifications and set forth on the Drawings.
- B. In case of differences between the Drawings and Specifications, the Specifications shall govern first, and then the Drawings. Large scale details shall take precedence over small scale Drawings as to the shape and details of construction. Specifications shall govern as to materials.
- C. Drawings and Specifications are intended to be fully cooperative and to agree, but should any discrepancy or apparent difference occur between Drawings and Specifications or should error occur in the work of others affecting the work, the Contractors shall notify the Engineer at once. If the Contractor proceeds with the work affected without instructions from the State, he shall make good any resultant damage or defect. All interpretations of Drawings and specifications shall be clarified by the State.

#### 1.08 WORKMANSHIP AND MATERIALS

- A. Workmanship shall be of the best quality and none but competent mechanics skilled in their trades shall be employed. The Contractor shall furnish the services of an experienced superintendent, who will be constantly in charge of the erection of the work, until completed and accepted.
- B. Unless otherwise hereinafter specified, each article of its kind shall be the standard product of a single manufacturer.
- C. Whenever the words "or approved equal" or other words of similar intent or meaning are used, implying that judgment is to be exercised, it is understood that it is the judgment of the Engineer that is referred to.
- D. The Engineer shall have the right to accept or reject material, equipment and/or workmanship and determine when the Contractor has complied with the requirements herein specified.
- E. All manufactured materials shall be delivered and stored in their original containers. Equipment shall be clearly marked or stamped with the manufacturer's name and rating. Equipment and materials shall be carefully handled, properly stored and adequately

protected to prevent damage before and during installation, in accordance with the manufacturer's recommendations and as approved by the Engineer. Damaged or defective items, in the opinion of the Engineer, shall be replaced.

F. Reference to standards are intended to be the latest revision of the standard specified.

#### 1.09 MANUFACTURER'S RECOMMENDATIONS

A. Equipment installed under this Division of the Specifications shall be installed according to manufacturer's recommendations, unless otherwise shown on the drawings or herein specified. Where installation procedures or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of these recommendations shall be furnished to the Engineer, prior to the installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can cause rejection of the material.

#### 1.10 INSPECTION OF SITE

A. This Contractor shall visit the site and examine the conditions affecting his work before submitting his proposal. The submission of the proposal shall be considered evidence that the Contractor has visited the site and no extra payments will be allowed to the Contractor on account of extra work made necessary by his failure to visit the site. If there are any questions or discrepancies in the design, the Contractor shall bring it to the attention of the Engineer before submitting his proposal.

#### 1.11 CONTINUITY OF SERVICES, PHASING

- A. Examine site and become familiar with existing local conditions affecting work.
- B. Examine all Drawings and Specifications (i.e. work from other trades) and become familiar with the types and systems of construction to be used. Determine how such types and systems will affect the installation of mechanical work.
- C. Investigate, determine and verify locations of any overhead utilities on or near the site. Determine such locations in conjunction with all public and private utility companies and with all authorities having jurisdiction.

#### 1.12 OPENINGS, CUTTING AND REPAIRING

- A. The Mechanical Contractor shall cooperate with the work to be done under other sections in providing information as to openings required in walls and slabs for all piping including sleeves where required.
- B. Any drilling or cutting required for the performance of work under this Section shall be the responsibility of this Contractor and the cost shall be borne by him.
- C. Holes in Concrete: The Mechanical Contractor shall pay all costs for cutting holes. All holes through existing concrete shall be either core drilled or saw cut. All holes required shall have the approval of the Engineer prior to cutting and drilling.
- D. It shall be the responsibility of this Contractor to ascertain that all openings are properly located.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. As specified in all sections of DIVISION 15 - MECHANICAL.
- B. Materials and equipment shall be cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be the manufacturer's latest design that complies with the specifications requirements. Materials and equipment shall be duplicate items that have been in satisfactory commercial or industrial use at least 2 years prior to bid opening. Where two 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 items need not be the products of the same manufacturer. Each item of equipment shall have the manufacturer's name, address, model number and serial number on the nameplate.
- C. The mechanical contractor shall provide all necessary options and/or accessories to comply with the applicable equipment specification requirements. Installation of the options and/or accessories shall be in accordance with the manufacturer's requirements and the complete assembly shall be warranted by the respective equipment manufacturer.
- D. The Mechanical contractor shall provide certified manufacturer's representatives and/or service technicians for any field modification to mechanical equipment. The Contractor shall ensure that any modification to the equipment will not invalidate the manufacturer's warranty.

### 2.02 SUBSTITUTIONS

- A. The materials, products, and equipment described in these specifications establish a standard of required function, quality, dimension, capacity, performance and appearance to be met by any proposed substitution.
- B. Specific product listings in these specifications shall not preclude alternative product selections of equivalent or superior quality. Contractor may make reasonable substitutions, provided that these are submitted to the Engineer for acceptance in accordance with the SPECIAL PROVISIONS and the INTERIM GENERAL CONDITIONS. The Contractor shall be responsible for design changes to accommodate the substituted product, at no additional cost to the State.

## PART 3 - EXECUTION

### 3.01 INSTALLATION AND WORKMANSHIP

- A. Provide competent and qualified manufacturer's factory trained and certified field service personnel on-site to be responsible for execution of all diagnostic testing in accordance with equipment manufacturer's installation and start-up certification requirements and warranty terms and conditions. Perform work using adequate numbers of personnel skilled in the appropriate trades, and provide adequate supervision and management of the work.
- B. All workmanship shall be of the highest standard. The piping systems shall be laid out to insure a neat, systematic and orderly arrangement of all work. Vertical piping lines shall be plumb and lines that are grouped shall be parallel and as direct as possible. Exposed pipe where indicated, shall be run parallel with walls.

### 3.02 PROTECTION OF MATERIALS AND EQUIPMENT

- A. Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water, and chemical or mechanical injury. Upon completion of all work the fixtures, materials and equipment shall be thoroughly cleaned, repainted as required, adjusted and operated.

### 3.03 CUTTING AND PATCHING

- A. The Contractor shall arrange for all cutting, fitting and patching necessary to accommodate the plumbing work as the job progresses and such cutting and patching shall be done by that trade experienced in the particular type of work required.

### 3.04 PIPING IDENTIFICATION

- A. Identification of all new pipe lines shall be by means of colored, waterproof, all temperature, self-adhering labels and directional arrow.
- B. All exposed pipes, whether insulated or not shall be identified. Labels may be omitted from piping where the use is obvious, due to its connection to equipment and where the appearance would be objectionable in finished rooms, as approved by direction.
- C. Identification labels shall be placed as follows:

Near each valve and branch connection.

Wherever piping merges or disappears from view from the floor of the room in which it is installed.

Labels shall not be more than 50 feet apart.

### 3.05 EQUIPMENT IDENTIFICATION

- A. Identify all equipment with symbol and service conforming to that indicated on the drawings. Identification shall be on 1-1/4 inch by 3 inch laminated plastic nameplates securely fastened to the equipment. Leave manufacturer's nameplate clean, legible, and unpainted.

### 3.06 COORDINATION OF WORK AS SPECIFIED IN OTHER SECTIONS

- A. The Mechanical Contractor is responsible for coordination with the General Contractor to assure proper layout, size, and location of mechanical equipment. Mechanical Contractor shall ensure that power and control wiring are provided and installed.

### 3.07 INSPECTIONS

- A. All work and materials are subject to field observation at any and all times by the Engineer.
- B. Contractor shall notify the Engineer a minimum of two days prior to testing any piping which must be witnessed and approved before they are covered up or enclosed. Should the Contractor fail to notify the Engineer at the times prescribed, it shall then be the Contractor's responsibility to make accessible any concealed lines, or demonstrate the acceptability of any part of the system. Any extra cost caused by the removal of such work shall be borne by the Contractor.
- C. If observer finds any material or work not conforming to these Specifications, Contractor within three days of being notified shall remove said materials from the premises and replace with approved material, at no cost to the State.

### 3.08 OPERATIONAL ACCEPTANCE TESTS

- A. The Mechanical Contractor shall perform all tests of the installed work and shall provide all services, labor, equipment, materials and instruments needed for the tests. During pressure tests all items in the system to be tested, not designed for test pressures, shall be removed or isolated from the system and shall be reconnected or unblocked after tests are completed. Should operating tests require the presence of manufacturers' representatives, the Mechanical Contractor shall cooperate with them and shall place at their disposal all assistance, materials and services required to perform such test. The Mechanical Contractor shall certify in writing that all work has passed all required tests and shall complete the attached Operational Performance Tests form.

### 3.09 INSTRUCTION TO STATE PERSONNEL

- A. The Contractor shall furnish the services of competent instructors who will give full instruction to the designated personnel in the adjustment, operation and maintenance, including pertinent safety requirements, of the equipment or system specified. Each instructor shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work.

Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the State for regular operation. The number of man-days (8 hours) of instruction furnished shall be as specified in other sections. When more than 4 man-days of instruction are specified, approximately half of the time shall be used for classroom instruction. All other time shall be used for instruction with the equipment or system. When significant changes or modifications in the equipment or systems are made under the term of the contract, additional instruction shall be provided to acquaint the operating personnel with the changes or modifications.

### 3.10 LOCAL TECHNICAL SUPPORT

- A. The mechanical equipment supplier shall have a Hawaii office within 500 miles of the project site, staffed with factory trained engineers fully capable of providing instruction, routine maintenance and emergency maintenance service on all system components.
- B. The control system supplier shall have a Hawaii office within 500 miles of the project site, staffed with factory trained engineers fully capable of providing instruction, routine maintenance and emergency maintenance service on all system components.

### 3.11 SAFETY REQUIREMENTS

- A. Belts, pulleys, chains, gears, couplings, projecting setscrews, keys and other rotating parts located so that any person can come in close proximity thereto shall be fully enclosed or properly guarded. High temperature equipment and piping so located as to endanger personnel or create a fire hazard shall be properly guarded or covered with insulation of a type as specified herein.

Items such as catwalks, ladders and guardrails shall be provided where required for safe operation and maintenance of equipment.

### 3.12 CLEANUP AND REPAIRS

- A. Debris shall not be allowed to accumulate as a result of this work. Upon completion of this work, remove all debris and excess materials, tools, etc. resulting from this work from the jobsite and leave the location of this work broom-clean in a manner acceptable to the Engineer.
- B. This Contractor shall clean all fixtures and equipment set by him of oil, grease, stains, etc. All plates, trim, etc. shall be polished. Traps and drains shall be clean and unobstructed.

C. All fixture piping and lines shall be thoroughly cleaned before leaving the work.

3.13 FINAL INSPECTION

A. Final inspection shall be requested by the Mechanical Contractor only after submittal of all required certificates. No final inspection will be made until all moving parts of equipment are properly guarded, all controls and safety devices tested and operative, all painting required done and the site cleaned up.

3.14 GUARANTEE

A. The Mechanical Contractor shall guarantee the installation for a period of one year after 30 consecutive days of trouble-free operation after the date of acceptance of the project by the State against any defects due to faulty materials, equipment, workmanship or installation. Upon notice of defect, the Mechanical Contractor shall correct; replace defective item at no additional cost to the State.

3.15 ONE-YEAR GUARANTEE AND MAINTENANCE SERVICE CONTRACT

- A. In addition to the Guaranty on materials and workmanship, the Installer shall submit seven (7) copies of the Maintenance Service Contract, countersigned by the Contractor, that will validate the Guaranty.
- B. The Guarantee and maintenance service shall extend for a period of one year after 30 consecutive days of trouble-free operation after the Project Acceptance Date, or the Air Conditioning Equipment Acceptance Date if earlier than the Project Acceptance Date, and shall include all labor, materials, equipment and parts necessary to service the complete system, in accordance with the subsection 3.16 E. Maintenance Schedule, so as to assure proper operation and function of the system. All costs for the periodic maintenance, including emergency calls, shall be borne by the Contractor. This maintenance period and the Guaranty period shall run concurrently (same start and end dates).

Trouble-free operation is defined as a non-disabling condition or a non-recurring failure or disruption and the following:

1. The system shall be free of all discrepancies, contamination and debris which require correction in excess to those described for the monthly service which is included in the Schedule of Maintenance.
  2. The system is maintaining operational conditions and other parameter as measured during acceptance tests.
- C. The Installer shall include a listing of the following items along with the Maintenance Service Contract:
1. Names of the servicing contractor.
  2. Ventilator system acceptance date.
  3. Service contract expiration date.
  4. Monthly inspection schedule for the maintenance period.
  5. Itemized listing of the equipment covered under the service contract, including a description of the equipment identified, its model and serial number(s) and manufacturer's name(s).

Maintenance service contractor shall have a local office, staffed with competent and qualified manufacturer's factory trained and certified field service personnel and stocked with full inventory of replacement repair parts, to perform specified service and maintenance tasks on all equipment in accordance with the One-Year Maintenance Service Contract and terms and conditions of all equipment manufacturer's warranties and recommendations. Field service personnel shall be fully capable of providing technical assistance instruction, routine maintenance and emergency maintenance service on all system equipment components.

- D. The Maintenance Service Contract shall be submitted along with the Operations and Maintenance Manual on/or before the Project Acceptance Date.

Distribution of submittal:

1 copy: Contractor  
1 copy: DAGS Inspection Branch Engineer Files  
2 copies: User's Facility Maintenance Agency  
1 copy: DAGS, Quality Control Branch

- E. Schedule of Maintenance Service: All service performed by the Contractor shall include applicable items listed but shall not be limited to the following maintenance task:

1. Ventilation Fans (Exhaust)
  - a. Check motor-controlled and back-draft damper for proper operation; lubricate linkage for free movement.
  - b. Lubricate fan motors and bearings.
  - c. Check belt wear and tension; adjust or replace as needed.
  - d. Check sheaves for wear, replace as needed.
  - e. Check fan collar, bearings and shaft for wear, repair or replace as needed.
  - g. Certify performance of quarterly fan maintenance service and correct and report all discrepancies.
  - h. Semi-Annual Service
    - 1) Check and clean fan wheels and housings of dust, dirt, and grease.
    - 2) Remove and wash all intake grilles and dampers and repair or replace deteriorated bird screens.
    - 3) Certify performance of semi-annual fan maintenance service and correct and report all discrepancies.

- F. Work Schedule: All maintenance work shall be performed between the hours of 7:30 a.m. to 4:00 p.m., on normal working days, Monday through Friday, excluding State Holidays.

- G. Trouble Calls:

Emergency service and repairs required between regular service calls shall be rendered within 24 hours after the Contractor is notified, non-work days excluded.

The Contractor shall call DAGS Central Services Division, phone number 831-6727 contact person Ray DeSmet, the next working day after being notified of the problem and report the status of repairs.

- H. Maintenance Report/Checklist: The Contractor shall prepare and maintain a maintenance service report/checklist which shall include the following:
1. Date maintenance service was performed.
  2. The name of the mechanic who performed said maintenance.
  3. The type and cost (labor, materials, parts and equipment) of repair work performed on the unit, if any.
  4. Documents and other data pertaining to the maintenance performed.

It will be the responsibility of the Contractor to maintain the report/checklist by recording the above noted data after each scheduled maintenance and emergency repairs, and have the checklist available for inspection at the building site. The report shall be sufficiently detailed to properly reflect the past maintenance history of the equipment. See attached service maintenance report form.

Reports shall be certified by a representative of the facility being served and shall be submitted to DAGS Central Services Division, attention: Ray DeSmet, at the completion of the service contract.

I. Cleanup And Work Practices

The Contractor shall keep the job site free of debris, litter, discarded parts, etc. and shall clean all oil drippings during the daily progress of work. The Contractor shall remove all tools, parts and equipment from the service areas upon completion of the work. The Contractor shall exercise caution during the progress of his maintenance and repair work to prevent damage to the ceilings, roofing and other building structure. The Contractor shall restore all damages, caused by his negligence, to its original condition at his own expense.

- J. All costs for periodic maintenance services and for emergency calls shall be included in the lump sum bid price.
- K. The Maintenance Service Contract does not include repairs resulting from vandalism, negligent use or misuse of equipment.

3.17 OPERATION AND MAINTENANCE MANUAL

- A. Submit three (3) hard bound copies of the Operating and Maintenance Manual on all equipment and the system as a whole. The manual shall identify project name and number, contractor, consultant, date and all equipment provided, It shall include the equipment manufacturer's name, model and serial number, tag no., capacity, quantity of units, their location and area (room) served and shall include the manufacturer's operation and maintenance manuals including control and wiring diagrams and source of service and replacement parts. When standard manufactures' brochures are used, adequately indicate (highlight, arrow, etc.) the project related information and delete (X or cross-out) the non applicable information.

B. Distribution of submittal:

1 copy: User

2 copies: User's Facility Maintenance Agency



SERVICE MAINTENANCE REPORT

Date: SHEET NO.

Name of Service Personal:

Name of Facility and Location:

Date of Service Call:

Time In, Time Out at Site:

Person(s) Contacted:

Nature of Service Call - (Routine Maintenance or Emergency - Explain and Cost Break-down):

Equipment Readings and Maintenance Performed.

Remarks:

Operational Performance Tests:

Facility:

Date:

\_\_\_\_\_

END OF SECTION

## SECTION 15400 - PLUMBING, GENERAL PURPOSE

### PART 1 - GENERAL

#### 1.01 GENERAL CONDITIONS

- A. The General Conditions and Special Conditions preceding shall govern this section of the specifications.

#### 1.02 SCOPE

- A. Provide all labor, materials, equipment, services and related work to complete all plumbing work as shown within 5 feet of building line on the drawings and as specified. The work shall include the following:
  1. Removal of existing equipment and piping, as indicated on drawings.
  2. Plumbing fixtures and equipment and connections thereto.
  3. Domestic hot and cold water piping and insulation.
  4. Sanitary waste and vent piping.
  5. Disinfection of water supply lines.
  6. Testing and adjusting.
  7. Manufacturer's literature, shop drawings, and record drawings.

#### 1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 15650 - AIR CONDITIONING AND VENTILATION.
- B. Line voltage wiring and conduit shall be performed under DIVISION 16 - ELECTRICAL.

#### 1.04 GENERAL REQUIREMENTS

- A. It is the intent of the plans and specifications to provide a complete installation. Should there be omissions or discrepancies in the plans and specifications, the Contractor shall call the attention of the Engineer to such omissions and discrepancies in advance of the date of bid opening so that the necessary corrections can be made. Otherwise the Contractor shall furnish and install the omissions or discrepancies as if the same were specified and provided for.
  1. Standards:
    - a. All work shall be done in accordance with the UPC 2012 and applicable ordinances of the City and County of Honolulu.
    - b. All plumbing fixtures shall comply with the Board of Water Supply and EPA water sense requirements for water conservation.
    - c. Work shall comply with applicable regulations of the State of Hawaii Health Department.

- d. ADA indicated plumbing fixtures and installation shall comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).
  - e. Contractor shall obtain all permits, licenses, and certificates and pay for all fees.
2. Product Standards:
- a. Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products.
3. Project/Site Conditions:
- a. The contractor shall become familiar with details of the work, verify dimensions in the field and advise the Engineer of any discrepancy before performing any work.

#### 1.05 SUBMITTALS

- A. Drawings: The drawings and specifications are intended to cover the complete installation of systems to function as described. The omission of reference to any necessary item of labor or material shall not relieve the Contractor from providing such labor or material. Drawings do not attempt to show exact details of piping and ductwork. Provide offsets as necessary to avoid local obstructions or interferences with other trades.
- 1. Contract Drawings: Mechanical plans are essentially diagrammatic, showing locations of pipes and other mechanical equipment. Where locations are not dimensioned, they are approximate, and before installing, Contractor shall study existing conditions and make installation in most logical manner.
  - 2. Shop Drawings: The Contractor shall submit 6 copies of shop drawings and brochures or catalog cuts of equipment for review and reply prior to start of work. Drawings shall show complete dimensioned installation, including all piping in building, plumbing fixtures, equipment installation, elevation, invert, supports and foundations. The Contractor shall show the entire work with inverts, sleeves and dimensions. Contractor shall check project drawings to avoid interferences with structural features and with work of other trades. No plumbing or piping work shall commence until plans have been reviewed by the Engineer. Any deviations from the shop drawings shall require prior approval by the Engineer.
  - 3. Record Drawings: The Contractor shall keep at the job site a complete, neat and accurate record of all approved deviations from the contract drawings, shop drawings and specifications, indicating the work as actually installed. These changes shall be recorded on prints of the drawings affected and the shop drawings. Reproducible as-builts shall be submitted to the Engineer prior to final acceptance.
- B. Product Data: As soon as practicable and within 30 days after award of contract and before commencement of installation of any materials and equipment, a complete schedule of the materials and equipment proposed for installation shall be submitted for the approval of the Engineer. No consideration will be given to partial lists submitted from time to time. Any scheduled materials, fixtures and equipment not conforming to the specifications may be rejected.

For each type of plumbing fixture, equipment, material indicated below but not limited to, include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment and supports. Indicate materials and finished, dimensions, construction details and flow-control rates.

1. Flush valve water closets
  2. Flush valve urinals
  3. Countertop lavatories
  4. Kitchen sinks
  5. Service sinks
  6. Shower stalls
  7. Water heaters
  8. Shower faucets
  9. Shower mixing valves
  10. Insulation
- C. Warranty: All work and materials executed under this section shall be under warranty to be free from defects of materials and workmanship for one year from date of final acceptance of project as a whole by the Engineer. All work of repair and replacement required, including other work damaged by this work's defects shall be performed without cost to the Owner.
- D. Certificates: Furnish certificates for evidence of proper performance or compliance with code for the following:
1. Sterilization of domestic water piping.
  2. Water leak testing of sanitary piping.
  3. Water leak testing of domestic water piping.
- E. Operations and Maintenance Manuals

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. All materials shall be new and of the best quality available in their respective kinds, free from all defects and shall be of the make and types specified or approved equal.
- B. Sanitary Waste, Drain, and Vent Piping:
1. Cast iron service weight hub and spigot pipe and fittings, ASTM A74, AWWA C606, with ASTM C564 rubber compression fittings or caulked and leaded joints.

2. Cast iron service weight hub less pipe and fittings, CISPI 301, with CISPI 310 coupling joints.
3. Cast iron service weight hub less pipe and fittings, CISPI 301, with cast iron couplings with neoprene gasket and stainless steel nuts and bolts, MG Coupling Co, (above and below ground) Nuts and bolts installed underground shall be field coated with a bituminous coating, 4 mils minimum thickness.

Pipe and Fitting Materials	Aboveground	Belowground
Cast iron pipe and fittings, hub and spigot	Yes	Yes
Cast iron pipe and fittings, hubless	Yes	No
Cast iron pipe and fittings, MG couplings	Yes	Yes

C. Domestic Water Piping:

1. Copper tubing, ASTM B88, Type K for buried underground piping and Type L for above ground piping, with ANSI B16.18 pressure fittings or B16.22 solder joint fittings.
2. Exposed piping in finished areas shall be chromium plated brass pipe to the shut off or stop valve of each fixture. ANSI B16.15 cast bronze threaded fittings with chrome finish. Nipples: ASTM B687, chromium plated. Unions: MSS SP-72, SP-110, brass or bronze with chrome finish. Unions 2 ½” and larger shall be flange type.
3. Exposed piping in unfinished rooms, mechanical rooms, chrome plated brass is not required. Paint piping as required.

Pipe and Fitting Materials	Cold and Hot Water Above ground	Cold and Hot Water Below ground
Copper tubing Type K, solder joint pressure fittings	No	Yes
Copper tubing Type L, solder joint pressure fittings	Yes	No
Brass Pipe, solder joint pressure fittings	Yes	No

4. Trap primer water piping shall be copper tube, ASTM 88, type K, hard drawn. Fittings: Bronze castings conforming to ANSI B16.18 solder joints. Solder: ASTM B32 composition Sb5. Provide non-corrosive flux.

D. Water Valves:

1. General
  - a. Ball valves, pressure regulating valves, gate valves, globe valves, and plug valves used to supply potable water shall meet the requirements of NSF 61.

- b. Valves in insulated piping shall have 50 mm or DN50 (2 inch) stem extensions and extended handles of non-thermal conductive material that allows operating the valve without breaking the vapor seal or disturbing the insulation. Memory stops shall be fully adjustable after insulation is applied.
2. Shut off valves for Cold, Hot and Re-circulating Hot Water:
    - a. 50 mm or DN50 (2 inches) and smaller: Ball, MSS SP-72, SP-110, Ball valve shall be full port three piece or two piece with a union design with adjustable stem package. Threaded stem designs are not allowed. The ball valve shall have a SWP rating of 1035 kPa (150 psig) and a CWP rating of 4140 kPa (600 psig). The body material shall be Bronze ASTM B584, Alloy C844. The ends shall be solder.
    - b. Less than 100 mm DN100 (4 inches): Butterfly shall have an iron body with EPDM seal and aluminum bronze disc. The butterfly valve shall meet MSS SP-67, type I standard. The butterfly valve shall have a SWP rating of 1380 kPa (200 psig). The valve design shall be lug type suitable for bidirectional dead-end service at rated pressure. The body material shall meet ASTM A 536, ductile iron.
  3. Balancing valves:
    - a. Hot water re-circulating valves, 3" and smaller manual balancing valve shall be of bronze body, brass ball construction with glass and carbon filled TFE seat rings and designed for positive shutoff. The manual balancing valve shall have differential pressure read-out ports across the valve seat area. The read out ports shall be fitting with internal EPT inserts and check valves. The valve body shall have 1/4" tapped drain and purge port. The valves shall have memory stops that allow the valve to close for service and then reopened to set point without disturbing the balance position. All valves shall have calibrated nameplates to assure specific valve settings.
  4. Check valves:
    - a. Check valves less than 80 mm or DN80 (3 inches) and smaller) shall be class 125, bronze swing check valves with non metallic Buna-N disc. The check valve shall meet MSS SP-80 Type 4 standard. The check valve shall have a CWP rating of 1380 kPa (200 psig). The heck valve shall have a Y pattern horizontal body design with bronze body material conforming to ASTM B 62, solder joints, and PTFE or TFE disc.
  5. Valves shall be provided on supplies to equipment and fixtures. Valves 2-1/2 inches and smaller shall be bronze body, 125 lb. pressure rated valves, with solder joint ends. Valves 3 inches and larger shall have flanged iron bodies and bronze trim, 125 lb. pressure rated valves. Nibco, Stockham, Crane, Lunkenheimer, or approved equal. Valves shall conform to the following standards:

Butterfly Valves	MSS SP-67
Pressure Reducing Valves	ASSE 1003
Trap Seal Primer Valves	ASSE 1018
Temperature and Pressure Relief Valves	CSA/AM Z21.22

Ball Valves, Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends	MSS SP-110

- E. Provide a pressure reducing valve, with integral strainer, bronze body construction, suitable for pressure up to at least 200 psi and able to adjust the pressure from 25-75 psi. Unless otherwise notes, the PRV shall be set at 50 psi.
- F. Insulation: Provide insulation on all hot water piping. ASTM C547 mineral fiber pipe insulation, type I, class I with factory applied jacket. Provide nested insulation segments on fittings, valves, and flanges. Seal ends with vapor barrier mastic. Vapor barrier shall be greater than 3 ply self adhesive laminate – white vapor barrier jacket – superior performance. Vapor barrier shall meet UL 723 or ASTM E 84, 25 flame and 50 smoke requirements and UV resistant. Provide 0.016 inch thick aluminum jacket on piping exposed to the weather.
- G. Miscellaneous Materials:
1. Nipples: Nipples shall be the same material as the piping in which installed.
  2. Unions: Unions shall be brass or bronze, either threaded or with solder joint ends, for use in copper tubing.
  3. Wall and Ceiling Escutcheon Plates: Provide split hinged, locked type, or one-piece escutcheon plates of pressed steel with heavy coating of copper, nickel or chromium.
  4. Solder: Solder metal shall conform to ASTM B32, flux shall be liquid form, non-corrosive and conform to ASTM B 813, standard Test I, solder shall be lead-free.
  5. Supports: MSS SP-58 and SP-69, types 1,6,9 or 11 for suspended piping. Provide turnbuckles Type 13 and 15 where required for vertical adjustment. Carbon steel with pre-galvanized or hot dipped galvanized metallic coating. Maximum spacing shall be as specified in SP-69, see table below.

Copper		
NPS	Max Spacing	Rod Diameter
3/4"	5'	3/8"
1 & 1-1/4"	6'	3/8"
1-1/2 & 2"	8'	3/8"
2-1/2"	9'	1/2"
3-5"	10'	1/2"
6"	10'	5/8"
8"	10'	3/4"

Install supports for vertical copper tubing every 10'. Install supports for vertical steel piping every 15'.

- 6. Piping Isolators: Standard commercial products, consisting of metal-clad hair felt manufactured specifically for isolating pipe from hangers.
  - 7. Dielectric Fittings: Dielectric union with galvanized or plated steel female pipe threaded end and copper solder-joint end. Union shall have a water-impervious insulation barrier capable of limiting galvanic current to one percent of the short-circuit current in a corresponding bimetallic joint and, when dry, shall also be able to withstand a 600-volt breakdown test. Provide dielectric couplings or unions between all ferrous and non ferrous pipe.
  - 8. Strainers: Provide on high pressure side of pressure reducing valves, on suction side of pumps, on inlet side of indicating and control instruments and equipment subject to sediment damage and where shown on drawings. Strainer element shall be removable without disconnection of piping. Basket or "Y" type with easily removable cover and brass strainer basket. Body smaller than 3", shall be brass or bronze; 3" and larger shall be cast iron.
- H. Under sink and Lavatory Hot Water Pipe Insulation: 1/2" IMCOA insulation for hot water pipe, exposed P-trap and drain pipe for handicapped installation.
- I. Fire Stopping: Provide materials classified by UL to provide Fire Barrier equal to time rating of construction being penetrated. Provide asbestos-free materials that comply with applicable codes and have been tested in accordance with UL 1479 or ASTM E-814. 3M, Link seal, Proset, or approved equal.

2.02 FIXTURES

- A. Provide chrome plated stops for each fixture. Brand names where used are given to indicate style and quality. Similar and equivalent fixtures by the following manufacturers will be acceptable, subject to approval by the Engineer. No substitutions shall be considered after the bid opening.

Fixtures:	Kohler, American Standard, Crane, Delta
Drainage:	Smith, Zurn, Josam
Seats:	Beneke, Olsonite, Church
Trim:	Chicago Faucet, Speakman, Price-Pfister, Delta, Moen
Fittings:	Eastman, Frost

- 1. P-1/ 1A Water Closet, Flush Valve Type, ASME A112.19.2, white, vitreous china, siphon jet, round bowl, pressure assisted, floor mounted, floor outlet.

Mounting Height: 14 to 15 inches or 17 to 19 inches to comply with ADA standards.

Flushing Capacity: 1.6. Provide a dual flush toilet with a second flushing option that shall not exceed 1.1 gallons per flush.

Toilet Seat: white solid plastic round open-front seat cover.

Flush Valve: Large diameter flush valve including angle control-stop valve, vacuum breaker, wall pieces, slip nuts, tail pieces. Components exposed to view shall be



chromium plated. Mount not less than 11 inches above the fixture. Mount height shall not interfere with ADA hand rails if in ADA stall.

2. P-2/P-2A Urinal Flush Valve Type, white vitreous china wall-mounted, wall outlet, washout, integral trap.

Mounting Height: Provide with urinal with the rim 17 inches above the floor.

Flushing Capacity: 0.125 gallons per flush.

Flush Valve: Large diameter flush valve including angle control-stop valve, vacuum breaker, wall pieces, slip nuts, tail pieces, corrosion resistant internal components. Components exposed to view shall be chromium plated. Mount not less than 11 inches above the fixture.

3. P-3/P-3A Lavatory, Countertop, ASME A112.19.2, white vitreous china, self rimming, cast brass p-trap.

Mounting Height: Mount counter with the top surface 34 inches above floor and with 29 inches minimum clearance from bottom of the counter face to floor. Insulate hot water and drain pipes with 0.5 inch thick fiberglass insulation and provide safety covers to meet ADA requirements.

Flow Rate: 0.5 gallons per minute when measured at a flowing water pressure of 60 psi.

Faucet: centerset, Provide with aerator, chrome plated.

4. P-4 Service Sink, Wall Mounted, trap-standard, white vitreous china, back and rim guard, back and wall hanger supports. Floor supported wall outlet cast iron p-trap, with stainless steel rim guards. Sink shall be mounted with the counter or rim no higher than 34 inches.

Flow Rate: 2.2 gallons per minute when measured at a flowing water pressure of 60 psi.

Faucet: Wall-mounted, brass construction, brass valve body, wristblade handles.

5. P-5A Shower Faucet: Single-handle pressure-balance, thermostatic, thermostatic and pressure-balance valve. Include hot and cold-water indicators; check stops; and shower head, arm, and flange. Coordinate faucet inlets with supplies and outlet with diverter valve. Provide anti-scald device.

Flow Rate: 1.5 gallons per minute when measured at a flowing water pressure of 60 psi.

Provide with ADA lever handle, hand held adjustable spray shower head with minimum 6" hose attachment, vacuum breaker, chrome finish and slide bar. Mount bottom of slide bar 44" above the shower stall or tub surface. Shower valve shall be the pressure balancing valve type and shall be designed to maintain a maximum two

degree F temperature difference from the selected discharge temperature. Operating force for faucet handle shall not exceed 5 lbf. Shower fittings shall be CSA certified. Mount faucet control in a space between 38" and 48" from the shower stall or tub surface.

6. FD Floor Drain: ASME A112.6.3, with bottom outlet, round top, chromium plated or nickel bronze or nickel brass strainer, floor drain shall be adjustable to floor thickness, clamping device and anchor flange as required, Board of Water Supply approved trap primer connection.

Loading: light duty

Material: cast iron with bronze top

7. WHA-1 Water Hammer Arrestor: Smith Hydtrotrol, ASSE 1010 or PDI-WH 201. Water hammer arrestors shall be PDI certified and sized as indicated on the drawings. Provide access door or removable panels where arrestors are concealed. Provide water hammer arrestors at all solenoid valves, at all groups of two or more flush valves, at all quick opening or closing valves, at all medical washing equipment and where shown on the drawings.
8. TP Trap Primer Valve: all bronze trap seal primer valve with threaded connections and removable operating parts; integral vacuum breaker and gasketed access cover for installation in a cold water service line to a plumbing fixture with trap connection for maintaining trap seal.

### 2.03 EQUIPMENT

- A. EWH-1 Electric Type Water Heater: Electric type water heaters shall conform to the UL Safety Standards. Each element shall be 12.1 kw and corrosion resistant.

## PART 3 - EXECUTION

### 3.01 DEMOLITION

- A. Disconnect, demolish, and remove plumbing systems, equipment, and components indicated to be removed.
  1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
  3. Equipment to Be Removed: Disconnect and cap services and remove equipment.
  4. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

### 3.02 INSTALLATION AND WORKMANSHIP

- A. All workmanship shall be of the highest standard. Vertical piping lines shall be plumbed and lines that are grouped shall be parallel and as direct as possible. Exposed pipe, where indicated, shall be run parallel with walls.
- B. The installation shall comply with the latest accepted edition of the Plumbing Code, the Fire Marshal's regulations of the State of Hawaii, the regulations of the Department of Health of the State of Hawaii and all other applicable codes.
- C. The Contractor shall obtain and pay for all permits and licenses for the work. At completion, transmit to the Engineer, applicable certificates of inspections.

### 3.03 EXCAVATION, BACKFILL AND CONCRETE WORK

- A. All excavation and backfill in connection with plumbing work and mechanical work shall be accomplished in accordance with the Plumbing Code. Excavation shall be provided under a separate section. Provide proper support along the pipe length where rocks are encountered, provide a minimum of 3" of backfill properly tamped for pipe. Coral shall not be used as backfill material for underground piping. Pipes shall be buried a minimum of 12" below grade.

### 3.04 CROSS CONNECTIONS AND INTERCONNECTIONS

- A. No plumbing fixtures, device, or piping shall provide a cross connection or interconnection between a distributing supply for drinking or domestic purposes and a polluted supply such as a drainage system or a soil or waste pipe, so as to make possible the backflow of sewage, polluted water, or waste into the water supply system.

### 3.05 CUTTING AND REPAIRING

- A. The work shall be carefully laid out in advance providing sleeves, templates or details for chases and openings to be left in the walls, floors, structural members or partitions. Any access cutting of construction will not be permitted. Cutting shall be carefully done, and damage to buildings, piping, wiring or equipment as a result of cutting for installation shall be repaired by skilled mechanics of the trade involved at no additional expense to the Owner. Written permission from the Engineer's representative shall be obtained before any cutting is done.

### 3.06 PROTECTION TO FIXTURES, MATERIALS AND EQUIPMENT

- A. Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work the fixtures, materials and equipment shall be thoroughly cleaned, repainted as required, adjusted and operated.

### 3.07 CHLORINATION

- A. Domestic hot and cold water lines shall be sterilized with chlorine before acceptance of the work. Dosage of chlorine shall be not less than 50 ppm. Chlorinating material shall be introduced into the water lines in a manner approved by the Engineer. After a contact period of not less than twenty four (24) hours the system shall be flushed with clean water until the residual chlorine content is not greater than 0.2 ppm. All valves in the lines being sterilized shall be opened and closed several times during the contact period. A certificate shall be furnished to the Engineer evidencing proper performance of sterilizations.

### 3.08 PIPE INSTALLATION

- A. No pipe shall be closed up, furred in, buried or otherwise hidden until it has been inspected, tested and approved by the Engineer.
  - 1. Sanitary piping shall slope not less than 1/4" per foot of horizontal run unless otherwise noted.
  - 2. Vent pipes shall be graded to expel water.
  - 3. Drain pipes shall be run with easy bends and long radius turns. Offsets shall be made at an angle of 45-degrees or less except where cleanouts are provided for shorter turns.
  - 4. All piping shall be inspected inside and out before installation and no obstructions shall be allowed. Pipe ends shall be taper reamed to full I.D. and all burrs removed.
  - 5. All exposed piping shall be carefully handled to avoid excessive tool marking and polished fittings shall be handled with extra care so that tool marks do not show. All exposed piping shall be in one length, where possible, fittings shall be in walls under counter cabinet or in furred space.
  - 6. Escutcheons: Shall be installed around all exposed pipe passing through a finished floor, wall or ceiling. Escutcheons shall be of sufficient outside diameter to cover the sleeve opening and shall fit snugly around the pipe.
  - 7. Anchor piping in building with approved clamps or adjustable hangers spaced in accordance with the Plumbing Code. Straps for copper tubing shall be copper or brass, or copper plated. Where copper contacts ferrous material, wrap with two layers of plastic tape.
  - 8. Provide dielectric unions where copper piping is connected to ferrous pipe.
  - 9. Install union and shut-off valve on pressure piping at connections to equipment.

### 3.09 PLUMBING FIXTURES

- A. Furnish, install and properly connect all plumbing fixtures and fittings and/or trims herein specified.
- B. Setting of all fixtures shall be done in an approved workmanlike manner. Special attention shall be exercised to the fixture heights, especially for urinals, drinking fountains, electric water coolers, and wash basins. Where definite dimensions are not indicated, consult Engineer for exact heights. Joints between fixtures and wall shall be neatly caulked.
- C. Fastenings: Where trimmings and fixtures are secured to concrete block or concrete, they shall be fastened with 1/4" minimum brass machine screw type expansion bolts sufficiently long to insure that the shield shall be wholly within sound concrete. Where trimmings and fixtures are to be mounted on concrete block or concrete, each fixture shall have the proper cast iron fixture bracket set anchored to the masonry wall with 1/4" diameter toggle bolts. Where fixtures are mounted on metal stud wall, provide 1/4" x 5" steel backing plates, spot welded to at least two studs. All exposed bolt head and nuts

shall be chrome plated hexon brass with round tops. All escutcheons on walls and floors shall be chrome plated cast brass with chrome plated set screws.

- D. No wood grounds shall be used for supports of plumbing fixtures.
- E. Fixture supports shall be furnished by the Contractor as recommended by the manufacturer.
- F. Provide and install shutoff valve to water supply branches to fixtures whether specifically mentioned or not.
- G. If fixtures are supplied with hot water supply openings when not required, such openings are to be closed permanently with chrome plated faucet hole covers.

### 3.10 VALVE INSTALLATION

- A. Install shutoff valve close to water main on each branch and riser serving plumbing fixtures or equipment, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops. Use ball or gate valves for piping NPS 2 and smaller. Use butterfly or gate valves for piping NPS 2-1/2 and larger.
- B. NPS 1/2 or NPS 3/4 inlet hose-end drain valves may be adequate for application in first paragraph below.
- C. Install drain valves for equipment at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
  - 1. Hose-End Drain Valves: At low points in water mains, risers, and branches.
  - 2. Stop-and-Waste Drain Valves: Instead of hose-end drain valves where indicated.
- D. Install balancing valve in each hot-water circulation return branch and discharge side of each pump and circulator. Set balancing valves partly open to restrict but not stop flow. Use ball valves for piping NPS 2 and smaller and butterfly valves for piping NPS 2-1/2 and larger.
- E. Valves shall be located for easy access and shall be provide with separate support. Valves shall be accessible with access doors when installed inside partitions or above hard ceilings.

### 3.11 ROOF OPENINGS AND FLASHINGS

- A. Furnish and install for each pipe passing through roofing, an approved four-pound lead flashing assembly with 10" skirt and lead counter flashing. Vent piping through roofing to be at center of roof sheet. Venting through side laps will not be acceptable.
- B. Coordination with Roofing: Base and sleeve portions shall be installed as roofing work progresses. Counter flashing shall be installed after roofing is finished and approved by the Engineer.

### 3.12 PIPE INSULATION

- A. Provide insulation on all hot water piping. Insulation through wall penetrations shall be a continuous single piece through the entire penetration. All edges, flaps, corners, and exposed insulation shall be neatly tucked or secured.

### 3.13 TESTING AND INSPECTION

- A. Contractor shall furnish all equipment for tests and any required retests and pay for all cost of repairing any damage resulting from such tests. Contractor shall adjust systems until they are approved. Tests shall be performed in the presence of, and to the satisfaction of, the Engineer and inspector of the official agency involved.
- B. Sanitary and water piping shall be tested in accordance with the Plumbing Code. Sanitary shall be tested with a minimum of 10 feet of water for 15 minutes. Water piping shall be tested at 150 psi.

### 3.14 CLEAN UP

- A. Debris shall not be allowed as a result of this work. Upon completion of this work, remove all debris and excess materials, tools, etc., resulting from this work from the job site and leave the location of this work broom-cleaned in an acceptable manner as approved by the Engineer. All work including plumbing fixtures, traps and mechanical equipment shall be thoroughly cleaned and ready for use.

END OF SECTION

## SECTION 15650 - AIR CONDITIONING AND VENTILATION

### PART 1 - GENERAL

#### 1.01 GENERAL CONDITIONS

- A. The General Conditions and Special Conditions preceding shall govern this section of the specifications.

#### 1.02 SCOPE

- A. Provide complete and operating air conditioning and ventilation systems. "Provide" shall mean "Furnish and Install" when used herein. The air conditioning and ventilation systems shall include all equipment and all related items necessary to complete the work as shown on the drawings and herein specified. The work shall include the following:
  1. Removal of existing materials and equipment.
  2. Ductwork and accessories.
  3. Exhaust Fans
  4. Controls and control wiring.
  5. Corrosion protection.
  6. Adjusting, balancing and testing.
  7. Painting and finishing.
  8. Operating and maintenance instructions.
  9. Manufacturer's literature, shop drawings, record drawings.

#### 1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 15400 – PLUMBING.
- B. Line voltage wiring and conduit is specified in DIVISION 16 - ELECTRICAL.

#### 1.04 GENERAL REQUIREMENTS

- A. It is the intent of the plans and specifications to provide a complete installation. Should there be omissions or discrepancies in the plans and specifications, the Contractor shall call the attention of the Engineer to such omissions and discrepancies in advance of the date of bid opening so that the necessary corrections can be made. Otherwise the Contractor shall furnish and install the omissions or discrepancies as if the same were specified and provided for.
  1. Standards:
    - a. All work shall be done in accordance with applicable ordinances and codes of the County of Honolulu and in accordance with State Department of Health regulations.
    - b. Work shall comply with applicable regulations of the State of Hawaii, National Fire Protection Association (NFPA) Pamphlet No. 90A, and American Society of

Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 15-1978.

- c. Contractor shall obtain all permits, licenses and certificates and pay for all fees.
2. Drawings and Specifications: The drawings and specifications are intended to cover the complete installation of systems to function as described. The omission of reference to any necessary item of labor or material shall not relieve the Contractor from providing such labor or material. Drawings do not attempt to show exact details of piping and ductwork. Provide offsets as necessary to avoid local obstructions or interferences with other trades.
    - a. Contract Drawings: Mechanical plans are essentially diagrammatic, showing locations of ducts, and other mechanical equipment. Where locations are not dimensioned, they are approximate, and before installing, Contractor shall study existing conditions and make installation in most logical manner.
    - b. Shop Drawings: As soon as practical, and within 30 days after award of contract and before commencement of installation of any materials and equipment, six sets of shop drawings shall be submitted. Submittals shall consist of a complete list of equipment and materials, including manufacturer's descriptive and technical literature, performance charts and curves, catalog cuts, and installation instructions. Incomplete and partial submittals will be returned unreviewed. Shop drawings shall also be submitted which contain layout drawings of ductwork and piping showing locations of hangers and supports, capacity curves or ratings to assure balanced refrigeration at the design conditions, and any other details required to demonstrate that the system has been coordinated and will properly function as a unit. Where piping and equipment are to be supported other than as indicated, the details shall include loadings and types of frames, brackets, stanchions, or other supports. Control diagrams shall be submitted which identify each component and show all interconnected or interlocked components and the control sequence.
    - c. Record Drawings: Contractor shall keep a record set of drawings available at the jobsite on which all changes and additions in the Mechanical Work are shown. Contractor shall furnish the Engineer with reproducible drawings of each installation showing the exact location of all items which are different from the original drawings.

#### 1.05 WARRANTY

- A. All work in this Section shall be under warranty for a period of one (1) year from the date of acceptance of the work as a whole by the Engineer. Should any equipment or material fall within this period, the Contractor shall replace or repair that item at no cost for material and/or services, if such is due to faulty workmanship or quality of material furnished.
- B. The Contractor shall be responsible for all damage to any part of the premises caused by failure in the equipment furnished under this section for a period of one year after the final acceptance of the work as a whole.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS



- A. All materials delivered to the job site and installed shall be new, best of their respective grades and as specified on the drawings. Materials shall be of the same brand or manufacturer throughout for each class of material or equipment.
  - 1. Chilled Water Piping, and Accessories:
    - a. Flexible Connections: Flexible neoprene connectors with control rods, Mason Type MFNC or approved equal.
    - b. Hangers: MSS SP-58 and SP-69, types 1, 6, 9, or 11 for suspended piping. Provide turnbuckles type 13 and 15 where required for vertical adjustment. Maximum spacing shall be as specified in SP-69.
  - 2. Ductwork and Accessories:
    - a. Sheet Metal Ductwork: Galvanized steel sheets, ASTM A527. Construction, gages, and reinforcement shall comply with SMACNA HVAC Duct Construction Standards, 1985 Edition.
    - b. Fittings: Vaned elbows, take-offs, branch connections, transitions, volume dampers, and flexible connections shall comply with SMACNA standards. Dampers shall be opposed blade type with locking quadrant. Provide turning vanes in all elbows and where indicated.
    - c. Supports: Galvanized steel straps or hanger rods in accordance with SMACNA Duct Construction Standards.
    - d. Flexible Connections: Neoprene coated glass fabric weighing approximately 30 ounces per square yard.
    - e. Flexible Ducts: UL Class 1 air duct insulated with fiberglass, Owens-Corning INL-25 Flexible Duct, or equal.
    - f. Diffusers: Louvered face type with surface flange, distribution pattern as indicated, volume control opposed blade damper, and extractor. Finish shall be off-white baked enamel. Material shall be aluminum. Face plate shall be removable. Carnes Model 47 or equal.
    - g. Registers: Fixed pattern, surface mounted, all aluminum, 45 degree deflection, Carnes Model 6831 AH or approved equal for return and Carnes 6821AH or approved equal adjustable, double deflection, all aluminum for supply.
    - h. Backdraft Damper: Backdraft damper shall be factory fabricated unit with delicately balanced blades that open automatically when the fan starts and close by gravity when the fan stops. Edges of blades shall be provided with felt or rubber strips to prevent rattling and insure a tight seal.
    - i. Birdscreens: Two by two mesh, 0.063 inch diameter aluminum wire or .031 inch diameter stainless steel wire, with frame.

## 2.02 EQUIPMENT

- A. Ventilation Fans:
  - 1. Power Roof Ventilators: Power roof ventilator shall be down blast type consisting of a fan with an aluminum housing and weatherproof hood. The entire assembly shall be tested to resist a 100 mile per hour wind force. Fans shall be centrifugal type, V-

belt driven or direct connected. Belt drives shall be rated for at least 150 percent of the motor nameplate horsepower. Bearings shall be permanently seal grease lubricated ball or roller type. Fan discharge openings shall be provided with 1/2" by 1/2" wire mesh screen. Motors shall be provided with unfused safety electric power disconnect switch mounted under the fan housing, adjacent to the motor. Thermal overload protection shall be provided for the electrical motor. Housing shall be arranged to facilitate access for servicing.

2. Ceiling Exhaust Fan: Exhaust fan shall be in-line centrifugal type, belt driven. Fan housing shall be constructed of heavy gauged formed steel of manufacturer's standard thickness. Bearings shall be permanently sealed grease lubricated ball or roller type. Thermal overload protection shall be provided for the electric motor.
3. Motors and Motor Starters: Motors and motor starters shall conform to NEMA MG-1 and NEMA ICS. Motors shall not exceed 1800 rpm, unless otherwise indicated and shall be open, dripproof enclosure type. Motor starters shall be magnetic across-the-line type with general purpose enclosure.

### 2.03 CONTROLS

- A. General: Controls shall be electric, electronic, or solid-state electronic, or a combination that will provide the required sequence of operation control. Schematic control diagrams shall be submitted. All control work shall be performed by an experienced and licensed controls sub-contractor.
- B. Control Relays: General purpose type, with plug in socket screw terminal connections, with 2 normally open and 2 normally closed sets of contacts unless otherwise indicated, and coil voltage as indicated.
- C. Wiring and Accessories: Provide all required interconnecting wiring to complete the system. Provide transformers as required. Electrical work shall comply with local codes and the electrical section of this specification.
- D. Motor Starters: Horsepower rated manual or magnetic starters shall be provided, as indicated. Starters shall conform to NEMA ICS and shall have thermal overload protection and other appurtenances necessary and as indicated.

### 2.04 CORROSION PROTECTION

- A. The entire apparatus being coated shall be dismantled to the maximum degree without disturbing piping or wiring. Upon completion of the coating, the apparatus shall be reassembled with care so that the coating surface is not damaged.
- B. Surface preparation and application shall be in strict accordance with the coating manufacturer's instructions.
- C. Primers: Apply a base primer of Heresite P-700.
- D. Workmanship: Application of coating materials shall be done by skilled applicators. Criteria of good workmanship desired and neat appearance of the finished surfaces are: absence of sags, runs, and unnecessary brush marks. Other criteria are: thorough mixing of coatings, limited use of thinners, uniformity of film thickness, proper drying time between coats, and protection of surfaces not to be coated.

## PART 3 - EXECUTION

### 3.01 INSTALLATION REQUIREMENTS

- A. Necessary supports and vibration isolators shall be provided for equipment and appurtenances as required. Equipment shall be installed in accordance with manufacturer's instructions.

### 3.02 DUCTWORK INSTALLATION

- A. Ductwork installation shall be in accordance with SMACNA Duct Construction Standards, 1985 Edition. Ducts shall be installed leaktight so that no leakage of air can be detected. Adjust dampers, diffusers, registers, and accessories to deliver air quantities indicated and so that draft and objectionable noise are eliminated. Provide turning vanes at all elbows and tees and extractors at all branch connections.
  - 1. Sizes, runs, and connections of ducts shall be as indicated. Adhere to drawings as closely as possible. Install ductwork in adherence to heights permitted by the structure and consult with other trades, and in conjunction with them, establish necessary space requirements for each trade. Duct sizes shown on drawings are net size.
  - 2. Openings through construction required for ductwork shall be provided; prepare shop drawings locating such duct openings, and obtain approval in ample time to meet building construction schedule. Ductwork specified herein shall have rectangular cross section unless otherwise indicated.
  - 3. Details of construction, metal gauges, reinforcement and materials not specified herein shall be in accordance with SMACNA Low Velocity Duct Construction Standards, NFPA 90A or as approved. Fabricate ductwork in first class manner with airtight joints, presenting smooth surface on the inside, neatly finished on the outside.
  - 4. Where square elbows are used, provide fixed double radius turning vanes. Construct, brace and support ducts in such a manner that they will not sag or vibrate when fans are operating.
  - 5. Ductwork connections to air conditioning unit and exhaust fan shall be flexible duct connector material with 4" of free space between collars connected.
    - a. Install a sheet metal band completely around collar at each end of connections and fasten to collars with screws through the band and glass fabric. Screws shall be placed no more than 3" on centers.
- B. During construction, keep openings in ductwork closed with sheet metal to prevent injury and take all possible precautions to keep interior of ducts, air intake chambers and fan housings free from dirt or dust.
- C. Support galvanized horizontal ducts and at changes of direction with hangers in accordance with SMACNA Duct Construction Standards.
- D. All duct openings to exterior shall be weatherproofed with sheet metal blocking. Thoroughly seal all exterior duct openings and joints with silicone sealant.
- E. Provide externally adjustable splitter dampers at all tees.

- F. Cleaning of Duct System: After completing installation of ductwork, entire system shall be cleaned of rubbish, plaster, dirt, and any other debris. After installation of equipment and connection are made on fan, and before any grilles, outlets or registers are installed, entire system shall be blown out with dampers and outlets wide open.

### 3.03 AIR REGISTERS

- A. Registers shall be flush, tightly sealed, squared and centered to the outlines of the ceiling or wall. Any outlet which is not properly set and sealed will not be accepted.

### 3.04 ADJUSTING, BALANCING, AND TESTING

- A. Cleaning and Adjusting: Pipes, strainers, valves and pumps shall be cleaned free of scale and thoroughly flushed of all foreign matter. Temporary bypass shall be provided for all water coils to prevent flushing water from passing through coils. Strainers and valves shall be thoroughly cleaned. Inside of air-cooled condensers shall be thoroughly cleaned of all debris and blown free of all small particles of rubbish and dust. Equipment shall be wiped clean with all traces of oil, dust, dirt, or paint spots removed. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. Belts shall be tightened to proper tension. Control valves and other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions.
- B. Tests:
  - 1. Ductwork: Ductwork shall be tested and made substantially airtight at static pressure indicated for the system before covering the insulation. Substantially airtight shall be construed to mean at all duct joints.
- C. Performance Tests: Testing and balancing of the systems shall be performed by an independent testing agency, by personnel who are not employees of the installing contractor. After cleaning and testing are completed as specified, each system shall be tested as a whole to see that all items perform as integral parts of the system. Corrections and adjustments shall be made as necessary.
- D. Balancing:
  - 1. Duct systems shall be balanced as follows:
    - a. System (or air moving device) to not less than design cfm.
    - b. Major duct branches to plus or minus 5 percent.
    - c. Diffusers, registers, and grilles to plus or minus 10 percent.
- E. Test Reports:
  - 1. Typewritten schedules of readings taken during the balancing and testing operations indicating the required or specified reading, and the final balanced reading shall be provided for the following items:
    - a. Fans: Size, type, speed in rpm, outlet velocity in fpm, static pressure in inches water gage, air quantity in cfm, and motor load in amperes.
    - b. Air Balance:
      - 1) Air Outlets and Inlets: Size, velocity in fpm, and air quantity in cfm.
      - 2) Ducts: Size, velocity in fpm, and air quantity in cfm.

### 3.05 ELECTRICAL WORK

- A. Electric motor driven equipment specified herein shall be provided complete with motors, motor starters, control wiring and controls. Electrical equipment and wiring shall be in accordance with ELECTRICAL Section. Motor starters shall be provided by Mechanical Contractor complete with properly sized thermal overload protection and other appurtenances necessary for the motor control specified. Manual or automatic control and protective devices required for the operation herein specified and any control wiring required for controls and devices but not shown on the electrical plan shall be provided. Electrical work shall conform to NFPA 70.

### 3.06 PAINTING AND FINISHING

- A. Provide touch-up painting on equipment whose factory finish has been damaged and on all walls, ceilings and other finished surfaces affected by this work. Touch up painting shall match adjacent surfaces.
- B. Clean up all areas around the work installed under this section and remove all debris, dust, and dirt caused by the work.

### 3.07 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Bound Instructions: Six complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment shall be furnished. Flysheet shall be placed before instructions covering each subject. The instruction sheets shall be approximately 8-1/2 by 11 inches, with large sheets of drawings folded in. The instructions shall include, but shall not be limited to, the following:
  - 1. Wiring and control diagrams, with data to explain the detailed operation and control of each component.
  - 2. A control sequence describing startup, operation and shutdown.
  - 3. Operating and maintenance instructions for each piece of equipment, including lubrication instructions.
  - 4. Manufacturer's bulletins, cuts and descriptive data.
  - 5. Parts lists and recommended spare parts.
- B. Field Instructions: Upon completion of the work and at a time designated, the services of one or more project engineers shall be provided by the contractor for a period of not less than one day to instruct the Owner's representative in the operation and maintenance of the system. These field instructions shall cover all the items contained in the bound instructions.

END OF SECTION

## SECTION 15901 - TESTING, ADJUSTING AND BALANCING (TAB)

### PART 1 - GENERAL

#### 1.01 SPECIAL CONDITIONS

- A. As specified in Division 1 (as required).

#### 1.02 SCOPE

- A. The TAB work shall include the following:
  - 1. Ventilation equipment.
  - 2. Ducts, duct outlets and duct inlets.
  - 3. Transfer ducts, openings, grilles and registers.
  - 4. Electrical measurements.
  - 5. Controls and control components.

#### 1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 15400 - PLUMBING.
- B. DIVISION 16 - ELECTRICAL.
- C. SECTION 15650 - AIR CONDITIONING AND VENTILATION.

#### 1.04 GENERAL REQUIREMENTS

- A. It is the intent of the plans and specifications to provide a complete installation. Should there be omissions or discrepancies in the plans and specifications such as dampers, gauges, and sensors that will inhibit the proper TAB process, the Contractor shall call the attention of the Engineer to such omissions and discrepancies in advance of the date of bid opening so that the necessary corrections can be made. Otherwise the Contractor shall furnish and install the omissions or discrepancies as if the same were specified and provided for.
  - 1. Standards:
    - a. All work shall be done in accordance with applicable ordinances and codes of the City and County of Honolulu and in accordance with State Department of Health regulations.
    - b. Work shall comply with applicable regulations of the State of Hawaii, National Fire Protection association (NFPA) Pamphlet No. 90A, and American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 111-1988.
    - c. Applicable standard published by the National Environmental Balancing Bureau (NEBB) and/or the Associated Air Balance Council (AABC).
    - d. Contractor shall obtain all permits, licenses and certificates and pay for all fees.
  - 2. Drawings and Specifications: The drawings and specifications are intended to cover the complete installation of systems to function as described. The omission of refer-

ence to any necessary item of labor or material shall not relieve the Contractor from providing such labor or material. Drawings do not attempt to show exact details of piping and ductwork.

- a. Contract Drawings: Mechanical plans are essentially diagrammatic, showing locations of ducts, and other mechanical equipment. Where locations are not dimensioned, they are approximate, Contractor shall study existing conditions and plan his work in the most logical manner.
- b. Shop Drawings: As soon as practical, obtain a set of shop drawings and data submittals including the automatic control diagrams that have been reviewed by the Engineer. Refer to section 15650, Paragraph 1.04B (2) and coordinate with the Contractor to obtain all pertinent information on the mechanical systems.

#### 1.05 SUBMITTALS

- A. Within 15 days after the "Notice to Proceed", the independent air balance agency shall submit 3 copies of documentation to confirm compliance with the following:
  1. The completion of five(s) project of similar size and scope of this project.
  2. The agency is a certified firm by the NEBB or the AABC and employs one or more qualified supervisor(s) as defined by the NEBB or AABC.
  3. All instruments and equipment used by the agency is accurately calibrated in accordance with the requirements of NEBB or AABC.
  4. Specimen copies of each of the report forms proposed for use on this project.
- B. At least 60 days prior to starting field work, submit 3 copies of:
  1. Shop drawings clearly showing the equipment, air devices and associated apparatus related to the report forms. Limit one entry to one line of the report form.
  2. A set of report forms filled out as to the design values and the installed equipment pressure drops, the required CFM for air terminals, and design parameters to be used in the TAB process.
  3. A complete list of instruments proposed to be used organized in appropriate categories, with data sheets for each. Show:
    - a. Manufacturer and model number.
    - b. Description and use when needed to further identify the instrument.
    - c. Size or capacity range.
    - d. Latest calibration date.
  4. Engineer will review submittals for compliance with contract documents, and will return one set marked to indicate:
    - a. Discrepancies noted between data shown and contract documents.
    - b. Additional, or more accurate, instruments required.
    - c. Requests for re-calibration of specific instruments.

1.06 GUARANTEE

- A. Testing agency shall include an extended warranty of 90 days, after completion of test and balance work, during which time the Engineer at his discretion may request a re-check, or resetting of any outlet or supply air fan, as listed in test report. the testing agency shall provide technicians to assist the Engineer in making tests he may require during this period of time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 JOB CONDITIONS & COORDINATION

- A. Prior to start of testing, adjusting and balancing, verify that the required "Job Conditions" are met:
  - 1. Systems installation is complete and in full operation.
- B. Coordination:
  - 1. Coordinate services with the work of the various trades to ensure rapid completion of the services.
  - 2. Promptly report to the Contractor and Engineer any deficiencies noted during performance of services to allow immediate corrective action.
- C. Existing Conditions.

END OF SECTION



## DIVISION 16 - ELECTRICAL

### SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SUMMARY

- A. This section specifies the general electrical requirements for all labor, materials, equipment, and services provided under DIVISION 16 - ELECTRICAL.
- B. Work specified in this Division shall include, but not be limited to the following:
  - 1. Primary and/or secondary electrical and telephone services.
  - 2. Distribution system, including metering equipment, switchboards, panelboards, overcurrent protection devices, and feeders.
  - 3. Complete electrical system wiring including branch circuits, luminaires, switches, receptacles, outlets and control devices.
  - 4. Complete lighting and control systems, including time switches, lighting contactors, control stations, and lighting control panels.
  - 5. Power wiring for electrically-operated equipment and appliances.
  - 6. Empty Raceway system for telephone and telecommunications/data systems.
  - 7. Include in the bid and pay for the permits, plan review fees, inspection fees and deliver the certificate of final inspection to Contracting Officer.
  - 8. Testing.
  - 9. Record drawings.

##### 1.02 WORK INCLUDED

- 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. Electrical equipment and wiring system shall have sufficient capacity to accommodate all equipment, appliances and other electrical loads as specified herein and shown on the drawings and as required per National Electrical Code and other applicable codes, standards and requirements plus spare capacity to accommodate any planned future facilities and additions and minimum 20 percent spare capacity for future growth.

- D. All concrete, steel reinforcement, miscellaneous metal-work, earthwork, painting, and grouting shall conform to the applicable requirements of the detailed equipment specifications as prescribed in appropriate sections.
- E. 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.

#### 1.03 REFERENCES

- A. The publications listed herein form a part of this specification to the extent referenced. The publications may be referred to in the text by the basic designation only. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.
- B. Comply with the applicable State Code Rules and the ordinances of the County having jurisdiction over this project.
- C. Comply with requirements and regulations of the electric, and telephone utilities.
- D. 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.

#### 1.04 RELATED WORK

- A. DIVISION 3 - CONCRETE.
- B. SECTION 09901 - PAINTING.
- C. DIVISION 15 - MECHANICAL.

#### 1.05 DEFINITIONS

- A. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, shall be as defined in IEEE 100.
- B. The technical sections referred to herein are those specification sections that describe products, installation procedures, and equipment operations and that refer to this section for detailed description of submittal types.
- C. The technical paragraphs referred to herein are those paragraphs in PART 2 - PRODUCTS and PART 3 - EXECUTION of the technical sections that describe products, systems, installation procedures, equipment, and test methods.

#### 1.06 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Certificates:
  - 1. Submit written certification that electrical systems are complete and operational as stipulated in item entitled "DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS" hereinbelow.

2. Submit certificate of final inspection and acceptance as stipulated in item entitled "INSPECTION" hereinbelow.
- C. Warranty: Submit warranty as stipulated in item entitled "WARRANTY" hereinbelow.
  - D. Record Drawings: After the work is complete, Contractor shall provide record drawings showing the as-built conditions in accordance with SECTION 01770 – CLOSE-OUT PROCEDURES.
  - E. Submittals required in the sections which refer to this section shall conform to the following additional requirements. Submittals shall include the manufacturer's name, trade name, place of manufacture, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and technical paragraph reference. Submittals shall also include applicable industry and technical society publication references, and years of satisfactory service, and other information necessary to establish contract compliance of each item to be provided. Photographs of existing installations are unacceptable and will be returned without approval. Transmittal letter shall include a listing of all items by manufacturer and catalog number which are included in the submittal package and shall clearly identify the submittal with this project.
  - F. Submittals for each manufactured item shall be current manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves, and catalog cuts. Handwritten and typed modifications and other notations not part of the manufacturer's preprinted data may result in the rejection of the submittal. Should manufacturer's data require supplemental information for clarification, the supplemental information shall be submitted as specified for certificates of compliance.
  - G. Submittal drawings shall be a minimum of 11 inches by 17 inches in size using a minimum scale of 1/8 inch per foot, except as specified otherwise. Include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.
  - H. Where installation procedures or part of the installation procedures are required to be in accordance with manufacturer's instructions, submit printed copies of those instructions prior to installation. Installation of the item shall not proceed until manufacturer's instructions are received. Failure to submit manufacturer's instructions shall be cause for rejection of the equipment or material.
  - I. Submit manufacturer's certifications as required for products, materials, finishes, and equipment as specified in the technical sections. Certificates from material suppliers are not acceptable. Preprinted certifications and copies of previously submitted documents will not be acceptable. The manufacturer's certifications shall name the appropriate products, equipment, or materials and the publication specified as controlling the quality of that item. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; "achieve the same end use and results as materials formulated in accordance with the referenced publications"; or "equal or exceed

the service and performance of the specified material.” Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer’s letterhead and shall be signed by the manufacturer’s official authorized to sign certificates of compliance.

- J. Where equipment or materials are specified to conform to industry and technical society reference standards of organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), and Underwriters Laboratories Inc. (UL), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance.
- K. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing. The certificate shall state that the item has been tested in accordance with the specified organization’s test methods and that the item complies with the specified organization’s reference standard.
- L. Where applicable, submit shop drawings of required Utility Company equipment to the respective Utility Companies for their review and approval prior to the ordering of the materials. These shop drawings shall include all required dimensions, references to required standards such as EUSERC, and other notations as required by the Utility Companies.
- M. Submit text of posted operating instructions for each system and principal item of equipment as specified in the technical sections.
- N. Each submittal shall be prepared with a summary sheet attached to each copy identifying all items included in the submittal. Incomplete submittals and those without summary sheets will be returned without review.

#### 1.07 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 Contracting Officer. 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 having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers’ factory or laboratory tests, is furnished.

- D. Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.
- E. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70.

#### 1.08 PERMITS AND INSPECTION

- A. All permits required by local ordinances shall be obtained and paid for by the Contractor.

#### 1.09 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. 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.
- B. Obtain, refer to, and comply with all project-specific Utility Company Drawings and requirements. The contract drawings depict the anticipated Utility Company requirements only. Do not proceed with the Utility Company related work without first verifying their exact requirements. Notify the Contracting Officer of any differences between what is shown on the contract drawings and what is required by the Utility Companies.
- 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 Contracting Officer.

#### 1.10 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 Contracting Officer and at no additional cost to the State.

#### 1.11 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, fixtures, apparatus and associated wiring including raceways, within 10 feet of the original location, without additional cost, for code compliance and to avoid conflict with other systems or trades, structures, utilities and when directed before installation.
- E. Equipment ratings or wire sizes that are missing or shown in error shall be provided to have adequate capacity to serve the required and future loads plus minimum 20 percent spare capacity, and be in compliance with NEC.
- F. Verify voltages and other ratings of energy conversion, transformation and electrical utilization equipment prior to placing order with factory. Input voltages of equipment shall match serving utility or system voltage available.

#### 1.12 POSTED OPERATING INSTRUCTIONS

- A. Provide for each system and principal item of equipment as specified in the technical sections for use by operation and maintenance personnel. The operating instructions shall include the following:
  1. Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
  2. Start up, proper adjustment, operating, lubrication, and shutdown procedures.
  3. Safety precautions.
  4. The procedure in the event of equipment failure.
  5. Other items of instruction as recommended by the manufacturer of each system or item of equipment.
- B. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. For operating instructions exposed to the weather, provide weather-resistant materials or weatherproof enclosures. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

#### 1.13 MANUFACTURER'S NAMEPLATE

- A. Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

#### 1.14 FIELD FABRICATED NAMEPLATES

- A. ASTM D709. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified in the technical sections or as indicated on the drawings.

Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, white, with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one inch by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

#### 1.15 WARNING SIGNS

- A. Provide warning signs/labels for arc flash protection in accordance with NFPA 70E and NEMA Z535.4 for switchboards and panelboards, that are likely to require examination, adjustment, servicing, or maintenance while energized. Provide field installed signs/labels to warn qualified persons of potential electric arc flash hazards when warning signs/labels are not provided by the manufacturer. The marking shall be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.
- B. Provide warning signs for the enclosures of electrical equipment including substations, pad-mounted transformers, pad-mounted switches, generators, and switchgear having a nominal rating exceeding 600 volts.
  - 1. When the enclosure integrity of such equipment is specified to be in accordance with IEEE C57.12.28 or IEEE C57.12.29, such as for pad-mounted transformers, provide self-adhesive warning signs on the outside of the high voltage compartment door(s). Sign shall be a decal and shall have nominal dimensions of 7 inches by 10 inches with the legend “DANGER HIGH VOLTAGE” printed in 2 lines of nominal 2 inch high letters. The word “DANGER” shall be in white letters on a red background and the words “HIGH VOLTAGE” shall be in black letters on a white background. Decal shall be Panduit No. PPSO710D72 or approved equal.
  - 2. When such equipment is guarded by a fence, mount signs on the fence. Provide metal signs having nominal dimensions of 14 inches by 10 inches with the legend “DANGER HIGH VOLTAGE KEEP OUT” printed in 3 lines of nominal 3 inch high white letters on a red and black field.

#### 1.16 ELECTRICAL REQUIREMENTS

- A. Electrical installation shall conform to IEEE C2, NFPA 70, and requirements specified herein.

#### 1.17 INSTRUCTION TO GOVERNMENT PERSONNEL

- A. Where specified in the technical sections, furnish the services of competent instructors to give full instruction to designated Government personnel in the adjustment, operation, and maintenance of the specified systems and equipment, including pertinent safety requirements as required. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours per day) of instruction furnished shall be as specified in the individual section.

#### 1.18 WARRANTY

- A. Contractor’s Warranty: 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 Contracting Officer 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. Lamps shall be warranted for fifty percent of rated lamp life.

- B. The Contractor's Warranty shall be countersigned by the General Contractor.

## PART 2 - PRODUCTS

### 2.01 FACTORY APPLIED FINISH

- A. Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA 250 corrosion-resistance test.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. Install all electrical materials and equipment in accordance with manufacturer's recommendations and as accepted by the Contracting Officer for the seismic zone classification at the project site in accordance with the applicable 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. All wiring and overcurrent devices for equipment furnished by other trades are sized for a contemplated equipment size. If equipment other than contemplated and indicated on the plan is provided, the Contractor shall be responsible for providing the required wiring, switches, and overcurrent devices at no cost to the State. The Contractor shall submit the proposed revisions to the electrical design to the Contracting Officer for acceptance.
- D. The Electrical Contractor shall coordinate his work with other trades to avoid conflicts with civil, mechanical, structural, and architectural elements of this project.

### 3.02 JOBSITE CONDITIONS

- A. These specifications are accompanied by construction drawings including building and site plans of all trades showing locations of all service runs, feeder runs, 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 feet before installation at the direction of the Contracting Officer 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 Contracting Officer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

### 3.03 CONNECTIONS TO EQUIPMENT PROVIDED BY OTHER TRADES



- A. Electrical Contractor shall provide conduit, wiring and all electrical connections from building wiring to motors for ventilation, air conditioning, and other equipment, including all switches, motor protection devices, and controllers/starters as specified by other trades.
- B. Electrical Contractor shall ascertain from other trades furnishing electrically-operated equipment, the exact size and type of all motors and other loads, the exact locations of such equipment and the proper point where electrical connections should be brought through the floors, ceiling or walls, as the case may be. Locations shown are diagrammatic only; coordination of the correct locations shall be the full responsibility of the Electrical Contractor.
- C. Examine Civil, Mechanical, Architectural, Structural and other Drawings and Specifications for information concerning electrically-operated equipment and control apparatus and diagrams.
- D. Install individually mounted controllers/starters furnished for motors under other Divisions. Provide and install safety switches as necessary for each such motor in accordance with the NEC.
- E. All control devices and control wiring shall be provided as described in the installation manuals of equipment and/or the Drawings and Specifications of other trades and disciplines.

#### **3.04 FIELD APPLIED PAINTING**

- A. Prime and paint all exposed raceways, boxes, fittings, support channels, mounting hardware, and accessories to match finish of adjacent surfaces. Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting shall be as specified in Section 09901 - PAINTING.

#### **3.05 FIELD FABRICATED NAMEPLATE MOUNTING**

- A. Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of 2 sheet-metal screws or 2 rivets.

#### **3.06 WARNING SIGN MOUNTING**

- A. For warning signs at equipment rated in excess of 600 volts, provide the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.

#### **3.07 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 Contracting Officer.
- 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 Contracting Officer 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 record shall be kept for each piece of equipment. Copies shall be furnished to the Contracting Officer 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.
- F. After demonstration of systems, submit to the Contracting Officer 6 sets of keys for electrical equipment locks.

**3.08 INSPECTION**

- A. Arrange for periodic inspection by the local authorities and deliver the certificate of final inspection to the Contracting Officer.
- B. Arrange for periodic inspections by the utility companies and perform all work in accordance with the utility company requirements.

END OF SECTION

## SECTION 16100 - ELECTRICAL WORK

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This section includes, but is not limited to, electrical systems as indicated in the drawings.

#### 1.02 REFERENCES

- A. The publications listed herein form a part of this specification to the extent referenced. The publications may be referred to in the text by the basic designation only. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.

#### 1.03 RELATED WORK

- A. SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS applies to this section with additions and modifications specified herein.

#### 1.04 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Submit shop drawings and catalog cuts of the following equipment for approval. Each submittal shall be prepared with a summary sheet attached to each copy identifying all items included in the submittal. Incomplete submittals and those without summary sheets will be returned without review.
- C. Manufacturer's Catalog Data:
  - 1. Panelboards.
  - 2. Overcurrent protection devices.
  - 3. Safety switches.
  - 4. Automatic control devices. (Time switches, photocells, lighting, and control contactors).
  - 5. Cabinets.
  - 6. Transient Voltage Surge Suppressor (TVSS) / Surge Protective Device (SPD).
  - 7. Metering equipment.
  - 8. Wiring Devices and associated Device Plates.
- D. Shop Drawings:
  - 1. Panelboards.
- E. Reports: Submit test results for approval in report form:
  - 1. 600 volt wiring test.
  - 2. Grounding system test.

## 1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, “shall” or “must” 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 Contracting Officer. Provide equipment, materials, installation, and workmanship 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 this section.
- C. Alternative Qualifications: Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6,000 hours, exclusive of the manufacturers’ factory or laboratory tests, is furnished.
- D. Material and Equipment Manufacturing Date: Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Materials shall be new and those items listed by the Underwriters’ Laboratories shall bear “UL” label of approval.
- B. Brand names, manufacturer’s names and catalog numbers indicate the standard of design and quality required. Acceptable manufacturers for electrical apparatus include General Electric, Square D, Siemens-ITE, and Cutler-Hammer. All apparatus supplied shall bear the name of the approved manufacturer on its nameplates. Substitute materials may be used if pre-qualified prior to bidding by the Contracting Officer.
- C. Electrical equipment and luminaires shall be supplied through the manufacturer’s designated representative by a local distributor.
- D. Proof of compliance shall be furnished when shop drawings are submitted.
- E. 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.
- F. Where electrical apparatus is to be installed outdoors, NEMA 4X stainless steel housings shall be provided, unless noted otherwise.

## 2.02 RACEWAYS

- A. Rigid Steel Conduit: Rigid steel, zinc-coated inside and outside, for use with threaded fittings. ANSI C80.1.
- B. Intermediate Metal Conduit (IMC): Rigid steel, zinc- and chromate-coated inside and outside, for use with threaded fittings. UL 1242.
- C. Plastic-Coated Rigid Steel and IMC Conduit: NEMA RN1, Type 40 (40 mils thick).
- D. Electrical Metal Tubing (EMT): Thin walled steel tubing, zinc-coated. ANSI C80.3.
- E. Flexible Metal Conduit: Flexible steel conduit; zinc-coated inside and outside, smooth inside walls, liquid-tight with factory fittings for liquid-tight installation. Provide bushings with bonding jumper lugs for flexible conduit in excess of 6 feet in length. UL 360.
- F. Rigid Nonmetallic Conduit: Polyvinyl chloride, Schedule 40.
- G. Fittings for Metal Conduit, EMT, and Flexible Metal Conduit: UL 514B. Ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514B.
- H. Fittings for Rigid Metal Conduit and IMC: Threaded-type. Split couplings unacceptable.
- I. Fittings for EMT: Steel compression type.
- J. Fittings for Rigid Nonmetallic Conduit: NEMA TC 3 for PVC and UL 514B.

## 2.03 OUTLET BOXES AND COVERS

- A. Outlet and Small Junction Boxes: UL 514A, galvanized, if ferrous metal. UL 514C, if nonmetallic.
  - 1. Nominal 4 inches square, 2-1/8 inches deep exclusive of plaster ring, pressed steel.
  - 2. Boxes for Telecommunications outlets shall be a nominal 4-11/16 inches square, 2-1/8 inches deep exclusive of plaster ring.
  - 3. For Telecommunications outlets, include a minimum 3/8 inch deep single or two gang plaster ring unless otherwise specified.
  - 4. Mount outlet boxes flush in finished walls.
  - 5. Surface mounted boxes and boxes exposed to the weather shall be cast steel, type FD, prime painted and enamel finished with neoprene gasketed covers, threaded hubs for conduit connections and stainless steel screws.

## 2.04 CABINETS, JUNCTION BOXES, AND PULL BOXES

- A. Volume greater than 100 cubic inches, UL 50, hot-dip, zinc-coated, if sheet steel.

## 2.05 WIRES AND CABLES

- A. Wires and cables shall meet applicable requirements of NFPA 70 and UL for type of insulation, jacket, and conductor specified or indicated. Wires and cables manufactured more than 12 months prior to date of delivery to site shall not be used.

- B. Conductors:
1. Conductors No. 8 AWG and larger diameter shall be stranded.
  2. Conductors No. 10 AWG and smaller diameter shall be solid.
  3. Conductors for remote control, alarm, and signal circuits, classes 1, 2, and 3, shall be stranded unless specifically indicated otherwise.
  4. Conductor sizes and capacities shown are based on copper, unless indicated otherwise. All conductors shall be copper.
  5. Equipment Manufacturer Requirements: When manufacturer's equipment requires copper conductors at the terminations or requires copper conductors to be provided between components of equipment, provide copper conductors or splices, splice boxes, and other work required to satisfy manufacturer's requirements.
  6. Minimum Conductor Sizes:
    - a. Minimum size for branch circuits shall be No. 12 AWG.
    - b. Class 1 remote-control and signal circuits: No. 14 AWG.
    - c. Class 2 low-energy, remote-control and signal circuits: No. 16 AWG.
    - d. Class 3 low-energy, remote-control, alarm and signal circuits: No. 22 AWG.
- C. Color Coding: Provide for service, feeder, branch, control, and signaling circuit conductors.
1. 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.
  2. Color of ungrounded conductors in different voltage systems shall be as follows:
    - a. 208/120 volt, 3-phase:
      - 1) Phase A - black.
      - 2) Phase B - red.
      - 3) Phase C - blue.
    - b. 480/277 volt, 3-phase:
      - 1) Phase A - brown.
      - 2) Phase B - orange.
      - 3) Phase C - yellow.
    - c. 120/240 Volt, Single Phase: Black and red.
- D. Insulation: Unless specified or indicated otherwise or required by NFPA 70, power and lighting wires shall be 600-volt, Type THWN/THHN conforming to UL 83 or Type XHHW or RHW conforming to UL 44, except that grounding wire may be type TW conforming to UL 83; remote-control and signal circuits shall be Type TW or TF,

conforming to UL 83. Where lighting fixtures require 90-degree Centigrade (C) conductors, provide only conductors with 90-degree C insulation or better.

- E. Bonding Conductors: ASTM B1, solid bare copper wire for sizes No. 8 AWG and smaller diameter; ASTM B8, Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.
- F. Service Entrance Cables: Service Entrance (SE) and Underground Service Entrance (USE) Cables, UL 854.

## 2.06 SPLICES AND TERMINATION COMPONENTS

- A. 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.

## 2.07 DEVICE PLATES

- A. Provide UL listed, one-piece device plates for outlets to suit the devices installed.
  1. For metal outlet boxes, plates on unfinished walls shall be of zinc-coated sheet steel or cast metal having round or beveled edges.
  2. For nonmetallic boxes and fittings, other suitable plates may be provided.
  3. Plates on finished walls shall be nylon or lexan, minimum 0.03 inch wall thickness. Plates shall be same color as receptacle or toggle switch with which they are mounted.
  4. Screws shall be machine-type with countersunk heads in color to match finish of plate.
  5. Sectional type device plates will not be permitted.
  6. Plates installed in wet locations shall be gasketed and UL listed for "wet locations".

## 2.08 SWITCHES

- A. Toggle Switches: NEMA WD 1, UL 20, single pole, 3-way, totally enclosed with bodies of thermoplastic or thermoset plastic and mounting strap with grounding screw.
  1. Handles shall be ivory thermoplastic.
  2. Wiring terminals shall be screw-type, side-wired or of the solderless pressure type having suitable conductor-release arrangement.
  3. Contacts shall be silver-cadmium and contact arm shall be one-piece copper alloy.
  4. Switches shall be rated quiet-type ac only, 120/277 volts, with current rating and number of poles indicated.
- B. Breakers Used as Switches For 120- and 277-Volt fluorescent fixtures, mark breakers "SWD" in accordance with UL 489.
- C. Disconnect (Safety) Switches: NEMA KS 1. Provide heavy duty-type switches where indicated, where switches are rated higher than 240 volts, and for double-throw switches.

Fused switches shall utilize Class R fuseholders and fuses, unless indicated otherwise. Provide fuses as indicated. Switches serving as motor-disconnect means shall be horsepower rated. Provide switches in NEMA 1 enclosure when located indoors, and NEMA 4X stainless steel enclosure when located outdoors, per NEMA ICS 6.

## 2.09 RECEPTACLES

- A. General: UL 498, hard use, heavy-duty, grounding-type.
  - 1. Ratings and configurations shall be as indicated.
  - 2. Bodies shall be of ivory as per NEMA WD 1.
  - 3. Face and body shall be thermoplastic supported on a metal mounting strap.
  - 4. Dimensional requirements shall be per NEMA WD 6.
  - 5. Provide screw-type, side-wired wiring terminals or of the solderless pressure type having suitable conductor-release arrangement.
  - 6. Connect grounding pole to mounting strap.
  - 7. The receptacle shall contain triple-wipe power contacts and double or triple-wipe ground contacts.
- B. Weatherproof Receptacles: Provide weather-resistant type, in cast metal box with gasketed, hinged, lockable and weatherproof while-in-use, polycarbonate, UV resistant/stabilized cover plate.
- C. Ground-Fault Circuit Interrupter Receptacles: UL 943, duplex type for mounting in standard outlet box. Device shall be capable of detecting current leak of 6 milliamperes or greater and tripping per requirements of UL 943 for Class A GFCI devices. Provide screw-type, side-wired wiring terminals or pre-wired (pigtail) leads.

## 2.10 PANELBOARDS

- A. Provide panelboards in accordance with the following:
  - 1. UL 67 and UL 50 having a short-circuit current rating as indicated.
  - 2. Panelboards for use as service disconnecting means: additionally conform to UL 869A.
  - 3. Panelboards: circuit breaker-equipped.
  - 4. Designed such that individual breakers can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as means of obtaining clearances as required by UL.
  - 5. "Specific breaker placement" is required in panelboards to match the breaker placement indicated in the panelboard schedule on the drawings.
  - 6. Where "space only" or "PFB" is indicated, make provisions for future installation of breakers.
  - 7. Directories: indicate load served by each circuit in panelboard.



8. Directories: indicate source of service to panelboard (e.g., Panel PA served from Panel MDP).
  9. Type directories and mount in holder behind transparent protective covering.
  10. Panelboards: listed and labeled for their intended use.
  11. Panelboard nameplates: provided in accordance with paragraph FIELD FABRICATED NAMEPLATES hereinbelow.
- B. Enclosure: Provide panelboard enclosure in accordance with the following:
1. UL 50.
  2. Cabinets mounted outdoors or flush-mounted: hot-dipped galvanized after fabrication.
  3. Cabinets: painted in accordance with paragraph PAINTING.
  4. Outdoor cabinets: NEMA 4X Stainless Steel 316 construction where indicated.
  5. Front edges of cabinets: form-flanged or fitted with structural shapes welded or riveted to the sheet steel, for supporting the panelboard front.
  6. All cabinets: fabricated such that no part of any surface on the finished cabinet deviates from a true plane by more than 1/8 inch.
  7. Holes: provided in the back of indoor surface-mounted cabinets, with outside spacers and inside stiffeners, for mounting the cabinets with a 1/2 inch clear space between the back of the cabinet and the wall surface.
  8. Flush doors: mounted on hinges that expose only the hinge roll to view when the door is closed.
  9. Each door: fitted with a combined catch and lock, except that doors over 24 inches long provided with a three-point latch having a knob with a T-handle, and a cylinder lock.
  10. Keys: two provided with each lock, with all locks keyed alike.
  11. Finished-head cap screws: provided for mounting the panelboard fronts on the cabinets.
- C. Panelboard Buses: Provide copper buses. Support bus bars on bases independent of circuit breakers. Main buses and back pans shall be designed so that breakers may be changed without machining, drilling, or tapping. Provide isolated neutral bus in each panel for connection of circuit neutral conductors. Provide separate ground bus identified as equipment grounding bus per UL 67 for connecting grounding conductors; bond to steel cabinet.
- D. Circuit Breakers: UL 489, thermal magnetic-type having a minimum short-circuit current rating equal to the short-circuit current rating of the panelboard in which the circuit

breaker shall be mounted. Breaker terminals shall be UL listed as suitable for type of conductor provided. Series rated circuit breakers and plug-in circuit breakers are unacceptable.

1. Multipole Breakers: Provide common trip-type with single operating handle. Breaker design shall be such that overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any 3 adjacent breaker poles are connected to Phases A, B, and C, respectively.
2. Circuit Breaker with GFCI: UL 943 and NFPA 70. Provide with “push-to-test” button, visible indication of tripped condition, and ability to detect and trip on current imbalance of 6 milliamperes or greater per requirements of UL 943 for Class A GFCI devices, for personnel protection, and 20 milliamperes or greater per requirements of UL 943 for Class B GFP per equipment protection.
3. Circuit Breakers for HVAC Equipment: Circuit breakers for HVAC equipment having motors (group or individual) shall be marked for use with HACR type and UL listed as HACR type.

#### 2.11 ENCLOSED CIRCUIT BREAKERS

- A. UL 489. Individual molded case circuit breakers with voltage and continuous current ratings, number of poles, overload trip setting, and short circuit current interrupting rating as indicated. Enclosure type as indicated. Provide solid neutral.

#### 2.12 MANUAL MOTOR STARTERS (MOTOR RATED SWITCHES)

- A. Single pole designed for surface mounting with overload protection.

#### 2.13 METERING EQUIPMENT

- A. Provide Utility Company metering equipment such as meter sockets, meter/main breaker units, CT cabinets, splice cans and all required accessories as indicated in the contract drawings and in accordance with the applicable Utility Company requirements.

#### 2.14 LOCKOUT REQUIREMENTS

- A. Provide disconnecting means capable of being locked out for machines and other equipment to prevent unexpected startup or release of stored energy in accordance with 29 CFR 1910.147. Mechanical isolation of machines and other equipment shall be in accordance with requirements of DIVISION 15 - MECHANICAL.

#### 2.15 TELECOMMUNICATIONS RACEWAY DISTRIBUTION SYSTEM

- A. Backboards: Interior grade termite-treated plywood, 3/4-inch thick, 4 feet by 8 feet minimum. Paint with 2 coats of flame retardant white paint.

#### 2.16 WIREWAYS

- A. UL 870. Material shall be steel galvanized 16 gauge for heights and depths up to 6 inches by 6 inches, and 14 gauge for heights and depths up to 12 inches by 12 inches. Provide in length required for the application with screw- cover NEMA 1 enclosure when located indoors, and NEMA 4X stainless steel enclosure when located outdoors, per NEMA ICS 6.

#### 2.17 SURGE PROTECTIVE DEVICES

- A. Provide parallel type surge protective devices which comply with UL 1449 at the service entrance. Provide surge protectors in a NEMA 1 enclosure per NEMA ICS 6. Connect

on the load side of a dedicated circuit breaker. Provide the following modes of protection:

1. For Single Phase and Three Phase Wye Connected Systems:
  - a. Phase to phase (L-L).
  - b. Each phase to neutral (L-N).
  - c. Neutral to ground (N-G).
  - d. Phase to ground (L-G).
- B. Surge protective devices at the service entrance shall have a minimum surge current rating of 80,000 amperes for L-L mode and 40,000 amperes for other modes (L-N, L-G and N-G).
  1. Provide SPD's with maximum L-N, L-G and N-G Voltage Protection Rating:
    - a. 700V for 208Y/120V, 3 phase system
  2. Maximum L-L Voltage Protection Rating:
    - a. 1,200V for 208Y/120V, 3 phase system
  3. The minimum MCOV (Maximum Continuous Operating Voltage) rating for L-N and L-G modes of operation:
    - a. 120% of nominal voltage for 240 volts and below.
- C. Provide EMI/RFI filtering per UL 1283 for each mode with the capability to attenuate high frequency noise. Minimum attenuation shall be 20db.

## 2.18 GROUNDING AND BONDING EQUIPMENT

- A. Ground Rods: UL 467. Ground rods shall be copper-clad steel, with minimum diameter of 3/4 inch and minimum length of 10 feet.
- B. Ground Bus: A copper ground bus shall be provided in the electrical equipment rooms as indicated.
- C. Telecommunications Grounding Busbar: Provide corrosion-resistant grounding busbar suitable for indoor installation in accordance with TIA-607. Busbars shall be plated for reduced contact resistance. If not plated, the busbar shall be cleaned prior to fastening the conductors to the busbar, and an anti-oxidant shall be applied to the contact area to control corrosion and reduce contact resistance. Provide a telecommunications main grounding busbar (TMGB) in the telecommunications entrance facility. The telecommunications main grounding busbar (TMGB) shall be sized in accordance with the immediate application requirements and with consideration of future growth. Provide telecommunications grounding busbars with the following:
  1. Predrilled copper busbar provided with holes for use with standard sized lugs.
  2. Minimum dimensions of 0.25 inch thick by 4 inches wide for the TMGB with length as indicated.
  3. Listed by a nationally recognized testing laboratory.

## 2.19 MANUFACTURER'S NAMEPLATE

- A. Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

#### 2.20 FIELD FABRICATED NAMEPLATES

- A. Provide field fabricated nameplates in accordance with the following:
  1. ASTM D709.
  2. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified or as indicated on the drawings.
  3. Each nameplate inscription shall identify the function and, when applicable, the position.
  4. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core.
  5. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core.
  6. Minimum size of nameplates shall be one inch by 2.5 inches.
  7. Lettering shall be a minimum of 0.25 inch high normal block style.

#### 2.21 WARNING SIGNS

- A. Provide warning signs for flash protection in accordance with NFPA 70E and NEMA Z535.4 for switchboards, panelboards, industrial control panels, and motor control centers that are in other than dwelling occupancies and are likely to require examination, adjustment, servicing, or maintenance while energized. Provide field installed signs to warn qualified persons of potential electric arc flash hazards when warning signs are not provided by the manufacturer. The marking shall be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

#### 2.22 FIRESTOPPING MATERIALS

- A. Provide firestopping around electrical penetrations. Utilize UL-listed firestopping systems or assemblies suitable for the penetration being sealed.

#### 2.23 FACTORY APPLIED FINISH

- A. Provide factory-applied finish on electrical equipment in accordance with the following:
  1. NEMA 250 corrosion-resistance test and the additional requirements as specified herein.
  2. Interior and exterior steel surfaces of equipment enclosures shall be thoroughly cleaned and then receive a rust-inhibitive phosphatizing or equivalent treatment prior to painting.
  3. Exterior surfaces shall be free from holes, seams, dents, weld marks, loose scale or other imperfections.
  4. Interior surfaces shall receive not less than one coat of corrosion-resisting paint in accordance with the manufacturer's standard practice.

5. Exterior surfaces shall be primed, filled where necessary, and given not less than 2 coats baked enamel with semi-gloss finish.
6. Equipment located indoors shall be ANSI Light Gray, and equipment located outdoors shall be ANSI Light Gray.
7. Provide manufacturer's coatings for touch-up work and as specified in item entitled "FIELD APPLIED PAINTING" hereinbelow.

#### 2.24 HARDWARE, SUPPORTS, BACKING, ETC.

- A. Provide all hardware, supports, backing and other accessories necessary to install electrical equipment. Wood materials shall be treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze. Provide other specialty materials where indicated.
- B. Bolts, nuts, washers, and screws used for exterior use shall be high quality stainless steel or brass.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Electrical installations, including weatherproof and hazardous locations and ducts, plenums and other air-handling spaces, shall conform to requirements of NFPA 70 and IEEE C2 and to requirements specified herein.
- B. Underground Service: Underground service conductors and associated conduit shall be continuous from service entrance equipment to outdoor power system connection.
- C. Service Entrance Identification: Service entrance disconnect devices, switches, and enclosures shall be labeled and identified as such.
  1. Labels: Wherever work results in service entrance disconnect devices in more than one enclosure, as permitted by NFPA 70, each enclosure, new and existing, shall be labeled as one of several enclosures containing service entrance disconnect devices. Label, at minimum, shall indicate number of service disconnect devices housed by enclosure and shall indicate total number of enclosures that contain service disconnect devices. Provide laminated plastic labels conforming to item entitled FIELD FABRICATED NAMEPLATES. Use lettering of at least 0.25 inch in height, and engrave on black-on-white matte finish. Service entrance disconnect devices in more than one enclosure, shall be provided only as permitted by NFPA 70.
- D. Wiring Methods: Provide insulated conductors installed in rigid steel conduit, IMC, rigid nonmetallic conduit, or 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. Shared neutral, or multi-wire branch circuits, are not permitted with arc-fault circuit interrupters. Minimum conduit size shall be 1/2 inch in diameter for low voltage lighting and power circuits. Conduit which penetrates fire-rated walls, fire-rated partitions, or fire-rated floors shall be firestopped.

1. Pull Wire: Install pull wires in empty conduits. Pull wire shall be plastic having minimum 200-pound force tensile strength. Leave minimum 36 inches of slack at each end of pull wire.
  
- E. Conduit Installation: Unless indicated otherwise, conceal conduit under floor slabs and 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.
  1. Restrictions Applicable to EMT:
    - a. Do not install underground.
    - b. Do not encase in concrete, mortar, grout, or other cementitious materials.
    - c. Do not use in areas subject to severe physical damage including but not limited to equipment rooms where moving or replacing equipment could physically damage the EMT.
    - d. Do not use in hazardous areas.
    - e. Do not use outdoors, including under open-sided covered lanais, patios, walkways or other similar locations.
    - f. Do not use in fire pump rooms.
    - g. Do not use exposed below +8 feet above the finished floor, except in dedicated Electrical Rooms.
  2. Restrictions Applicable to Nonmetallic Conduit:
    - a. PVC Schedule 40:
      - 1) Do not use in areas where subject to severe physical damage, including but not limited to, mechanical equipment rooms, electrical equipment rooms, and other such areas.
      - 2) Do not use in hazardous (classified) areas.
      - 3) Do not use in fire pump rooms.
      - 4) Do not use in penetrating fire-rated walls or partitions, or fire-rated floors.
      - 5) Do not use above grade, except where conduit is concealed and located within walls up to the first outlet box or conduit coupling above the finished floor unless indicated otherwise.
  3. Restrictions Applicable to Flexible Conduit: Use only as specified in subparagraph entitled "Flexible Connections" hereinbelow.
  4. Service Entrance Conduit, Underground: Schedule 40 PVC, galvanized rigid steel or steel IMC. Underground portion shall be encased in minimum of 3 inches of concrete and shall be installed minimum 18 inches below slab or grade.

5. **Underground Conduit Other Than Service Entrance:** Plastic-coated rigid steel; plastic-coated steel IMC; Schedule 40 PVC. Convert nonmetallic conduit to plastic-coated rigid, or IMC, steel conduit before rising through floor slab except where the nonmetallic conduit is concealed and located within walls up to the first outlet box or conduit coupling above the finished floor. Plastic coating on metallic conduits shall extend minimum 6 inches above floor.
6. **Conduit for Circuits Rated Greater Than 600 Volts:** Rigid metal conduit or IMC only.
7. **Conduit Installed Under Floor Slabs:** Conduit run under floor slab shall be located a minimum of 12 inches below the vapor barrier. Seal around conduits at penetrations thru vapor barrier.
8. **Conduit through Floor Slabs:** Where conduits rise through floor slabs, curved portion of bends shall not be visible above finished slab.
9. **Stub-Ups:** Provide conduits stubbed up through concrete floor for connection to free-standing equipment with adjustable top or coupling threaded inside for plugs, set flush with finished floor. Extend conductors to equipment in rigid steel conduit, except that flexible metal conduit may be used 6 inches above floor. Where no equipment connections are made, install screwdriver-operated threaded flush plugs in conduit end.
10. **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. Plastic tie-wraps are not allowed for securing or supporting of electrical conduit. Load applied to fasteners shall not exceed 1/4 proof test load. Fasteners attached to concrete ceiling shall be vibration resistant and shock-resistant. Holes cut to depth of more than 1-1/2 inches in reinforced concrete beams or to depth of more than 3/4 inch in concrete joints shall not cut main reinforcing bars. Fill unused holes. In partitions of light steel construction, use sheet metal screws. 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. Where conduit crosses building expansion joints, provide suitable expansion fitting that maintains conduit electrical continuity by bonding jumpers or other means. For conduits greater than 2-1/2 inches inside diameter, provide supports to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction.
11. **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.

12. 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. Provide threaded, weatherproof hubs for raceway connections to the top and sides of boxes and enclosures exposed to the weather. Utilize 2 weather-tight, sealing locknuts for penetrations to the bottom of such boxes.
  13. Flexible Connections: Provide flexible steel conduit between 3 feet and 6 feet in length for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for motors. Install flexible conduit to allow 20 percent slack. Minimum flexible steel conduit size shall be 1/2 inch diameter. Provide liquid-tight flexible conduit in wet and damp locations for equipment subject to vibration, noise transmission, movement or motors. Provide separate ground conductor across flexible connections.
- F. Boxes, Outlets, and Supports: Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be cast-metal, hub-type when located in wet locations, when surface mounted on outside of exterior surfaces, when surface mounted on interior walls exposed up to 8 feet above floors and walkways, or when installed in hazardous areas and when specifically indicated. Boxes in other locations shall be sheet steel, except that nonmetallic boxes may be used with nonmetallic conduit system. Each box shall have volume required by NFPA 70 for number of conductors enclosed in box. Boxes for mounting lighting fixtures shall be minimum 4 inches square, or octagonal, except that smaller boxes may be installed as required by fixture configurations, as approved. Boxes for use in masonry-block or tile walls shall be square-cornered, tile-type, or standard boxes having square-cornered, tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with outside of exterior surfaces. 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. Support boxes and pendants for surface-mounted fixtures on suspended ceilings independently of ceiling supports. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel. Threaded studs driven in by powder charge and provided with lockwashers and nuts may be used in lieu of wood screws, expansion shields, or machine screws. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from building structure or by bar hangers. Where bar hangers are used, attach bar to raceways on opposite sides of box, and support raceway with approved-type fastener maximum 24 inches from box. When penetrating reinforced concrete members, avoid cutting reinforcing steel.
1. Pull Boxes: Construct of at least minimum size required by NFPA 70 of code-gauge galvanized sheet steel or stainless steel when located outdoors, or where indicated, and compatible with nonmetallic raceway systems, except where cast-metal boxes are required in locations specified herein. Provide boxes with screw-fastened covers.



Where several feeders pass through common pull box, tag feeders to indicate clearly electrical characteristics, circuit number, and panel designation.

2. Extension Rings: Extension rings are not permitted for new construction. Use only on existing boxes in concealed conduit systems where wall is furred out for new finish.
- G. Mounting Heights: Mount panelboards, enclosed circuit breakers, motor controller and disconnecting switches so height of any operating handle at its highest position is a maximum 78 inches above finished floor. Mount lighting switches so height of the operating handle at its highest position is a maximum of 48 inches above finished floor. Mount receptacles and telecommunications outlets 18 inches above finished floor, unless otherwise indicated. Wall-mounted telecommunications device outlets shall be mounted at height 60 inches above finished floor. Mount other devices as indicated. Measure mounting heights of wiring devices and outlets to center of device or outlet, unless otherwise indicated.
- H. 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.
1. Marking Strips: Provide marking strips in accordance with the following:
    - a. White or other light-colored plastic marking strips, fastened by screws to each terminal block, shall be provided for wire designations.
    - b. The wire numbers shall be made with permanent ink.
    - c. The marking strips shall be reversible to permit marking both sides, or 2 marking strips shall be furnished with each block.
    - d. Marking strips shall accommodate the 2 sets of wire numbers.
    - e. Each device to which a connection is made shall be assigned a device designation in accordance with NEMA ICS 1 and each device terminal to which a connection is made shall be marked with a distinct terminal marking corresponding to the wire designation used on the Contractor's schematic and connection diagrams.
    - f. The wire (terminal point) designations used on the Contractor's wiring diagrams and printed on terminal block marking strips may be according to the Contractor's standard practice; however, additional wire and cable designations for identification of remote (external) circuits shall be provided for the Government's wire designations.
    - g. Prints of the marking strips drawings submitted for approval will be so marked and returned to the Contractor for addition of the designations to the terminal strips and tracings, along with any rearrangement of points required.
- I. Splices: Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller diameter with insulated, pressure-type connector. Make splices in

conductors No. 8 AWG and larger diameter with solderless connector, and cover with insulation material equivalent to conductor insulation.

- J. Covers and Device Plates: Install with edges in continuous contact with finished wall surfaces without use of mats or similar devices. Plaster fillings are not permitted. Install plates with alignment tolerance of 1/16 inch. Use of sectional-type device plates are not permitted. Provide gasket for plates installed in wet locations.
- K. Electrical Penetrations: Openings around electrical penetrations (such as conduit penetrations or flush mounted equipment enclosures or junctions boxes) through fire resistance-rated walls, partitions, floors, or ceilings shall be sealed to maintain fire resistive integrity. Use 3M CP25, Type MPP moldable putty or equivalent material or assemblies to maintain fire resistive integrity for conduit penetration and flush mounted outlet boxes. Use other approved construction methods for larger enclosures.
- L. Grounding and Bonding: Provide in accordance with NFPA 70. Ground exposed, non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and nonmetallic raceways, telecommunications system grounds, and neutral conductor of wiring systems. Make ground connection at main service equipment, and extend grounding conductor to point of entrance of metallic water service. Make connection to water pipe by suitable ground clamp or lug connection to plugged tee. If flanged pipes are encountered, make connection with lug bolted to street side of flanged connection. Supplement metallic water service grounding system with additional made electrode in compliance with NFPA 70. Make ground connection to driven ground rods on exterior of building. Interconnect all grounding media in or on the structure to provide a common ground potential. This shall include lightning protection, electrical service, telecommunications system grounds, as well as underground metallic piping systems. Interconnection to the gas line shall be made on the customer's side of the meter. Use main size lightning conductors for interconnecting these grounding systems to the lightning protection system. In addition to the requirements specified herein, provide telecommunications grounding in accordance with TIA-607. Where ground fault protection is employed, ensure that connection of ground and neutral does not interfere with correct operation of fault protection.
  - 1. Ground Rods: Provide cone pointed ground rods. The resistance to ground shall be measured using the fall-of-potential method described in IEEE 81. The maximum resistance of a driven ground shall not exceed 25 ohms under normally dry conditions. If this resistance cannot be obtained with a single rod, one additional rods shall be provided in accordance with the requirements of NFPA 70 (not less than 6 feet on centers). If the resultant resistance exceeds 25 ohms measured not less than 48 hours after rainfall, notify the Contracting Officer who will decide on the number of ground rods to add.
  - 2. Grounding Connections: Make grounding connections which are buried or otherwise normally inaccessible, excepting specifically those connections for which access for periodic testing is required, by exothermic weld or compression connector.
    - a. Make exothermic welds strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning are not acceptable. Mechanical connectors are not required at exothermic welds.
    - b. Make compression connections using a hydraulic compression tool to provide the correct circumferential pressure. Tools and dies shall be as recommended by the

manufacturer. An embossing die code or other standard method shall provide visible indication that a connector has been adequately compressed on the ground wire.

3. Ground Bus: A copper ground bus shall be provided in the electrical equipment rooms as indicated. Noncurrent-carrying metal parts of electrical equipment and transformer neutrals shall be effectively grounded by bonding to the ground bus. The ground bus shall be bonded to both the entrance ground, and to a ground rod or rods as specified above having the upper ends terminating approximately 4 inches above the floor. Connections and splices shall be of the brazed, welded, bolted, or pressure-connector type, except that pressure connectors or bolted connections shall be used for connections to removable equipment.
4. Resistance: Maximum resistance-to-ground of grounding system shall not exceed 25 ohms under dry conditions. Where resistance obtained exceeds 25 ohms, contact Contracting Officer for further instructions.
5. Telecommunications System: Provide telecommunications grounding in accordance with the following:
  - a. Telecommunications Grounding Busbars: Provide a telecommunications main grounding busbar (TMGB) in the telecommunications entrance facility. The TMGB shall be as close to the electrical service entrance grounding connection as practicable. Grounding busbar (TGB) in all other telecommunications rooms and telecommunications equipment rooms. The TGB shall be as close to the telecommunications room panelboard as practicable, when equipped. Where a panelboard for telecommunications equipment is not installed in the telecommunications room, the TGB shall be located near the backbone cabling and associated terminations. In addition, the TGB shall be placed to provide for the shortest and straightest routing of the grounding conductors. Where a panelboard for telecommunications equipment is located within the same room or space as a TGB, that panelboard's alternating current equipment ground (ACEG) bus. Telecommunications grounding busbars shall be installed to maintain clearances as required by NFPA 70 and shall be insulated from its support. A minimum of 2 inches separation from the wall is recommended to allow access to the rear of the busbar and the mounting height shall be adjusted to accommodate overhead or underfloor cable routing.
  - b. Telecommunications Bonding Conductors: Provide main telecommunications service equipment ground consisting of separate bonding conductor for telecommunications, between the TMGB and readily accessible grounding connection of the electrical service. Grounding and bonding conductors should not be placed in ferrous metallic conduit. If it is necessary to place grounding and bonding conductors in ferrous metallic conduit that exceeds 3 feet in length, the conductors shall be bonded to each end of the conduit using a grounding bushing or a No. 6 AWG conductor, minimum.
  - c. Telecommunications Grounding Connections: Telecommunications grounding connections to the TMGB shall utilize listed compression 2-hole lugs, exothermic welding, suitable and equivalent one hole non-twisting lugs, or other irreversible compression type connections. All metallic pathways, cabinets, and racks for telecommunications cabling and interconnecting hardware located within the same room or space as the TMGB shall be bonded to the TMGB. In a

metal frame (structural steel) building, where the steel framework is readily accessible within the room; each TMGB shall be bonded to the vertical steel metal frame using a minimum No. 6 AWG conductor. Where the metal frame is external to the room and readily accessible, the metal frame shall be bonded to the TMGB with a minimum No. 6 AWG conductor. All connectors used for bonding to the metal frame of a building shall be listed for the intended purpose.

- M. Equipment Connections: Provide power wiring for the connection of motors and control equipment under this section of the specification. Except as otherwise specifically noted or specified, automatic control wiring, control devices, and protective devices within the control circuitry are not included in this section of the specifications but shall be provided under the section specifying the associated equipment.
- N. Seismic Bracing: Contractor shall provide seismic bracing for all electrical equipment, apparatus, and raceways. Bracing shall, as a minimum, comply with the County Building Code.
- O. Repair of Existing Work: Repair of existing work, demolition, and modification of existing electrical distribution systems shall be performed as follows:
  - 1. Workmanship: Lay out work in advance. Exercise care where cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary for proper installation, support, or anchorage of conduit, raceways, or other electrical work. Repair damage to buildings, piping, and equipment using skilled craftsmen of trades involved.
  - 2. Existing Concealed Wiring to be Removed: Existing concealed wiring to be removed shall be disconnected from its source. Remove conductors; cut conduit flush with floor, underside of floor, and through walls; and seal openings.
  - 3. Removal of Existing Electrical Distribution System: Removal of existing electrical distribution system equipment shall include equipment's associated wiring, including conductors, cables, exposed conduit, surface metal raceways, boxes, and fittings, back to equipment's power source as indicated.
  - 4. Continuation of Service: Maintain continuity of existing circuits of equipment to remain. Existing circuits of equipment shall remain energized. Circuits which are to remain but were disturbed during demolition shall have circuits wiring and power restored back to original condition.
- P. Surge Protective Devices: Connect the surge protective devices in parallel to the power source, keeping the conductors as short and straight as practically possible.

### 3.02 FIELD FABRICATED NAMEPLATE MOUNTING

- A. Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of 2 sheet-metal screws or 2 rivets.

### 3.03 WARNING SIGN MOUNTING

- A. Provide the number of signs required to be readable from each accessible side. Space the signs in accordance with NFPA 70E.

### 3.04 FIELD APPLIED PAINTING

- A. Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Where field painting of enclosures for panelboards, load centers or the like is specified to match adjacent surfaces, to correct damage to the manufacturer's factory applied coatings, or to meet the indicated or specified safety criteria, provide manufacturer's recommended coatings and apply in accordance to manufacturer's instructions. Painting shall be as specified in SECTION 09901 - PAINTING.

### 3.05 FIELD QUALITY CONTROL

- A. Furnish test equipment and personnel and submit written copies of test results. Give Contracting Officer 5 working days' notice prior to tests.
  - 1. Devices Subject to Manual Operation: Each device subject to manual operation shall be operated at least 5 times, demonstrating satisfactory operation each time.
  - 2. 600-Volt Wiring Test: Test wiring rated 600 volt and less to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on wiring No. 6 AWG and larger diameter using instrument which applies voltage of approximately 500 volts to provide direct reading of resistance. Minimum resistance shall be 250,000 ohms. Submit results to the Contracting Officer.
  - 3. Ground-Fault Receptacle Test: Test ground-fault receptacles with a "load" (such as a plug in light) to verify that the "line" and "load" leads are not reversed.
  - 4. Ground-Fault (GFCI) and Arc-Fault Circuit Interrupter (AFCI) Circuit Breaker Test: To test a GFCI or AFCI circuit breaker, make sure the breaker handle is in the "ON" position. Depress the "TEST" button. This will cause the handle to move to an intermediate "tripped" position indicating that the GFCI or AFCI is functioning properly. Reset the circuit breaker by pushing the handle to the "OFF" position first, then "ON."
  - 5. Grounding System Test: Test grounding system to ensure continuity and that resistance to ground is not excessive. Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall. Submit written results of each test to Contracting Officer, and indicate location of rods as well as resistance and soil conditions at time measurements were made.

END OF SECTION

## SECTION 16301 - UNDERGROUND ELECTRICAL WORK

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This section includes, but is not limited to, the underground electrical infrastructure system. The underground infrastructure system includes the provision for electrical and telecommunications underground maintenance structures, ductlines, and conductors.

#### 1.02 REFERENCES

- A. The publications listed herein form a part of this specification to the extent referenced. The publications may be referred to in the text by the basic designation only. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.

#### 1.03 RELATED WORK

- A. SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS applies to this section with additions and modifications specified herein.

#### 1.04 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Submit shop drawings and catalog cuts of the following equipment for approval. Each submittal shall be prepared with a summary sheet attached to each copy identifying all items included in the submittal. Incomplete submittals and those without summary sheets will be returned without review.
- C. Manufacturer's Catalog Data:
  - 1. Precast concrete structures.
  - 2. Sealing material.
  - 3. Pulling-in irons.
  - 4. Electric manhole frames and covers.
  - 5. Telecommunications maintenance hole frames and covers.
  - 6. Handhole frames and covers.
  - 7. Cable supports (racks, arms and insulators)
- D. Shop Drawings:
  - 1. Precast concrete structures.
  - 2. Pulling-in irons.
  - 3. Electric manhole frames and covers.
  - 4. Telecommunications maintenance hole frames and covers.

5. Handhole frames and covers.
  6. Cable supports (racks, arms and insulators)
- E. Reports: Test reports as required in the item entitled "FIELD QUALITY CONTROL" hereinbelow.

#### 1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" or "must" 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 Contracting Officer. Provide equipment, materials, installation, and workmanship 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 this section.
- C. Alternative Qualifications: Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6,000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
- D. Material and Equipment Manufacturing Date: Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment shall conform to the respective specifications and standards and to the specifications herein. Electrical ratings shall be as indicated.

#### 2.02 CONDUIT, DUCTS, AND FITTINGS

- A. Rigid Metal Conduit: UL 6.
- B. Rigid Metallic Conduit, PVC Coated: NEMA RN 1, Type A40.
- C. Intermediate Metal Conduit: UL 1242.
- D. Intermediate Metal Conduit, PVC Coated: NEMA RN 1, Type A40.
- E. Plastic Conduit for Direct Burial: UL 651, Schedule 40 or Schedule 80 or as otherwise indicated.

- F. Plastic Conduit for Concrete Encasement: UL 651, Schedule 40 or Schedule 80 or as otherwise indicated.
- G. Duct Sealant
  - 1. Conduit Sealing Compound: Compounds for sealing ducts and conduit shall have a putty-like consistency workable with the hands at temperatures as low as 35 degrees F, shall neither slump at a temperature of 300 degrees F, nor harden materially when exposed to the air. Compounds shall adhere to clean surfaces of fiber or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compounds shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands of workmen or upon materials.
  - 2. UL 94, Class HBF: Provide high-expansion urethane foam duct sealant that expands and hardens to form a closed, chemically and water resistant, rigid structure. Sealant must be compatible with common cable and wire jackets and capable of adhering to metals, plastics and concrete. Sealant must be capable of curing in temperature ranges of 35 degrees F to 95 degrees F. Cured sealant must withstand temperature ranges of -20 degrees F to 200 degrees F without loss of function.
- H. Fittings:
  - 1. Metal Fittings: UL 514B.
  - 2. PVC Conduit Fittings: UL 514B, UL 651.
  - 3. Outlet Boxes for Steel Conduit: Outlet boxes for use with rigid steel conduit shall be cast-metal cadmium or zinc-coated if of ferrous metal with gasketed closures and shall conform to UL 514A.

### 2.03 LOW VOLTAGE INSULATED CONDUCTORS AND CABLES

- A. Insulated conductors shall be rated 600 volts and conform to the requirements of NFPA 70, including listing requirements. Wires and cables manufactured more than 24 months prior to date of delivery to the site shall not be accepted. Service entrance conductors shall conform to UL 854, Type USE.
- B. Conductor Types: Cable and duct sizes indicated are for copper conductors and THHN/THWN unless otherwise noted. Conductors No. 10 AWG and smaller shall be solid copper. Conductors No. 8 AWG and larger shall be stranded copper. All conductors shall be copper.
- C. Conductor Material: Unless specified or indicated otherwise or required by NFPA 70, wires in conduit, other than service entrance, shall be 600-volt, Type THWN/THHN conforming to UL 83 or Type XHHW or RHW conforming to UL 44. Copper conductors shall be annealed copper complying with ASTM B3 and ASTM B8.
- D. Jackets: Multiconductor cables shall have an overall PVC outer jacket.
- E. Cable Marking:



1. Insulated conductors shall have the date of manufacture and other identification imprinted on the outer surface of each cable at regular intervals throughout the cable length.
2. Each cable shall be identified by means of a fiber, laminated plastic, or non-ferrous metal tags, or approved equal, in each electric manhole, telecommunications maintenance hole, handhole, junction box, and each terminal. Each tag shall contain the following information; cable type, conductor size, circuit number, circuit voltage, cable destination and phase identification.
3. Conductors shall be color coded. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made. Conductor identification shall be by color-coded insulated conductors, plastic-coated self-sticking printed markers, colored nylon cable ties and plates, heat shrink type sleeves, or colored electrical tape. Control circuit terminations shall be properly identified. 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:
  - a. 208/120 volt, 3-phase:
    - 1) Phase A - black.
    - 2) Phase B - red.
    - 3) Phase C - blue.
  - b. 480/277 volt, 3-phase:
    - 1) Phase A - brown.
    - 2) Phase B - orange.
    - 3) Phase C - yellow.
  - c. 120/240 Volt, Single Phase: Black and red.

#### 2.04 LOW VOLTAGE WIRE CONNECTORS AND TERMINALS

- A. UL 486A-486B. Shall provide a uniform compression over the entire conductor contact surface. Use solderless terminal lugs on stranded conductors.

#### 2.05 LOW VOLTAGE SPLICES

- A. Provide splices in conductors with a compression connector on the conductor and by insulating and waterproofing using one of the following methods which are suitable for continuous submersion in water and comply with ANSI C119.1.
- B. Heat Shrinkable Splice: Provide heat shrinkable splice insulation by means of a thermoplastic adhesive sealant material which shall be applied in accordance with the manufacturer's written instructions.
- C. Cold Shrink Rubber Splice: Provide a cold-shrink rubber splice which consists of EPDM rubber tube which has been factory stretched onto a spiraled core which is removed during splice installation. The installation shall not require heat or flame, or any

additional materials such as covering or adhesive. It shall be designed for use with inline compression type connectors, or indoor, outdoor, direct-burial or submerged locations.

#### 2.06 TAPE

- A. Insulating Tape: UL 510, plastic insulating tape, capable of performing in a continuous temperature environment of 80 degrees C.

#### 2.07 PULL STRING/ROPE

- A. Shall be plastic or flat pull line (bull line) having a minimum tensile strength of 200 pounds. For empty ducts intended for telephone or cable television cabling, provide mule tape in conformance with the utility company standards.

#### 2.08 GROUNDING AND BONDING

- A. Driven Ground Rods: Provide copper-clad steel ground rods conforming to UL 467 not less than 3/4 inch in diameter by 10 feet in length. Sectional type rods may be used for rods 20 feet or longer.
- B. Grounding Conductors: Stranded-bare copper conductors shall conform to ASTM B8, Class B, soft-drawn unless otherwise indicated. Solid-bare copper conductors shall conform to ASTM B1 for sizes No. 8 and smaller. Insulated conductors shall be of the same material as phase conductors and green color-coded, except that conductors shall be rated no more than 600 volts. Aluminum is not acceptable.

#### 2.09 CAST-IN-PLACE CONCRETE

- A. Provide concrete in accordance with SECTION 03300 CAST-IN-PLACE CONCRETE.

#### 2.10 UNDERGROUND STRUCTURES

- A. Provide precast concrete underground structures or standard type cast-in-place maintenance hole types as indicated, conforming to ASTM C857 and ASTM C478. Top, walls, and bottom shall consist of reinforced concrete. Walls and bottom shall be of monolithic concrete construction. Locate duct entrances and windows near the corners of structures to facilitate cable racking. Covers shall fit the frames without undue play. Form steel and iron to shape and size with sharp lines and angles. Castings shall be free from warp and blow holes that may impair strength or appearance. Exposed metal shall have a smooth finish and sharp lines and arises. Provide necessary lugs, rabbets, and brackets. Set pulling-in irons and other built-in items in place before depositing concrete. Install a pulling-in iron in the wall opposite each duct line entrance. Cable racks, including rack arms and insulators, shall be adequate to accommodate the cable.
- B. Cast-In-Place Concrete Structures: Concrete shall conform to SECTION 03300 CAST-IN-PLACE CONCRETE. Construct walls on a footing of cast-in-place concrete except that precast concrete base sections may be used for precast concrete maintenance hole risers.
- C. Precast Concrete Structures, Risers and Tops: In lieu of cast-in-place, precast concrete underground structures may be provided subject to the requirements specified below, unless otherwise required by utility company standards. Precast units shall be the product of a manufacturer regularly engaged in the manufacture of precast concrete products, including precast maintenance holes.
  - 1. General: Precast concrete structures shall have the same accessories and facilities as required for cast-in-place structures. Likewise, precast structures shall have plan area and clear heights not less than those of cast-in-place structures. Concrete materials

and methods of construction shall be the same as for cast-in-place concrete construction, as modified herein. Slope in floor may be omitted provided precast sections are poured in reinforced steel forms. Concrete for precast work shall have a 28-day compressive strength of not less than 4000 psi. Structures may be precast to the design and details indicated for cast-in-place construction, precast monolithically and placed as a unit, or structures may be assembled sections, designed and produced by the manufacturer in accordance with the requirements specified. Structures shall be identified with the manufacturer's name embedded in or otherwise permanently attached to an interior wall face.

2. Construction: Structure top, bottom, and wall shall be of a uniform thickness of not less than 6 inches unless otherwise indicated. Thin-walled knock-out panels for designed or future duct bank entrances shall not be permitted. Quantity, size, and location of duct bank entrance windows shall be as directed, and cast completely open by the precaster. Size of windows shall exceed the nominal duct bank envelope dimensions by at least 12 inches vertically and horizontally to preclude in-field window modifications made necessary by duct bank misalignment. However, the sides of precast windows shall be a minimum of 6 inches from the inside surface of adjacent walls, floors, or ceilings. Form the perimeter of precast window openings to have a keyed or inward flared surface to provide a positive interlock with the mating duct bank envelope. Provide welded wire fabric reinforcing through window openings for in-field cutting and flaring into duct bank envelopes. Provide additional reinforcing steel comprised of at least 2 No. 4 bars around window openings. Provide drain sumps a minimum of 12 inches in diameter and 4 inches deep for precast structures.
  3. Joints: Provide tongue-and-groove joints on mating edges of precast components. Shiplap joints are not allowed. Design joints to firmly interlock adjoining components and to provide waterproof junctions and adequate shear transfer. Seal joints watertight using preformed plastic strip conforming to ASTM C990. Install sealing material in strict accordance with the sealant manufacturer's printed instructions. Provide waterproofing at conduit/duct entrances into structures, and where access frame meets the top slab, provide continuous grout seal.
- D. Electric Manhole and Telecommunications Maintenance Hole Frames and Covers: Provide cast iron frames and covers for manholes and maintenance holes conforming to CID A-A-60005. Cast the words "ELECTRIC" or "TELECOMMUNICATIONS" in the top face of power and telecommunications manhole or maintenance hole covers, respectively.
- E. Handhole Frames and Covers: Frames and covers of steel shall be welded by qualified welders in accordance with standard commercial practice. Steel covers shall be rolled-steel floor plate having an approved anti-slip surface. Hinges shall be of stainless steel with bronze hinge pin, 5 inches by 5 inches by approximately 3/16 inch thick, without screw holes, and shall be for full surface application by fillet welding. Hinges shall have non-removable pins and 5 knuckles. The surfaces of plates under hinges shall be true after the removal of raised anti-slip surface, by grinding or other approved method.
- F. Brick for Manhole/Maintenance Hole Collar: Brick shall be sewer and manhole/maintenance hole brick conforming to ASTM C32, Grade MS.

## 2.11 CABLE SUPPORTS (RACKS, ARMS, AND INSULATORS)

- A. The metal portion of racks and arms shall be zinc-coated after fabrication.
- B. Cable Racks: The wall bracket shall be 4 inches by approximately 1-1/2 inch by 3/16 inch channel steel, 48 inches long (minimum) in manholes/maintenance holes. Slots for mounting cable rack arms shall be spaced at 8 inch intervals.
- C. Rack Arms: Cable rack arms shall be steel or malleable iron or glass reinforced nylon and shall be of the removable type. Rack arm length shall be a minimum of 8 inches and a maximum of 12 inches.
- D. Insulators: Insulators for metal rack arms shall be dry-process glazed porcelain. Insulators are not required for nylon arms.

## 2.12 CABLE TAGS IN MANHOLES, MAINTENANCE HOLES AND HANDHOLES

- A. Provide tags for each cable located in manholes, maintenance holes and handholes. The tags shall be polyethylene. Do not provide handwritten letters. The first position on the power cable tag shall denote the voltage. The second through sixth positions on the tag shall identify the circuit. The next to last position shall denote the phase of the circuit and shall include the Greek “phi” symbol. The last position shall denote the cable size. As an example, a tag could have the following designation: “11.5 NAS 1-8(Phase A)500,” denoting that the tagged cable is on the 11.5kV system circuit number NAS 1-8, underground, Phase A, sized at 500 kcmil.
- B. Polyethylene Cable Tags: Provide tags of polyethylene that have an average tensile strength of 3250 pounds per square inch; and that are 0.08 inch thick (minimum), non-corrosive non-conductive; resistive to acids, alkalis, organic solvents, and salt water; and distortion resistant to 170 degrees F. Provide 0.05 inch (minimum) thick black polyethylene tag holder. Provide a one-piece nylon, self-locking tie at each end of the cable tag. Ties shall have a minimum loop tensile strength of 175 pounds. The cable tags shall have black block letters, numbers, and symbols one inch high on a yellow background. Letters, numbers, and symbols shall not fall off or change positions regardless of the cable tags’ orientation.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Install equipment and devices in accordance with the manufacturer’s published instructions and with the requirements and recommendations of NFPA 70 and IEEE C2 as applicable. In addition to these requirements, install telecommunications in accordance with TIA-758 and RUS Bull 1751F-644.

### 3.02 CABLE INSPECTION

- A. Prior to installation, each cable reel shall be inspected for correct storage positions, signs of physical damage, and broken end seals. If end seal is broken, moisture shall be removed from cable prior to installation in accordance with the cable manufacturer’s recommendations.

### 3.03 UNDERGROUND STRUCTURE CONSTRUCTION

- A. Provide standard type cast-in-place construction as specified herein and as indicated, or precast/prefabricated construction as specified herein. Horizontal concrete surfaces of floors shall have a smooth trowel finish. Cure concrete by applying 2 coats of white

- pigmented membrane forming-curing compound in strict accordance with the manufacturer's printed instructions, except that precast concrete may be steam cured. Curing compound shall conform to ASTM C309. Locate duct entrances and windows in the center of end walls (shorter) and near the corners of sidewalls (longer) to facilitate cable racking and splicing. Covers for underground structures shall fit the frames without undue play. Steel and iron shall be formed to shape and size with sharp lines and angles. Castings shall be free from warp and blow holes that may impair strength or appearance. Exposed metal shall have a smooth finish and sharp lines and arises. Provide necessary lugs, rabbets, and brackets. Set pulling-in irons and other built-in items in place before depositing concrete. Underground structure locations, as indicated, are approximate. Coordinate exact underground structure locations with other utilities and finished grading and paving.
- B. Cast-In-Place Concrete Structures: Construct walls on a footing of cast-in-place concrete except that precast concrete base sections may be used for precast concrete manhole/maintenance hole risers.
- C. Precast/Prefabricated Structure Construction: Set commercial precast/prefabricated structures on 6 inches of level, 90 percent compacted, granular fill, 3/4 inch to one inch size, extending 12 inches beyond the structure on each side. Compact granular fill by a minimum of 4 passes with a plate type vibrator. Installation shall additionally conform to the manufacturer's instructions.
- D. Pulling-In Irons: Provide steel bars bent as indicated, and cast in the walls and floors. Alternatively, pipe sleeves may be precast into the walls and floors where required to accept U-bolts or other types of pulling-in devices possessing the strengths and clearances stated herein. The final installation of pulling-in devices shall be made permanent. Cover and seal exterior projections of thru-wall type pulling-in devices with an appropriate protective coating. In the floor the irons shall be a minimum of 6 inches from the edge of the sump, and in the walls the irons shall be located within 6 inches of the projected center of the duct bank pattern or precast window in the opposite wall. However, the pulling-in iron shall not be located within 6 inches of an adjacent interior surface, or duct or precast window located within the same wall as the iron. If a pulling-in iron cannot be located directly opposite the corresponding duct bank or precast window due to this clearance limitation, locate the iron directly above or below the projected center of the duct bank pattern or precast window the minimum distance required to preserve the 6 inch clearance previously stated. In the case of directly opposing precast windows, pulling-in irons consisting of a 3 foot length of No. 5 reinforcing bar, formed into a hairpin, may be cast-in-place within the precast windows simultaneously with the end of the corresponding duct bank envelope. Irons installed in this manner shall be positioned directly in line with, or when not possible, directly above or below the projected center of the duct bank pattern entering the opposite wall, while maintaining a minimum clear distance of 3 inches from any edge of the cast-in-place duct bank envelope or any individual duct. Pulling-in irons shall have a clear projection into the structure of approximately 4 inches and shall be designed to withstand a minimum pulling-in load of 6000 pounds. Irons shall be hot-dipped galvanized after fabrication.
- E. Cable Racks, Arms and Insulators: Cable racks, arms and insulators shall be sufficient to accommodate the cables. Racks in power manholes shall be spaced not more than 3 feet apart, and each manhole wall shall be provided with a minimum of 2 racks. Racks in telecommunications maintenance holes shall be spaced not more than 16-1/2 inches apart

with the end rack being no further than 12 inches from the adjacent wall. Methods of anchoring cable racks shall be as follows:

1. Provide a 5/8 inch diameter by 5 inch long anchor bolt with 3 inch foot cast in structure wall with 2 inch protrusion of threaded portion of bolt into structure. Provide 5/8 inch steel square head nut on each anchor bolt. Coat threads of anchor bolts with suitable coating immediately prior to installing nuts.
  2. Provide concrete channel insert with a minimum load rating of 800 pounds per foot. Insert channel shall be steel of the same length as "vertical rack channel;" channel insert shall be cast flush in structure wall. Provide 5/8 inch steel nuts in channel insert to receive 5/8 inch diameter by 3 inch long steel, square head anchor bolts.
  3. Provide concrete "spot insert" at each anchor bolt location, cast flush in structure wall. Each insert shall have minimum 800 pound load rating. Provide 5/8 inch diameter by 3 inch long steel, square head anchor bolt at each anchor point. Coat threads of anchor bolts with suitable coating immediately prior to installing bolts.
- F. Field Painting: Cast-iron frames and covers not buried in concrete or masonry shall be cleaned of mortar, rust, grease, dirt and other deleterious materials, and given a coat of bituminous paint.

#### 3.04 UNDERGROUND CONDUIT AND DUCT SYSTEMS

- A. Depths to top of the conduit shall be in accordance with NFPA 70. Run conduit in straight lines except where a change of direction is necessary. Numbers and sizes of ducts shall be as indicated. Ducts shall have a continuous slope downward toward underground structures and away from buildings, laid with a minimum slope of 4 inches per 100 feet. Depending on the contour of the finished grade, the high-point may be at a terminal, an electric manhole, a telecommunications maintenance hole, a handhole, or between manholes/maintenance holes or handholes. Perform changes in ductbank direction as follows:
1. Short-radius 90-degree duct bends may be used only for pole or equipment risers, unless specifically indicated as acceptable.
  2. The minimum manufactured bend radius shall be 18 inches for ducts of less than 3 inch diameter, and 36 inches for ducts 3 inches or greater in diameter.
  3. As an exception to the bend radius required above, provide field manufactured long sweep bends having a minimum radius of 25 feet for a change of direction of more than 5 degrees, either horizontally or vertically. Both curved and straight sections may be used to form long sweep bends, but the maximum curve used shall be 30 degrees and manufactured bends shall be used.
- B. Treatment: Ducts shall be kept clean of concrete, dirt, or foreign substances during construction. Field cuts requiring tapers shall be made with proper tools and match factory tapers. A coupling recommended by the duct manufacturer shall be used whenever an existing duct is connected to a duct of different material or shape. Ducts shall be stored to avoid warping and deterioration with ends sufficiently plugged to prevent entry of any water or solid substances. Ducts shall be thoroughly cleaned before being laid. Plastic ducts shall be stored on a flat surface and protected from the direct rays of the sun.

- C. **Conduit Cleaning:** As each conduit run is completed, for conduit sizes 3 inches and larger, draw a flexible testing mandrel approximately 12 inches long with a diameter less than the inside diameter of the conduit through the conduit. After which, draw a stiff bristle brush through until conduit is clear of particles of earth, sand and gravel; then immediately install conduit plugs. For conduit sizes less than 3 inches, draw a stiff bristle brush through until conduit is clear of particles of earth, sand and gravel; then immediately install conduit plugs.
- D. **Multiple Conduits:** Stagger the joints of the conduits by rows (horizontally) and layers (vertically) to strengthen the conduit assembly. Provide plastic duct spacers that interlock vertically and horizontally. Spacer assembly shall consist of base spacers, intermediate spacers, ties, and locking device on top to provide a completely enclosed and locked-in conduit assembly. Install spacers per manufacturer's instructions, but provide a minimum of 2 spacer assemblies per 10 feet of conduit assembly.
- E. **Conduit Plugs and Pull Rope:** New conduit indicated as being unused or empty shall be provided with plugs on each end. Plugs shall contain a weep hole or screen to allow water drainage. Provide a plastic pull rope having 3 feet of slack at each end of unused or empty conduits.
- F. **Conduit and Duct Without Concrete Encasement:** Unless otherwise indicated, depths to the top surface of the direct buried conduit or duct must be not less than 18 inches below finished grade, except under roads and pavement, where depth must be not less than 24 inches below finished grade. Provide not less than 3 inches clearance from the conduit to each side of the trench. Separate multiple conduits by a minimum distance of 2 inches, except that light and power conduits shall be separated from control, signal, and telephone conduits by a minimum distance of 12 inches. Grade bottom of trench smooth; where rock, soft spots, or sharp-edged materials are encountered, excavate the bottom for an additional 3 inches, fill and tamp level with original bottom with sand or earth free from particles that would be retained on a 1/4 inch sieve. The first 6 inch layer of backfill cover shall be sand compacted as previously specified. The rest of the excavation shall be backfilled and compacted in 3 inch to 6 inch layers. Provide color, type and depth of warning tape as indicated in the drawings.
1. **Encasement Under Roads and Structures:** Under roads and paved areas, install conduits in concrete encasement of rectangular cross-section providing a minimum of 3 inch concrete cover around ducts. Concrete encasement shall extend at least 5 feet beyond the edges of paved areas and roads.
- G. **Duct Encased in Concrete:** Construct underground duct lines of individual conduits encased in concrete. Do not mix different kinds of conduit in any one duct bank. Unless otherwise indicated, depths to top of the concrete envelope must be not less than 18 inches below finished grade, except under roads and pavement, concrete envelope must be not less than 24 inches below finished grade. Where installed within the State/City Right-of-Way, the concrete envelope must be not less than 36 inches below finished grade. Concrete encasement surrounding the bank shall be rectangular in cross-section and shall provide at least 3 inches of concrete cover for ducts. Separate conduits by a minimum concrete thickness of 2 inches, except separate light and power conduits from control, signal, and telecommunications conduits by a minimum concrete thickness of 3 inches. Before pouring concrete, anchor duct bank assemblies to prevent the assemblies from floating during concrete pouring. Anchoring shall be done by driving reinforcing rods adjacent to duct spacer assemblies and attaching the rods to the spacer assembly. Provide color, type and depth of warning tape as indicated in the drawings.

1. Ducts shall be provided with end bells whenever duct lines terminate in structures.
2. Connections to Manholes/Maintenance Holes: Duct bank envelopes connecting to underground structures shall be flared to have enlarged cross-section at the manhole/maintenance hole entrance to provide additional shear strength. Dimensions of the flared cross-section shall be larger than the corresponding manhole/maintenance hole opening dimensions by no less than 12 inches in each direction. Perimeter of the duct bank opening in the underground structure shall be flared toward the inside or keyed to provide a positive interlock between the duct bank and the wall of the structure. Use vibrators when this portion of the encasement is poured to assure a seal between the envelope and the wall of the structure.
3. Connections to Existing Underground Structures: For duct bank connections to existing structures, break the structure wall out to the dimensions required and preserve steel in the structure wall. Cut steel and extend into the duct bank envelope. Chip the perimeter surface of the duct bank opening to form a key or flared surface, providing a positive connection with the duct bank envelope.
4. Connections to Existing Concrete Pads: For duct bank connections to concrete pads, break an opening in the pad out to the dimensions required and preserve steel in pad. Cut the steel and extend into the duct bank envelope. Chip out the opening in the pad to form a key for the duct bank envelope.
5. Connections to Existing Ducts: Where connections to existing duct banks are indicated, excavate the banks to the maximum depth necessary. Cut off the banks and remove loose concrete from the conduits before new concrete-encased ducts are installed. Provide a reinforced concrete collar, poured monolithically with the new duct bank, to take the shear at the joint of the duct banks.
6. Partially Completed Duct Banks: During construction wherever a construction joint is necessary in a duct bank, prevent debris such as mud, and, and dirt from entering ducts by providing suitable conduit plugs. Fit concrete envelope of a partially completed duct bank with reinforcing steel extending a minimum of 2 feet back into the envelope and a minimum of 2 feet beyond the end of the envelope. Provide one No. 4 bar in each corner, 3 inches from the edge of the envelope. Secure corner bars with 2 No. 3 ties, spaced approximately one foot apart. Restrain reinforcing assembly from moving during concrete pouring.
7. Seal all electrical penetrations for radon mitigation, maintaining integrity of the vapor barrier, and to prevent infiltration of air, insects, and vermin.

### 3.05 CABLE PULLING

- A. Test existing duct lines with a mandrel and thoroughly swab out to remove foreign material before pulling cables. Pull cables down grade with the feed-in point at the manhole/maintenance hole or buildings of the highest elevation. Use flexible cable feeds to convey cables through manhole/maintenance hole opening and into duct runs. Do not exceed the specified cable bending radii when installing cable under any conditions, including turn-ups into switches, transformers, switchgear, switchboards, and other enclosures. Cable with tape shield shall have a bending radius not less than 12 times the overall diameter of the completed cable. If basket-grip type cable-pulling devices are used to pull cable in place, cut off the section of cable under the grip before splicing and terminating.



- B. Cable Lubricants: Use lubricants that are specifically recommended by the cable manufacturer for assisting in pulling jacketed cables.

### 3.06 CABLES IN UNDERGROUND STRUCTURES

- A. Do not install cables utilizing the shortest path between penetrations, but route along those walls providing the longest route and the maximum spare cable lengths. Form cables to closely parallel walls, not to interfere with duct entrances, and support on brackets and cable insulators. Support cable splices in underground structures by racks on each side of the splice. Locate splices to prevent cyclic bending in the spliced sheath. Install cables at middle and bottom of cable racks, leaving top space open for future cables, except as otherwise indicated for existing installations. Provide one spare 3-insulator rack arm for each cable rack in each underground structure.
- B. Cable Tag Installation: Install cable tags in each manhole/maintenance hole or handhole as specified, including each splice. Tag wire and cable provided by this contract. Install cable tags over the fireproofing, if any, and locate the tags so that they are clearly visible without disturbing any cabling or wiring in the manholes/maintenance holes.

### 3.07 CONDUCTORS INSTALLED IN PARALLEL

- A. Conductors shall be grouped such that each conduit of a parallel run contains one Phase A conductor, one Phase B conductor, one Phase C conductor, and one neutral conductor.

### 3.08 LOW VOLTAGE CABLE SPLICING AND TERMINATING

- A. Make terminations and splices with materials and methods as indicated or specified herein and as designated by the written instructions of the manufacturer. Do not allow the cables to be moved until after the splicing material has completely set. Make splices in underground distribution systems only in accessible locations such as manholes, maintenance holes, handholes, or aboveground termination cabinets.

### 3.09 CABLE END CAPS

- A. Cable ends shall be sealed at all times with coated heat shrinkable end caps. Cables ends shall be sealed when the cable is delivered to the job site, while the cable is stored and during installation of the cable. The caps shall remain in place until the cable is spliced or terminated. Sealing compounds and tape are not acceptable substitutes for heat shrinkable end caps. Cable which is not sealed in the specified manner at all times will be rejected.

### 3.10 GROUNDING SYSTEMS

- A. Provide grounding system as indicated, in accordance with NFPA 70 and IEEE C2, and as specified herein. Provide grounding systems with a resistance to solid earth not exceeding 25 ohms.
- B. Grounding Electrodes: Provide cone pointed driven ground rods driven full depth plus 6 inches, installed to provide an earth ground of the appropriate value for the particular equipment being grounded. If the specified ground resistance is not met, an additional ground rod shall be provided in accordance with the requirements of NFPA 70 (placed not less than 6 feet from the first rod). Should the resultant (combined) resistance exceed the specified resistance, measured not less than 48 hours after rainfall, the Contracting Officer shall be notified immediately.

- C. Grounding Connections: Make grounding connections which are buried or otherwise normally inaccessible, by exothermic weld or compression connector.
  - 1. Make exothermic welds strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning are not acceptable. Mechanical connectors are not required at exothermic welds.
  - 2. Make compression connections using a hydraulic compression tool to provide the correct circumferential pressure. Tools and dies shall be as recommended by the manufacturer. An embossing die code or other standard method shall provide visible indication that a connector has been adequately compressed on the ground wire.
- D. Grounding Conductors: Provide bare grounding conductors, except where installed in conduit with associated phase conductors. Ground cable sheaths, cable shields, conduit, and equipment with No. 6 AWG. Ground other noncurrent-carrying metal parts and equipment frames of metal-enclosed equipment. Ground metallic frames and covers of handholes and pull boxes with a braided, copper ground strap with equivalent ampacity of No. 6 AWG.
- E. Ground Cable Crossing Expansion Joints: Protect ground cables crossing expansion joints or similar separations in structures and pavements by use of approved devices or methods of installation which provide the necessary slack in the cable across the joint to permit movement. Use stranded or other approved flexible copper cable across such separations.
- F. Manhole/Maintenance Hole Grounding: Loop a 4/0 AWG grounding conductor around the interior perimeter, approximately 12 inches above finished floor. Secure the conductor to the manhole/maintenance hole walls at intervals not exceeding 36 inches. Connect the conductor to the manhole/maintenance hole grounding electrode with 4/0 AWG conductor. Bond the ground loop to all cable shields, metal cable racks, and other metal equipment with a minimum 6 AWG conductor.

### 3.11 EXCAVATING, BACKFILLING, AND COMPACTING

- A. Provide in accordance with NFPA 70.
- B. General Excavation and Trenching: Keep excavations free from water while construction is in progress. Notify the Contracting Officer immediately in writing if it becomes necessary to remove rock or hard, unstable, or otherwise unsatisfactory material to a depth greater than indicated. Make trench sides as nearly vertical as practicable except where sloping of sides is allowed. Sides of trenches shall not be sloped from the bottom of the trench up to the elevation of the top of the conduit. Excavate ledge rock, boulders, and other unyielding material to an overdepth at least 6 inches below the bottom of the conduit unless otherwise indicated or specified. Blasting will not be permitted. Use gravel placed in 6 inch maximum layers to refill overdepths to the proper grade. At Contractor's option, the excavations may be cut to an overdepth of not less than 4 inches and refilled to required grade as specified. Grade bottom of trenches accurately to provide uniform bearing and support for each section of conduit on undisturbed soil at every point along its entire length. Trench dimensions shall be as indicated.
- C. Backfilling: Construct backfill in two operations (initial and final) as indicated and specified in this section. Place initial backfill in 6 inch maximum loose lifts to one foot

above conduit unless otherwise specified. Ensure that initially placed material is tamped firmly under pipe haunches. Bring up evenly on each side and along the full length of conduit. Ensure that no damage is done to the conduit or its protective coating. Place the remainder of the backfill (final backfill) in 9 inch maximum loose lifts unless otherwise specified. Compact each loose lift as specified in paragraph entitled "Compaction" before placing the next lift. Where settlements greater than the tolerance typically allowed for grading occur in trenches due to improper compaction, excavate to the depth necessary to rectify the problem, then backfill and compact the excavation as specified herein and restore the surface to the required elevation. Coordinate backfilling with testing of conduits. Provide buried warning and identification tape installed in accordance with the manufacturer's recommendation.

- D. Compaction: Use hand-operated, plate-type, vibratory, or other suitable hand tampers in areas not accessible to larger rollers or compactors. Avoid damaging conduits and protective conduit coatings. Compact material in accordance with the following unless otherwise specified. If necessary, alter, change, or modify selected equipment or compaction methods to meet specified compaction requirements.
  - 1. Compaction of Conduit and Initial Backfill: Compact each lift to a dense consistency as evidenced by little to no settlement of the gravel under repeated passes with the compaction equipment but not less than a minimum of five passes of a hand operated type vibratory compactor with the vibrator turned on.
  - 2. Compaction of Final Backfill: Moisture condition the final backfill to between optimum and 3 percent wet of the optimum content and compact to at least 90 percent ASTM D 1557 maximum dry unit weight. Under areas to be seeded or sodded, compact succeeding layers of final backfill to 85 percent of ASTM D 1557 maximum dry unit weight. For conduits under structures and pavements, the top 24 inches of backfill below the finish subgrade level shall consist of controlled backfill placed in not more than 8 inch thick loose horizontal lifts, moisture conditioned to within 2 percent of optimum moisture content, and compacted to at least 95 percent of ASTM D 1557 maximum dry unit weight.
- E. Reconditioning of Surfaces:
  - 1. Unpaved Surfaces: Restore to their original elevation and condition unpaved surfaces disturbed during installation of duct. Preserve sod and topsoil removed during excavation and reinstall after backfilling is completed. Replace sod that is damaged by sod of quality equal to that removed. When the surface is disturbed in a newly seeded area, re-seed the restored surface with the same quantity and formula of seed as that used in the original seeding, and provide top-soiling, fertilizing, liming, seeding, sodding, sprigging, or mulching.
  - 2. Paving Repairs: Where trenches, pits, or other excavations are made in existing roadways and other areas of pavement where surface treatment of any kind exists, restore such surface treatment or pavement the same thickness and in the same kind as previously existed, except as otherwise specified, and to match and tie into the adjacent and surrounding existing surfaces.

### 3.12 CAST-IN-PLACE CONCRETE

- A. Provide concrete in accordance with SECTION 03300 CAST-IN-PLACE CONCRETE.
- B. Concrete Slabs for Equipment:

1. Unless otherwise indicated, the slab shall be at least 8 inches thick, reinforced with a 6 by 6 - W2.9 by W2.9 mesh, placed uniformly 4 inches from the top of the slab. Slab shall be placed on a 6 inch thick, well-compacted gravel base. Top of concrete slab shall be approximately 4 inches above finished grade with gradual slope for drainage. Edges above grade shall have 1/2 inch chamfer. Slab shall be of adequate size to project at least 8 inches beyond the equipment.
  2. Stub up conduits, with bushings, 2 inches into cable wells in the concrete pad. Coordinate dimensions of cable wells with transformer cable training areas.
- C. Sealing: When the installation is complete, the Contractor shall seal all conduit and other entries into the equipment enclosure with an approved sealing compound. Seals shall be of sufficient strength and durability to protect all energized live parts of the equipment from rodents, insects, or other foreign matter.

### 3.13 FIELD QUALITY CONTROL

- A. Performance of Field Acceptance Checks and Tests: Perform in accordance with the manufacturer's recommendations, and include the following visual and mechanical inspections and electrical tests, performed in accordance with NETA ATS.
1. Low Voltage Cables, 600-Volt: Perform tests after installation of cable, splices and terminations and before terminating to equipment or splicing to existing circuits.
    - a. Visual and Mechanical Inspection
      - 1) Inspect exposed cable sections for physical damage.
      - 2) Verify that cable is supplied and connected in accordance with contract plans and specifications.
      - 3) Verify tightness of accessible bolted electrical connections.
      - 4) Inspect compression-applied connectors for correct cable match and indentation.
      - 5) Visually inspect jacket and insulation condition.
      - 6) Inspect for proper phase identification and arrangement.
    - b. Electrical Tests:
      - 1) Perform insulation resistance tests on wiring No. 6 AWG and larger diameter using instrument which applies voltage of approximately 1000 volts dc for one minute.
      - 2) Perform continuity tests to insure correct cable connection.
  2. Grounding System:
    - a. Visual and Mechanical Inspection: Inspect ground system for compliance with contract plans and specifications.
    - b. Electrical Tests: Perform ground-impedance measurements utilizing the fall-of-potential method in accordance with IEEE 81. On systems consisting of interconnected ground rods, perform tests after interconnections are complete. On systems consisting of a single ground rod perform tests before any wire is connected. Take measurements in normally dry weather, not less than 48 hours

after rainfall. Use a portable megohmmeter tester in accordance with manufacturer's instructions to test each ground or group of grounds. The instrument shall be equipped with a meter reading directly in ohms or fractions thereof to indicate the ground value of the ground rod or grounding systems under test.

- B. Follow-Up Verification: Upon completion of acceptance checks and tests, the Contractor shall show by demonstration in service that circuits and devices are in good operating condition and properly performing the intended function. As an exception to requirements stated elsewhere in the contract, the Contracting Officer shall be given 5 working days advance notice of the dates and times of checking and testing.

END OF SECTION

## SECTION 16510 - INTERIOR LIGHTING

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This section includes providing luminaires, lamps, drivers, switches, time switches and other control devices, contactors, emergency lighting accessories and battery-powered units and systems for interior use, including luminaires and accessories mounted on the exterior surfaces of buildings. Materials not normally furnished by manufacturers of these devices are specified in SECTION 16100 - ELECTRICAL WORK.

#### 1.02 REFERENCES

- A. The publications listed herein form a part of this specification to the extent referenced. The publications may be referred to in the text by the basic designation only. Unless otherwise indicated, the most recent edition of the publication with current revisions and amendments will be enforced.

#### 1.03 RELATED WORK

- A. SECTION 16011 - GENERAL ELECTRICAL REQUIREMENTS applies to this section, with the additions and modifications specified herein.
- B. SECTION 16100 - ELECTRICAL WORK applies to this section, with additions and modifications specified herein.

#### 1.04 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Data, shop drawings, and reports shall employ the terminology, classifications, and methods prescribed by the IES Lighting Handbook, as applicable, for the lighting system specified.
- C. Submit shop drawings and catalog cuts of the following equipment for approval. Each submittal shall be prepared with a summary sheet attached to each copy identifying all items included in the submittal. Incomplete submittals and those without summary sheets will be returned without review.
- D. Manufacturer's Catalog Data:
  - 1. Luminaires, including lamps and ballasts/drivers.
  - 2. Time switch
  - 3. Photocell switch
  - 4. Exit lights
  - 5. Occupancy/vacancy sensors
- E. Operations and Maintenance (O&M) Manual: Submit Operations and Maintenance Manual as stipulated in item entitled "OPERATIONS AND MAINTENANCE MANUAL" hereinbelow.

- F. **Manufacturer's Warranty:** Submit manufacturer's warranty as stipulated in item entitled "MANUFACTURER'S WARRANTY" hereinbelow.

#### 1.05 OPERATIONS AND MAINTENANCE MANUAL

- A. Submit operation and maintenance data showing all light fixtures, control modules, control zones, occupancy/vacancy sensors, ambient light level sensors, power packs, dimming ballasts, drivers, schematic diagrams and all interconnecting control wire, conduit, and associated hardware. Submit documentation that includes contact information, summary of procedures, and the limitations and conditions applicable to the project.

#### 1.06 QUALITY ASSURANCE

- A. **Regulatory Requirements:** In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" or "must" 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 Contracting Officer. Provide equipment, materials, installation, and workmanship 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 this section.
- C. **Alternative Qualifications:** Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6,000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
- D. **Material and Equipment Manufacturing Date:** Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

#### 1.07 MANUFACTURER'S WARRANTY

- A. Manufacturer's warranties and guarantees furnished for materials used in the work and instruction sheets and parts lists supplied with materials shall be delivered to the Contracting Officer prior to acceptance of the project.
- B. **Manufacturer's LED Luminaire Warranty**
  - 1. Provide a written 5 year minimum replacement warranty for material, fixture finish, and workmanship. Provide written warranty document that contains all warranty processing information needed, including but not limited to, lighting distributor's purchase order number and/or manufacturer's sales order number, manufacturer's toll-free warranty telephone number, customer service point of contact, whether or not a return authorization number is required, return shipping information, and closest return location to the project location.

- a. Finish warranty must include failure and substantial deterioration such as blistering, cracking, peeling, chalking, or fading.
- b. Material warranty must include:
  - 1) All LED drivers and integral control equipment.
  - 2) Replacement when more than 15 percent of LED sources in any lightbar or subassembly(s) are defective or non-starting.
- C. Warranty period must begin in accordance with the manufacturer's standard warranty starting date.

## PART 2 - PRODUCTS

### 2.01 PROJECT COORDINATION

- A. Products and materials not considered to be luminaires, luminaire controls, or associated equipment are specified in SECTION 16100 - ELECTRICAL WORK. Luminaires, luminaire controls, and associated equipment for exterior applications are specified in SECTION 16530 - EXTERIOR LIGHTING.

### 2.02 LUMINAIRES

- A. UL 1598, NEMA C82.77, and UL 8750. Provide luminaires as indicated in luminaire schedule or details on project plans. Provide luminaires complete with light sources of quantity, type, and wattage indicated. Provide all luminaires of the same type by the same manufacturer. Luminaires must be specifically designed for use with the driver or ballast and light source provided.
- B. LED Luminaires: Provide luminaires complete with power supplies (drivers) and light sources. Provide design information including lumen output and design life in luminaire schedule on project plans for LED luminaires. LED luminaires must also meet the following minimum requirements:
  - 1. Luminaires must have a minimum 5 year manufacturer's warranty.
  - 2. Luminaires must have a minimum L70 lumen maintenance value of 50,000 hours as calculated by IES TM-21, with data obtained per IES LM-80 requirements.
  - 3. Luminaire drive current value must be identical to that provided by test data for luminaire in question.
  - 4. Luminaires must be tested to IES LM-79 and IES LM-80 standards, with the results provided as required in the Submittals paragraph of this specification.

### 2.03 DRIVERS AND BALLASTS

- A. LED Drivers: NEMA SSL 1, UL 8750. LED drivers must be electronic, UL Class 1, constant-current type and comply with the following requirements:
  - 1. Output power (watts) and luminous flux (lumens) as shown in luminaire schedule for each luminaire type.
  - 2. Power Factor (PF) greater than or equal to 0.9 over the full dimming range when provided.



3. Current draw Total Harmonic Distortion (THD) of less than 20 percent.
4. Class A sound rating.
5. Operable at input voltage of 120-277 volts at 60 hertz.
6. Minimum 5 year manufacturer's warranty.
7. RoHS compliant.
8. Integral thermal protection that reduces or eliminates the output power if case temperature exceeds a value detrimental to the driver.
9. UL listed for dry or damp locations typical of interior installations.
10. Non-dimmable as indicated in luminaire schedule.

#### 2.04 LIGHT SOURCES

- A. NEMA ANSLG C78.377, NEMA SSL 3. Provide type and wattage as indicated in luminaire schedule on project plans.
- B. LED Light Sources
  1. Correlated Color Temperature (CCT) of 4000 degrees K, unless otherwise indicated.
  2. Minimum Color Rendering Index (CRI) R9 value of 80.
  3. High power, white light output utilizing phosphor conversion (PC) process or mixed system of colored LEDs, typically red, green and blue (RGB).
  4. RoHS compliant.
  5. Provide light source color consistency by utilizing a binning tolerance within a 4-step McAdam ellipse.

#### 2.05 LIGHTING CONTROLS

- A. ASHRAE 90.1 - IP ASHRAE 189.1. Provide network certification for all networked lighting control systems and devices per requirements of DOD 8500.01 and DOD 8510.01.
- B. Toggle Switches: Provide line-voltage toggle switches as specified in SECTION 16100 - ELECTRICAL WORK.
- C. Sensors for Lighting Control: IEEE C62.41, NEMA WD 1, UL 94, UL 916, UL 508, ASTM D4674 REV A.
  1. Occupancy Sensors: Provide occupancy sensors with coverage patterns as indicated on project plans. Provide no less quantity of sensors as shown on plans but add additional sensors when required to fulfill coverage requirement for the specific model sensor provided. Provide sensors designed for ceiling, wall or wall-box installation as indicated. Operating voltage must be 120 volts or operating voltage must be 24V in conjunction with a control system or separate power pack which interacts with luminaire being controlled. Provide housing of high-impact, injection-molded thermoplastic with a multi-segmented lens for PIR and dual technology sensors. Sensor operation requires movement to activate luminaires controlled and

turns luminaires off after a set time of inactivity. Provide integral photocell mounted in occupancy sensor housing when indicated.

- a. Passive Infrared (PIR) Sensors: Provide ceiling or wall-mounted PIR sensors meeting the following requirements:
    - 1) Temperature compensated, dual element sensor and a multi-element fresnel lens (Poly IR4 material).
    - 2) Technology to optimize automatic time delay to fit occupant usage patterns.
    - 3) No minimum load requirement for line voltage sensors and be capable of switching from zero to 800 W at 120 VAC, 50/60 Hz and from zero to 1200 W at 277 VAC, 50/60 Hz. Control voltage sensors must not exceed a maximum load requirement of 20 mA at 24VDC.
    - 4) Time delay of five to 30 minutes in increments of five minutes with a walk through and test mode set by DIP switch.
    - 5) LED indicator that remains active during occupancy.
    - 6) Built-in light level sensor that is operational from 8 to 180 foot-candles.
    - 7) Coverage pattern tested to NEMA WD 7 standards.
    - 8) Standard five year warranty and be UL listed
    - 9) No leakage current to load when in the off mode.
  - b. Ultrasonic Sensors: Provide ceiling-mounted ultrasonic sensors meeting the following requirements:
    - 1) Operate at an ultrasonic frequency of 25 kHz.
    - 2) LED on exterior of device to indicate occupant detection.
    - 3) Adjustable time delay period of 15 seconds to 15 minutes.
    - 4) UL listed with minimum five year warranty.
    - 5) Provide with isolated relay for integrating control of HVAC or other automated systems.
  - c. Dual Technology Sensors: Provide dual technology sensors that meet the requirements for PIR sensors and ultrasonic sensors indicated above. If either the passive infrared or ultrasonic sensing registers occupancy, the luminaires must remain on.
- D. Timeswitch: UL 917. Provide electromechanical type timeswitch with a 24 hour astronomic dial. Provide power to switch from integral synchronous motor with a maximum three watt rating. Rate contacts at 40 amps at 120-277 volts for general purpose loads. Provide contacts in a SPST, normally-open (NO) configuration. Provide switch with manual bypass control function.

## 2.06 EXIT LIGHTS

- A. UL 924, NFPA 70, and NFPA 101. Exit lights shall be self-powered type. Exit lights shall use no more than 5 watts.
- B. Self-Powered LED Type Exit Lights (Battery Backup): Provide with automatic power failure device, test switch, pilot light, and fully automatic high/low trickle charger in a self-contained power pack. Battery shall be sealed electrolyte type, shall operate unattended, and require no maintenance, including no additional water, for a period of not less than 5 years. LED exit light shall have emergency run time of 90 minutes (minimum). The light emitting diodes shall have rated lamp life of 70,000 hours (minimum).

#### 2.07 EQUIPMENT IDENTIFICATION

- A. Manufacturer's Nameplate: Each item of equipment must have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.
- B. Labels: Provide labeled luminaires in accordance with UL 1598 requirements. All luminaires must be clearly marked for operation of specific light sources and ballasts, generators or drivers. Note the following light source characteristics in the format "Use Only \_\_\_\_\_":
  - 1. Light source diameter code (T-4, T-5, T-8), tube configuration (twin, quad, triple), base type, and nominal wattage for fluorescent and compact fluorescent luminaires.
  - 2. Light source type, wattage, envelope type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.
  - 3. Start type (programmed start, instant start) for fluorescent and compact fluorescent luminaires.
  - 4. ANSI ballast type (M98, M57, etc.) for HID luminaires.
  - 5. Correlated color temperature (CCT) and color rendering index (CRI) for all luminaires.

All markings related to light source type must be clear and located to be readily visible to service personnel, but unseen from normal viewing angles when light sources are in place. Ballasts, generators or drivers must have clear markings indicating multi-level outputs and indicate proper terminals for the various outputs.

#### 2.08 FACTORY APPLIED FINISH

- A. Provide all luminaires and lighting equipment with factory-applied painting system that as a minimum, meets requirements of NEMA 250 corrosion-resistance test.

#### 2.09 RECESS- AND FLUSH-MOUNTED LUMINAIRES

- A. Provide access to lamp and ballast from bottom of luminaire. Provide trim for the exposed surface of flush-mounted luminaires as indicated on project drawings and specifications.

#### 2.10 SUSPENDED LUMINAIRES

- A. Provide hangers capable of supporting twice the combined weight of luminaires supported by hangers. Provide with swivel hangers to ensure a plumb installation. Provide cadmium-plated steel with a swivel-ball tapped for the conduit size indicated.

Hangers must allow fixtures to swing within an angle of 45 degrees. Brace pendants 4 feet or longer to limit swinging. Single-unit suspended luminaires must have twin-stem hangers. Multiple-unit or continuous row luminaires must have a tubing or stem for wiring at one point and a tubing or rod suspension provided for each unit length of chassis, including one at each end. Provide rods in minimum 0.18 inch diameter.

#### 2.11 SUPPORT HANGERS FOR LIGHTING FIXTURES IN SUSPENDED CEILINGS

- A. Wires: ASTM A641/A641M, galvanized regular coating, soft temper, 0.11 inches in diameter (12 gage) or galvanized, braided steel, minimum 0.08 inches in diameter.
- B. Wires, for Humid Spaces:
  - 1. ASTM A580/A580M, composition 302 or 304, annealed stainless steel 0.11 inches in diameter (12 gage).
- C. Rods: Threaded steel rods, 3/16 inch diameter, zinc or cadmium coated.
- D. Straps: Galvanized steel, one by 3/16 inch, conforming to ASTM A653/A653M, with a light commercial zinc coating or ASTM A1008/A1008M with an electrodeposited zinc coating conforming to ASTM B633, Type RS.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

- A. Electrical installations shall conform to IEEE C2, NFPA 70, and to the requirements specified herein. Install luminaires and lighting controls to meet the requirements of ASHRAE 90.1 - IP and ASHRAE 189.1. To encourage consistency and uniformity, install luminaires of the same manufacture and model number when residing in the same facility or building.
- B. Lamps: Lamps of the type, wattage, and voltage rating indicated shall be delivered to the project in the original cartons and installed just prior to project completion. Lamps installed and used for working light during construction shall be replaced prior to turnover of the project if more than 15 percent of their rated life has been used. Lamps shall be tested for proper operation prior to turn-over and shall be replaced, if necessary, with new lamps from the original manufacturer.
- C. Lighting Fixtures: Set lighting fixtures plumb, square, and level with ceiling and walls, in alignment with adjacent lighting fixtures, and secure in accordance with manufacturers' directions and approved drawings. Installation shall meet requirements of NFPA 70. Mounting heights specified or indicated shall be to the bottom of fixture for ceiling-mounted fixtures and to center of fixture for wall-mounted fixtures. Obtain approval of the exact mounting for lighting fixtures on the job before commencing installation and, where applicable, after coordinating with the type, style, and pattern of the ceiling being installed. Recessed and semi-recessed fixtures shall be independently supported from the building structure by a minimum of 4 wires or threaded rods per fixture and located near each corner of each fixture. Ceiling grid clips are not allowed as an alternative to independently supported light fixtures. Round fixtures or fixtures smaller in size than the ceiling grid shall be independently supported from the building structure by a minimum of 4 wires or threaded rods per fixture spaced approximately equidistant around the fixture. Do not support fixtures by ceiling acoustical panels. Where fixtures of sizes less than the ceiling grid are indicated to be centered in the

acoustical panel, support such fixtures independently and provide at least two 3/4 inch metal channels spanning, and secured to, the ceiling tees for centering and aligning the fixture. Provide wires or threaded rods for lighting fixture support in this section.

- D. **Suspended Fixtures:** Suspended fixtures shall be provided with 45 degree swivel hangers so that they hang plumb and shall be located with no obstructions within the 45 degree range in all directions. The stem, canopy and fixture shall be capable of 45 degree swing. Pendants, rods, or chains 4 feet or longer excluding fixture shall be braced to prevent swaying using 3 cables at 120 degree separation. Suspended fixtures in continuous rows shall have internal wireway systems for end to end wiring and shall be properly aligned to provide a straight and continuous row without bends, gaps, light leaks or filler pieces. Aligning splines shall be used on extruded aluminum fixtures to assure hairline joints. Steel fixtures shall be supported to prevent "oil-canning" effects. Fixture finishes shall be free of scratches, nicks, dents, and warps, and shall match the color and gloss specified. Pendants shall be finished to match fixtures. Aircraft cable shall be stainless steel. Canopies shall be finished to match the ceiling and shall be low profile unless otherwise shown. Maximum distance between suspension points shall be 10 feet or as recommended by the manufacturer, whichever is less.
- E. **Exit Lights:** Wire exit lights and emergency lighting units ahead of the switch to the normal lighting circuit located in the same room or area.
- F. **Photocell Switch Aiming:** Aim switch according to manufacturer's recommendations. Set adjustable window slide for minimum footcandles photocell turn-on.
- G. **Occupancy/Vacancy Sensors:** Provide testing of sensor coverage in all spaces where sensors are placed. This should be done only after all furnishings (carpet, furniture, workstations, etc.) have been installed. Provide quantity of sensor units indicated as a minimum. Provide additional units to give full coverage over controlled area. Full coverage shall provide hand and arm motion detection for office and administration type areas and walking motion for industrial areas, warehouses, storage rooms and hallways. Locate the sensor(s) as indicated and in accordance with the manufacturer's recommendations to maximize energy savings and to avoid nuisance activation and deactivation due to sudden temperature or airflow changes and usage.

### 3.02 FIELD APPLIED PAINTING

- A. Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting shall be as specified in SECTION 09901 – PAINTING.

### 3.03 GROUNDING

- A. Ground noncurrent-carrying parts of equipment as specified in SECTION 16100 - ELECTRICAL WORK. Where the copper grounding conductor is connected to a metal other than copper, provide specially treated or lined connectors suitable for this purpose.

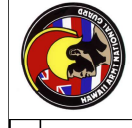
### 3.04 FIELD TESTS

- A. **Operating Test:** Upon completion of the installation, conduct an operating test to show that the equipment operates in accordance with the requirements of this section. Make adjustments and add and/or replace light fixtures and other equipment as required to correct deficiencies.

- B. Lighting Control Test: Conduct operational control of installed and energized luminaires. Set time delays as directed by Contracting Officer.
- C. Ground Resistance Tests: Perform as specified in SECTION 16100 - ELECTRICAL WORK.

END OF SECTION





OWNER: DEPARTMENT OF DEFENSE, STATE OF HAWAII  
 TAX MAP KEY: TMK: (1) 9-1-013111  
 LOT AREA: 11 ACRES

BUILDING CODE: TYPE III  
 NO. OF STORES: 2

ZONING INFORMATION  
 ZONING: URBAN  
 F-1  
 EXISTING FLOOR AREA: 15,600 SF  
 NEW FLOOR AREA: 0 SF  
 TOTAL FLOOR AREA: 15,600 SF  
 FLOOD ZONE: D  
 SMA: NOT IN SMA

DATE	BY	DESCRIPTION

100% FINAL DESIGN  
 03/22/2024  
 SHEET NO. 01 02 03 04  
 OF 01 02 03 04

DEPARTMENT OF DEFENSE  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

KALAELOA B90T RESTORATION  
 DRAWING INDEX, PROJECT DATA

STATE OF HAWAII  
 ARCHITECT ENGINEER  
 BUILDING 90T  
 SCALE: AS NOTED

DATE: APRIL 2024  
 CH: 202209-C  
 FEDERAL PROJECT NO.: T480011  
 SHEET: 3 OF 4

G-002

**PROJECT DATA**

**GENERAL NOTES**

1. TYPICAL MATERIAL INDICATIONS ON INTERIOR ELEVATIONS ARE CALLED OUT ON ELEVATION 'A'. TYPICAL MATERIAL INDICATIONS ON EXTERIOR ELEVATIONS ARE CALLED OUT ON THE FRONT ELEVATION.
2. ALL ITEMS & MATERIALS NOTED WITHIN THESE DRAWINGS ARE EXISTING UNLESS INDICATED OTHERWISE.
3. COMPLY WITH THE LATEST FEDERAL STATE AND LOCAL LAWS, AND BUILDING CODES IN THE CONSTRUCTION OF THIS PROJECT.
4. REPAIR ALL DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT. CONTRACTOR WILL BEAR COST OF REPAIRS.
5. USE DIMENSIONS NOTED ON DRAWINGS ONLY, DO NOT SCALE DIMENSIONS FROM THE DRAWINGS.

SHT	DESCRIPTION
48 E-001	ELECTRICAL
49 E-002	NOTE, SYMBOLS
50 ED101	GENERAL NOTES
51 ES101	OVERALL PLAN - DEMO
52 ES102	ELECTRICAL SITE PLAN - DEMO
53 E-101	ELECTRICAL SITE PLAN - NEW
54 E-201	OVERALL PLAN
55 E-202	POWER PLAN - NEW
56 E-203	ROOF PLAN - NEW
57 E-204	LIGHTING PLAN - NEW
58 E-401	TELECOMMUNICATIONS PLAN - NEW
59 E-501	ENLARGED PLANS
60 E-502	DUCT SECTION DETAILS
61 E-601	DETAILS
62 E-602	ONE-LINE DIAGRAM - DEMO
63 E-603	ONE-LINE DIAGRAM - NEW
64 E-604	TELEPHONE SERVICE - DEMO AND NEW
65 E-701	DIAGRAMS
66 E-702	LIGHT FIXTURE SCHEDULE
67 E-703	PANEL SCHEDULES

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01 G-001	GENERAL
02 G-002	TITLE SHEET
03 C-001	DRAWING INDEX, PROJECT DATA
04 C-002	CIVIL
05 C-100	CIVIL NOTES - 1
06 C-101	CIVIL NOTES - 2
07 C-102	TOPOGRAPHIC SURVEY - 1
08 C-103	TOPOGRAPHIC SURVEY - 2
09 C-104	ESCP & DEMOLITION PLAN - 1
10 C-105	ESCP & DEMOLITION PLAN - 2
11 C-501	TRAFFIC CONTROL PLAN
12 C-502	CIVIL DETAILS - 1
13 C-503	CIVIL DETAILS - 2
14 AD101	ARCHITECTURAL
15 AD102	PARTIAL DEMOLITION FIRST FLOOR PLAN I - II
16 AD103	PARTIAL DEMOLITION FIRST FLOOR PLAN III - IV
17 AD201	DEMOLITION UPPER FLOOR PLAN
18 A-101	DEMOLITION EXTERIOR ELEVATIONS
19 A-102	PARTIAL FIRST FLOOR PLAN I
20 A-103	PARTIAL FIRST FLOOR PLAN II
21 A-104	PARTIAL FIRST FLOOR PLAN III
22 A-105	PARTIAL FIRST FLOOR PLAN IV
23 A-111	UPPER FLOOR PLAN
24 A-112	PARTIAL FIRST FLOOR REFLECTED CEILING PLAN I
25 A-113	PARTIAL FIRST FLOOR REFLECTED CEILING PLAN II
26 A-114	PARTIAL FIRST FLOOR REFLECTED CEILING PLAN III
27 A-121	PARTIAL FIRST FLOOR REFLECTED CEILING PLAN IV
28 A-122	PARTIAL ROOF PLAN I - II
29 A-131	PARTIAL ROOF PLAN III - IV
30 A-132	ENLARGED FLOOR PLAN
31 A-201	ENLARGED FLOOR PLAN
32 A-401	EXTERIOR ELEVATIONS
33 A-402	INTERIOR ELEVATIONS
34 A-403	INTERIOR ELEVATIONS
35 A-501	INTERIOR ELEVATIONS
36 A-511	ROOF DETAILS
37 A-521	DOOR & WINDOW DETAILS
38 A-531	DETAILS
39 A-532	WALL SECTIONS
40 A-601	SCHEDULES
41 M-001	MECHANICAL
42 M-101	MECHANICAL GENERAL NOTES AND LEGEND
43 MD401	OVERALL MECHANICAL AND PLUMBING FLOOR PLAN
44 M-401	ENLARGED DEMOLITION MECHANICAL AND PLUMBING FLOOR PLAN
45 M-501	ENLARGED MECHANICAL AND PLUMBING FLOOR PLAN
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**GENERAL NOTES:**

1. VERIFY ALL DIMENSIONS AND ELEVATIONS, AND NOTIFY THE OWNER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.
2. INSTALL ALL ITEMS ACCORDING TO THE PLANS AND SPECIFICATIONS. NO MODIFICATIONS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
3. CONTRACTOR TO ESTABLISH AND MAINTAIN EMERGENCY PLANS IN CASE OF DAMAGE TO UTILITIES IN THE AREA. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR TO UTILITIES.
4. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
5. PREPARE SUBGRADE PER SECTION 28 OF THE CITY AND COUNTY OF HONOLULU STANDARDS SPECIFICATIONS PERFORM COMPACTION TESTS PER STD 1697 TO DETERMINE PERCENTAGE OF MAXIMUM DENSITY.

**SEWER NOTES:**



1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY'S "STANDARD SPECIFICATIONS," SEPT 1986, THE DEPARTMENT OF ENVIRONMENTAL SERVICES "WASTEWATER SYSTEM STANDARDS," JULY 2017, AND "WASTEWATER SYSTEM STANDARD DETAILS," JULY 2017, CURRENT CITY PRACTICES AND REVISED ORDINANCE OF HONOLULU, 1987 AS AMENDED.
2. CRUSHED ROCK GRADE IS PERMITTED WHERE SOIL IS ENGINEER IN AREAS OF UNSTABLE SOIL. THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.
3. THE UNDERGROUND PIPES, CABLES OR DUCT LINES KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES. IN THE PRESENCE OF WATER INSPECTOR AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES.
4. SEWER LATERAL SHALL BE CLEAR OF AND NOT INTERFERING WITH ANY OTHER UTILITY. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES SHALL BE STRICTLY OBSERVED AND FOLLOWED.
5. SLOPE FOR SEWER LATERALS SHALL BE A MINIMUM OF 2.00% UNLESS OTHERWISE NOTED.
6. BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.
9. GEOTEXTILE FABRIC TO ENVELOP THE PIPE ORACLE AND SELECT BACKFILL MATERIAL SHALL BE PROVIDED WHERE WATER OR UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED.
10. CONFINED SPACE
  - FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT-REQUIRED CONFINED SPACE AS DEFINED IN 29 C.F.R. PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING
    - A. FULL BODY HARNESS FOR UP TO TWO PERSONNEL.
    - B. FALL PROTECTION EQUIPMENT.
    - C. INGRESS PROGRESS AND FALL PROTECTION EQUIPMENT.
    - D. TWO-WAY RADIO (WALKIE-TALKIE) IF OUT OF LINE-OF-SIGHT.
    - E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
    - F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
    - G. SOLID RESCUE DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE, METHANE, AND OTHER GASES CAPABLE OF WORKING AT A DISTANCE AT LEAST 20 FEET AWAY.
    - H. PERSONAL MULTIGAS DETECTOR TO BE CARRIED BY INSPECTOR.
  - CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY
  - ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

18. WHEN CONNECTING TO A LIVE SEWER LINE, THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE REGULATIONS AND PROCEDURES TO PREVENT ANY UNNECESSARY DISRUPTIONS TO THE EXISTING SEWER SYSTEM. ANY WATER MAINS SHALL BE PROTECTED FROM DAMAGE. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR FIVE (5) WORKING DAYS PRIOR TO THE ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.
19. IF CONTRACTOR ENCOUNTERS FLOW MONITORING DEVICES SUCH AS SPECIAL SEWER MANHOLE COVERS EMBEDDED WITH SOLAR PANELS, CONTACT COLLECTION SYSTEMS MAINTENANCE (CSM), ELM AT 788-7272 TO COORDINATE TEMPORARY REMOVAL.

**WATER NOTES:**

1. UNLESS OTHERWISE SPECIFIED, ALL WATERLINES AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS," DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS," VOLUME 3, DATED 2021, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
2. NO DETENTION TO THE BOARD OF WATER SUPPLY, 2002 WATER SYSTEM STANDARDS SHALL BE ALLOWED WITHOUT THE APPROVAL OF KALAEOA WATER COMPANY.
3. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT ARE NOT GUARANTEED AS TO ACCURACY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND MARKING LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATERLINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE STRICTLY PROHIBITED FROM EXCAVATING BEHIND WATERLINES, TEES, AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATERLINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATERLINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BMS APPROVAL) AND/OR ADOPTING THE CONSTRUCTION METHOD.
5. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL VERIFY IN THE FIELD, THE LOCATION OF EXISTING WATERLINES AND APPURTENANCES.
6. ANY GAS UTILITIES TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION, TO MEET THE REQUIREMENTS OF BMS STANDARDS, WHEN SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD.
7. THE CONTRACTOR SHALL NOTIFY KALAEOA WATER COMPANY ONE WEEK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

20. THE CONTRACTOR SHALL MAINTAIN VISIBILITY AND MAINTENANCE ACCESS TO THE SEWER MANHOLE LOCATIONS AT ALL TIMES, INCLUDING DURING NON-WORK HOURS AND PAVING OPERATIONS.

			
STATE OF HAWAII ENGINEERING & SURVEYING LICENSE NO. 1757 B. S. TJORNEHOJ		100% FINAL DESIGN DATE: 03/27/2024 DRAWN BY: [blank] CHECKED BY: [blank]	
HAWAII ARMY NATIONAL GUARD DESIGN AND PROJECT MANAGEMENT BRANCH BUILDING 907 KALAEOA, HAWAII		CIVIL NOTES - 1 KALAEOA B907 RESTORATION	

DATE OF ISSUE	03/27/2024
SCALE	AS SHOWN
PROJECT NO.	CA-202209-C
TITLE BLOCK	ENGINEERING & SURVEYING
SHEET NO.	3
TOTAL SHEETS	4

APPROVED:

HAWAII STATE REGISTERED PROFESSIONAL ENGINEER  
 WORKING WITH STATE BOARD OF ENGINEERING  
 LETTER OF APPROVAL NO. HW-2024-01  
 DATE: \_\_\_\_\_

1 2 3 4 5

1 2 3 4 5

**CONSTRUCTION WITHIN STATE RIGHT-OF-WAY NOTES:**

1. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM WORK UPON STATE HIGHWAYS FROM THE OAHU DISTRICT ENGINEER STATE HIGHWAYS, AT 727 KAKOI STREET, PRIOR TO COMMENCEMENT OF WORK WITHIN THE STATE HIGHWAY RIGHT-OF-WAY.
2. CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN THE STATES RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE DESIGN CRITERIA AND SPECIFICATIONS FOR THE CURRENT HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, OF THE STATE HIGHWAYS DIVISION.
3. WORK MAY BE PERFORMED BETWEEN THE HOURS OF 8:30 A.M. AND 3:00 P.M. MONDAY THROUGH FRIDAY, EXCEPT STATE HOLIDAYS, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT ENGINEER.
4. AT CERTAIN LOCATIONS, VEHICLE CLOSURE WILL BE ALLOWED DURING THE NIGHT TO SCHOOL, JANUARY TRAVELING WRECH, CHRISTMAS, NEW YEAR, AND OTHER HOLIDAYS AS DIRECTED BY THE HIGHWAYS DIVISION.
5. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION AND RESTORATION WORK, AND ADAPTED TO PUBLIC STREETS AND HIGHWAYS, ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION MUTCD - MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 11 - TEMPORARY TRAFFIC CONTROL.
6. LANE CLOSURES SHALL CONFORM TO THE TRAFFIC CONTROL PLAN INCORPORATED INTO THESE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
7. THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:
  - A. RESIDENTIAL DRIVEWAYS, ON MINOR HIGHWAYS
  - B. COMMERCIAL DRIVEWAYS AND SUBROADS ON MINOR HIGHWAYS
  - C. ASPHALT CONCRETE (MIX IV), 6" ASPHALT CONCRETE BASE COURSE AND 12" SUBBASE, OR 2 1/2" ASPHALT CONCRETE AND 6" ASPHALT CONCRETE BASE COURSE.
  - D. 8" OF CLASS "A" CONCRETE REINFORCED WITH 6"x6" - W24 X W24 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY THE ENGINEER.
  - E. 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"x6" - W24 X W24 WIRE MESH ON 12" AGGREGATE SUBBASE, IF DEEMED NECESSARY BY THE ENGINEER.
  - F. CHANGED INTERSECTIONS ON MAJOR HIGHWAYS.
  - G. ASPHALT CONCRETE (MIX IV), 6" ASPHALT CONCRETE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 4" ASPHALT CONCRETE (MIX IV) AND 12" ASPHALT CONCRETE BASE COURSE.
  - H. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN THE HIGHWAY RIGHT-OF-WAY, EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DISTRICT ENGINEER.
  - I. COMPACTION TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, AS FOLLOWS:
    - A. SUBBASE - ONE (1) COMPACTION TEST PER LIFT PER 200 LINEAL FEET OF ROADWAY.
    - B. BASE COURSE - ONE (1) COMPACTION TEST PER LIFT PER 200 LINEAL FEET OF ROADWAY.
    - C. ONE (1) COMPACTION TEST PER LIFT PER 300 LINEAL FEET OF TRENCH.
    - D. A COPY OF THE TEST RESULTS SHALL BE SUBMITTED TO THE DISTRICT ENGINEER.
  - J. THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE CENTERLINE OF THE PROPOSED UTILITY TRENCH LOCUS BEFORE COMMENCING TRENCH EXCAVATION WORK, AND AFTER TRENCH HAS BEEN REPAIRED. PROFILES SHALL BE SUBMITTED TO THE DISTRICT ENGINEER AND SHALL BE USED TO VERIFY THE ROADWAY SURFACE HAS BEEN RESTORED TO ITS ORIGINAL CONDITION OR SMOOTHER.
  - K. THE DISTANCE FROM THE PAVED SURFACE TO THE TESTING EDGE OF A TEN-FOOT LONG STRAIGHT EDGE BETWEEN TWO POINTS SHALL NOT EXCEED TWENTY (20) FEET.
  - L. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE AND SAFE NON-SAND BRIDGING MATERIAL, INCLUDING SHORING, OVER TRENCHES IN PAVEMENT AREAS. THE BRIDGING SHALL BE ABLE TO SUPPORT ALL TYPES OF VEHICULAR TRAFFIC. BRIDGING MATERIAL SHALL NOT BE USED ON HIGH-SPEED ROADWAYS, WHICH ARE ROADS WITH A DESIGN SPEED OF 50 MPH OR GREATER. BRIDGING MATERIAL SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL IMMEDIATELY ADDRESS ANY COMPLAINTS.
  - M. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE USE AND THE DURATION OF USE OF BRIDGING MATERIALS. THE STATE MAY REQUIRE THE BACKFILLING AND PATCHES OF TRENCHES DUE TO THE EXCESSIVE USAGE OF STEEL PILES.
  - N. UNLESS OTHERWISE NOTED, NO TRENCH SHALL BE OPENED MORE THAN 300 FEET IN ADVANCE OF INSTALLED AND TESTED PIPELINE AND/OR DUCTLINE.
  - O. EXISTING DRAINAGE SYSTEMS SHALL BE FUNCTIONAL AT ALL TIMES.
  - P. THE CONTRACTOR SHALL EXERCISE CARE TO MINIMIZE DAMAGES TO EXISTING HIGHWAY IMPROVEMENTS. ALL DAMAGES SHALL BE REPAIRED BY THE CONTRACTOR, AT HIS EXPENSE, TO THE SATISFACTION OF THE DISTRICT ENGINEER.

**CONSTRUCTION WITHIN STATE RIGHT-OF-WAY NOTES (CONT.):**



15. APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ISSUANCE. THE PERMITTEE SHALL BE REQUIRED TO RESUBMIT THE CONSTRUCTION PLANS FOR THE DIVISIONS REVIEW AND RE-APPROVAL.
16. ALL REGULATORY, GUIDE, AND CONSTRUCTION SIGNS AND BARRICADES SHALL HAVE A HIGH-INTENSITY TYPE III OR IV REFRERENTIAL BACKGROUND.
17. THE CONTRACTOR SHALL INFORM THE STATE-HIGHWAYS PERMIT OFFICE (834-6712) AT LEAST TWO WEEKS PRIOR TO CLOSING ANY LANES.
18. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTIES USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORY CLOSURE.
19. WHERE PEDESTRIAN WALKWAYS EXIST THEY SHALL BE MAINTAINED IN A SAFE AND PASSABLE CONDITION, OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGES BETWEEN WALKWAYS AT INTERSECTIONS SHALL BE MAINTAINED. ALL WALKWAYS SHALL CONFORM TO ADA REQUIREMENTS.
20. THE CONTRACTOR SHALL REFERENCE TO THE SATISFACTION OF THE DISTRICT ENGINEER, ALL EXISTING TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES, AT HIS EXPENSE, UNLESS DIRECTED BY THE DISTRICT ENGINEER OR HIS REPRESENTATIVE.
21. THE CONTRACTOR SHALL EXERCISE CARE WHEN PERFORMING WORK IN OR ADJACENT TO THE STATE HIGHWAY RIGHT-OF-WAY. DAMAGES TO EXISTING FACILITIES SHALL BE IMMEDIATELY REPORTED TO THE RESPECTIVE UTILITY COMPANIES AND/OR CITY OR STATE AGENCIES. THE REPAIR WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
22. HIGHWAY LIGHTS SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. SHOULD WORK BE NECESSARY, THE CONTRACTOR SHALL NOTIFY THE STATE-HIGHWAYS HIGHWAY LIGHTING SUPERVISOR (831-3559), THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK.
23. THE CONTRACTOR SHALL NOTIFY THE CITY DEPARTMENT OF TRANSPORTATION SERVICES, TRAFFIC SIGNAL ENGINEER (784-8898), THREE (3) DAYS PRIOR TO ANY SIGNALIZED INTERSECTION WORK.
24. TRAFFIC SIGNALS SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. TEMPORARY OPERATIONAL MICROPAVE OR OTHER APPROVED DETECTION DEVICES SHALL BE INSTALLED THREE (3) WORKING DAYS PRIOR TO ANY SIGNALIZED INTERSECTION EXCAVATION WORK. ALL WORK SHALL BE DONE IN ACCORDANCE TO THE REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION SERVICES, CITY AND COUNTY OF HONOLULU, AND PAID FOR BY THE CONTRACTOR.
25. CONSTRUCTION OF THE PROJECT SHALL NOT AFFECT TRANSIT OPERATIONS. BUS ROUTES AND BUS STOPS SHALL REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. ANY WORK AFFECTING BUS OPERATIONS, ROUTES, OR STOPS MUST BE SUBMITTED TO DEPARTMENT OF TRANSPORTATION SERVICES, TRANSPORTATION MOBILITY DIVISION (DTSM) FOR REVIEW NO LESS THAN 30 DAYS PRIOR TO START DATE.
26. POINT OF CONTACT INFORMATION NOTIFICATION TO ALL PHONE NUMBERS AND EMAILS:
  - DISTRICT ENGINEER: THEBIS.D@HONOLULU.GOV, HAWAII@HONOLULU.GOV
  - SEAN BENNETT PHD@THEBIS.ORG, KOSHIA WAOALU@THEBIS.ORG, WALTER CRAIG@THEBIS.ORG
  - DAHU TRANSIT SERVICES - PARATRANSIT OPERATIONS: (808)768-9802, (808)768-9861, (808)764-5021.
  - TRACE COLE@HOB@THEBIS.ORG, RICHARD MOLE@THEBIS.ORG
27. THE PERMIT TO PERFORM WORK UPON STATE HIGHWAY MAY BE REVOKED BECAUSE OF DEFAULT IN ANY OF THE FOLLOWING, BUT NOT LIMITED TO, CONDITIONS:
  - A. WORK PERFORMED BEFORE OR AFTER PERMITTED HOURS.
  - B. FAILURE TO MAINTAIN ROADWAY SURFACES IN A SMOOTH AND SAFE CONDITION.
  - C. FAILURE TO CLEAN UP CONSTRUCTION DEBRIS GENERATED FROM PROJECT WORK.
  - D. FAILURE TO MAINTAIN HIGHWAY LIGHTS AND/OR TRAFFIC SIGNAL SYSTEMS.
  - E. FAILURE TO REPAIR DAMAGE TO PAVEMENT MARKINGS AND SIGNS.
  - F. FAILURE TO ADDRESS PUBLIC COMPLAINTS TO THE SATISFACTION OF THE DISTRICT ENGINEER.
28. THE CONTRACTOR SHALL NOTIFY THE STATE-HIGHWAYS PERMIT OFFICE AT DOT.HI.WAY.PERMIT@HAWAII.GOV OR (808)768-9802, IMMEDIATELY UPON RECEIVING ANY COMPLAINTS. THE CONTRACTOR SHALL IMMEDIATELY TAKE ALL NECESSARY MEASURES TO CORRECT ANY DEFICIENCIES. ANY BACKFILLING AND COMPACTING OF TRENCH MATERIAL, ANY PILING AND COMPACTING OF BASE COURSE MATERIAL, AND ANY PAVING OPERATIONS, ANY TRENCH RESTORATION WORK PERFORMED BY THE CONTRACTOR THAT IS NOT WITNESSED BY A STATE REPRESENTATIVE WILL BE REQUIRED TO BE REMOVED AND RESTORED WITH A STATE REPRESENTATIVE PRESENT. ALL RESTORATION WORK WILL BE AT THE CONTRACTOR'S EXPENSE.
29. TEMPORARY COLD MIX TRENCH PATCHES WILL BE PERMITTED IN ANY GIVEN AREA FOR A MAXIMUM DURATION OF TWO WEEKS, AND SHALL BE A MINIMUM OF 2 INCHES THICK. ALL TEMPORARY PATCHES SHALL BE PLACED OVER PROPERLY PREPARED AND COMPACTED BACKFILL AND BASE COURSE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY PATCHES AND TO MAKE REPAIRS TO UNSATISFACTORY PATCHES WITHIN 24 HOURS.
30. PLASTIC MARKING TAPE, PROVIDE PLASTIC MARKING TAPE, THAT IS AID AND ALUMINUM POLYETHYLENE FILM 6 INCHES WIDE WITH A MINIMUM THICKNESS OF 0.04 INCH. PROVIDE TAPE WITH A MINIMUM STRENGTH OF 1750 PSI LENGTHWISE AND 500-PSI CROSSWISE. MANUFACTURE TAPE WITH INTEGRAL WIRES. FOLL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN THE TAPE IS BURIED UP TO 3 FEET DEEP. MANUFACTURE TAPE SPECIFICALLY FOR MARKING AND LOCATING UNDERGROUND UTILITIES. PROVIDE THE METAL CORE OF THE TAPE WITH A MINIMUM STRENGTH OF 1750 PSI. PROVIDE THE TAPE WITH A CONTINUOUS PRINTED INSCRIPTION (CONFORM TO THE FOLLOWING TAPE COLOR AND BEAR A CONTINUOUS PRINTED INSCRIPTION DESCRIBING THE SPECIFIC UTILITY):
  - RED - ELECTRIC
  - YELLOW - GAS, OIL, DANGEROUS MATERIALS
  - ORANGE - TELEPHONE, TELEGRAPH, TELEVISION, POLICE, AND FIRE
  - BLUE - WATER SYSTEMS
  - GREEN - SEWER SYSTEMS
31. THE CONTRACTOR SHALL PROVIDE THE DISTRICT ENGINEER WITH AS-BUILT PLANS UPON COMPLETION OF THE WORK PURSUANT TO THE DISTRICT ENGINEER'S SIGN-OFF. THIS SHALL BE DONE PRIOR TO THE DEPARTMENT'S RELEASE OF THE PERFORMANCE BOND.
32. THE CONTRACTOR SHALL MAINTAIN A MINIMUM VERTICAL CLEARANCE OF ONE FOOT AND HORIZONTAL CLEARANCE OF TWO FEET BETWEEN DRAINAGE FACILITIES AND OTHER UTILITIES OR OBSTRUCTIONS ONE FOOT AND TWO FEET RESPECTIVELY, OR IN ACCORDANCE WITH THE APPLICABLE UTILITY AGENCIES WHENEVER IS GREATER.

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) WITHIN STATE HIGHWAY RIGHT-OF-WAY NOTES:**

1. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE PERMIT (NPDES) FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY. THIS IS AVAILABLE AT THE QUALITY CONTROL OFFICE AT 727 KAKOI STREET, DUE TO POTENTIAL COST IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THESE REQUIREMENTS.
2. THE CONTRACTOR SHALL COMPLETE AND SUBMIT A CONTRACTOR'S CERTIFICATION OF NPDES COMPLIANCE, INCLUDING COMPLIANCE WITH THE BEST MANAGEMENT PRACTICE (BMP) CHECKLIST, TO THE QUALITY CONTROL OFFICE AT 727 KAKOI STREET, PRIOR TO COMMENCING WORK UPON STATE HIGHWAYS. DUE TO POTENTIAL TIME IMPACTS ON PREVIEWING BMPs, THE CONTRACTOR NEEDS TO ALLOW ENOUGH TIME FOR THE APPROVAL PROCESS.
3. THE CONTRACTOR SHALL MEET APPLICABLE CONDITIONS DESCRIBED IN THE CURRENT HAWAII REVISED STATUTES CONCERNING CONSTRUCTION BEST MANAGEMENT PRACTICES (BMP) CHECKLIST, "CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL" IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMPs) FOR THE PROJECT, IF THERE ARE ANY CONFLICTS BETWEEN THE TWO DOCUMENTS, THEN THE CONDITIONS IN THE HAR 1-56 SHALL GOVERN.
4. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES FOR SOIL EROSION STANDARDS AND GUIDELINES FOR THE PROJECT".
5. PLEASE BE ADVISED THAT NPDES REQUIREMENTS FOR PERMIT PROJECTS WITHIN STATE HIGHWAY RIGHT-OF-WAY ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**EROSION CONTROL BEST MANAGEMENT PRACTICES NOTES:**

1. EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO START OF PROJECT AND BE MAINTAINED UNTIL COMPLETION OF PROJECT.
2. CONTRACTOR TO PERMANENTLY INSPECT SILL FENCE, STABILIZED CONSTRUCTION ENTRANCE, CATCH BASIN AND INLET FILTERS, ESPECIALLY DURING HEAVY RAINFALL. CONTRACTOR SHALL ALSO ENSURE DRAINAGE THROUGH FILTER MATERIALS IS MAINTAINED.
3. THE FINAL LIFT OF EACH DAY'S WORK SHALL BE COMPACTED TO PREVENT EROSION OF FILL MATERIAL.
4. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF ROADWAYS FROM MUD, DIRT, AND DEBRIS. THE CONTRACTOR SHALL ENSURE ALL TYPES OF CONSTRUCTION VEHICLES ARE PROPERLY CLEANED OFF SO THAT DIRT OR DEBRIS IS NOT TRANSFERRED TO THE ROADWAY SURFACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACCEPTABLE UNLESS THE RUNOFF IS CONTAINED AND DOES NOT ENTER THE STORM DRAIN SYSTEM OR ON TO THE STATES HIGHWAY.
5. THE CONTRACTOR AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS (ADJACENT RESIDENCES) FREE FROM DUST NUISANCE.
6. STOCKPILING OF MATERIALS WITHIN THE ROADWAY PAVEMENT IS PROHIBITED.

**CML NOTES - 2**

**KALAEOA B907 RESTORATION**

DESIGN AND PROJECT MANAGER: BRUCE KALELOA, HAWAII

DATE: 03/27/2024

100% FINAL DESIGN

DATE: 03/27/2024

100% FINAL DESIGN

PROJECT NO: CA-202209-C

PROJECT NO: 17501101-01

PROJECT NO: 17501101-01

PROJECT NO: 17501101-01

DATE: 03/27/2024

100% FINAL DESIGN

PROJECT NO: CA-202209-C

PROJECT NO: 17501101-01

PROJECT NO: 17501101-01

PROJECT NO: 17501101-01



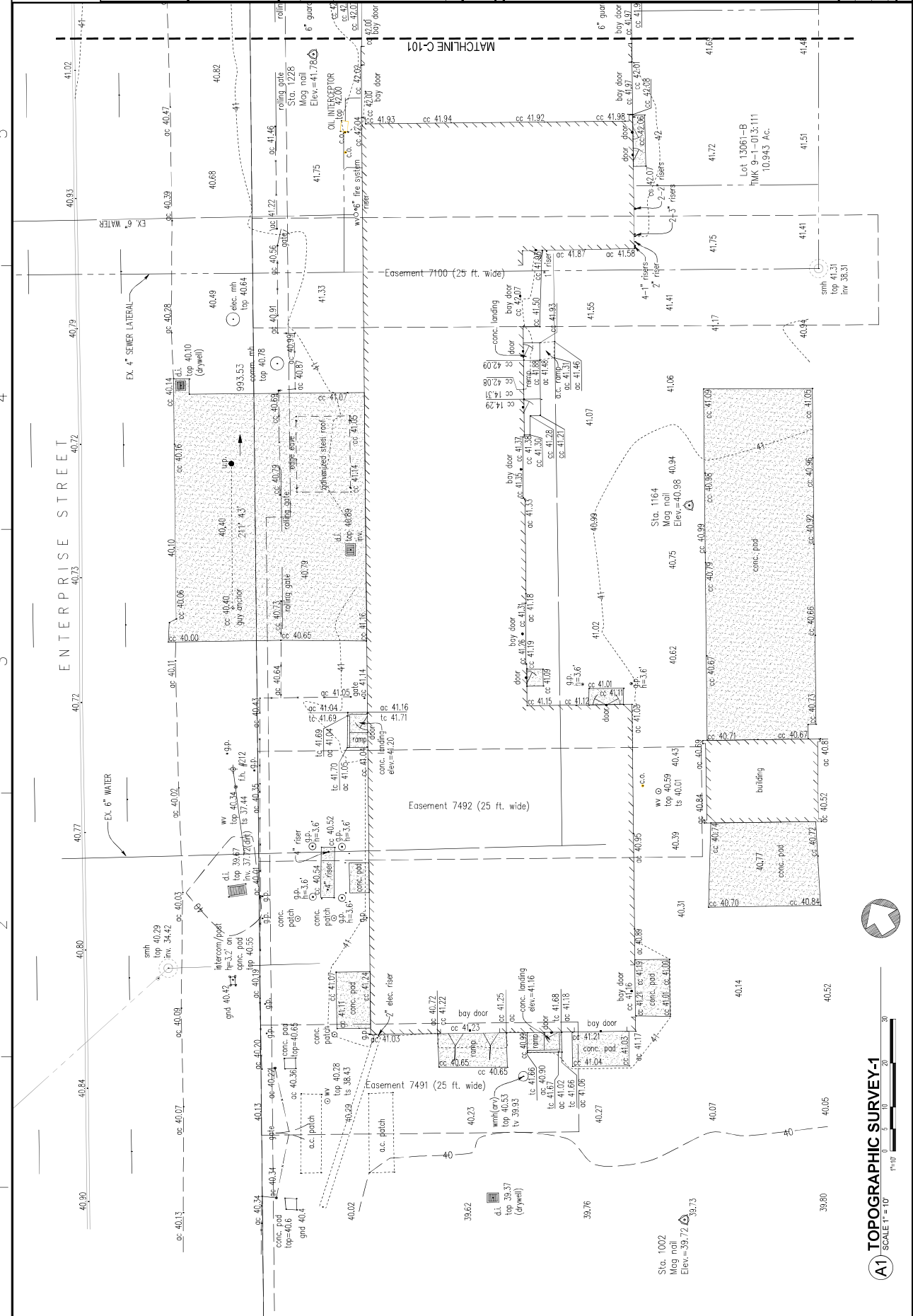
DATE	DESCRIPTION
03/22/2024 <td>100% FINAL DESIGN</td>	100% FINAL DESIGN

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGEMENT BRANCH  
KALELOA, HAWAII

TOPOGRAPHIC SURVEY - 1  
KALAEOA B90T RESTORATION

PROJECT NUMBER: CA-202209-C  
SHEET: 5 OF 5

DATE OF DRAWN: 03/22/2024  
SCALE: 1" = 10'  
PROJECT: CA-202209-C  
SHEET: 5 OF 5



**(A1) TOPOGRAPHIC SURVEY-1**  
SCALE 1" = 10'  
1"=10' 0 5 10 20 30

5 4 3 2 1  
D C B A  
C-100



DATE	DESCRIPTION

100% FINAL DESIGN  
DATE: 03/22/2024

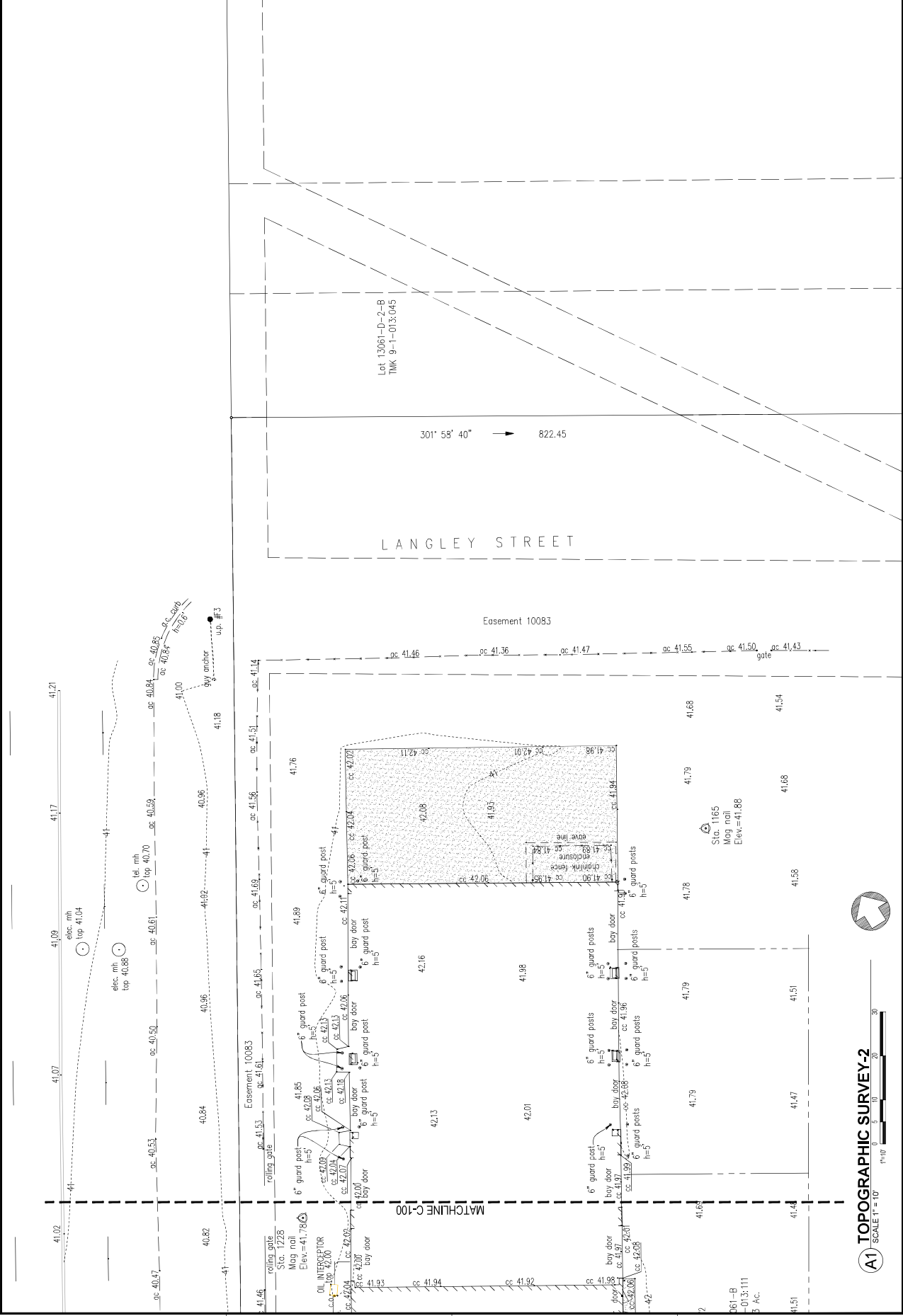
HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGEMENT BRANCH  
KALELOA, HAWAII  
BUILDING 907  
FEDERAL PROJECT NO. CA-202209-C  
PROJECT TITLE: TOPOGRAPHIC SURVEY - 2  
SHEET NO. 6 OF 6

STATE OF HAWAII  
DEPARTMENT OF DEFENSE  
SCALE: 1" = 10'  
DATE: 03/22/2024

C-101

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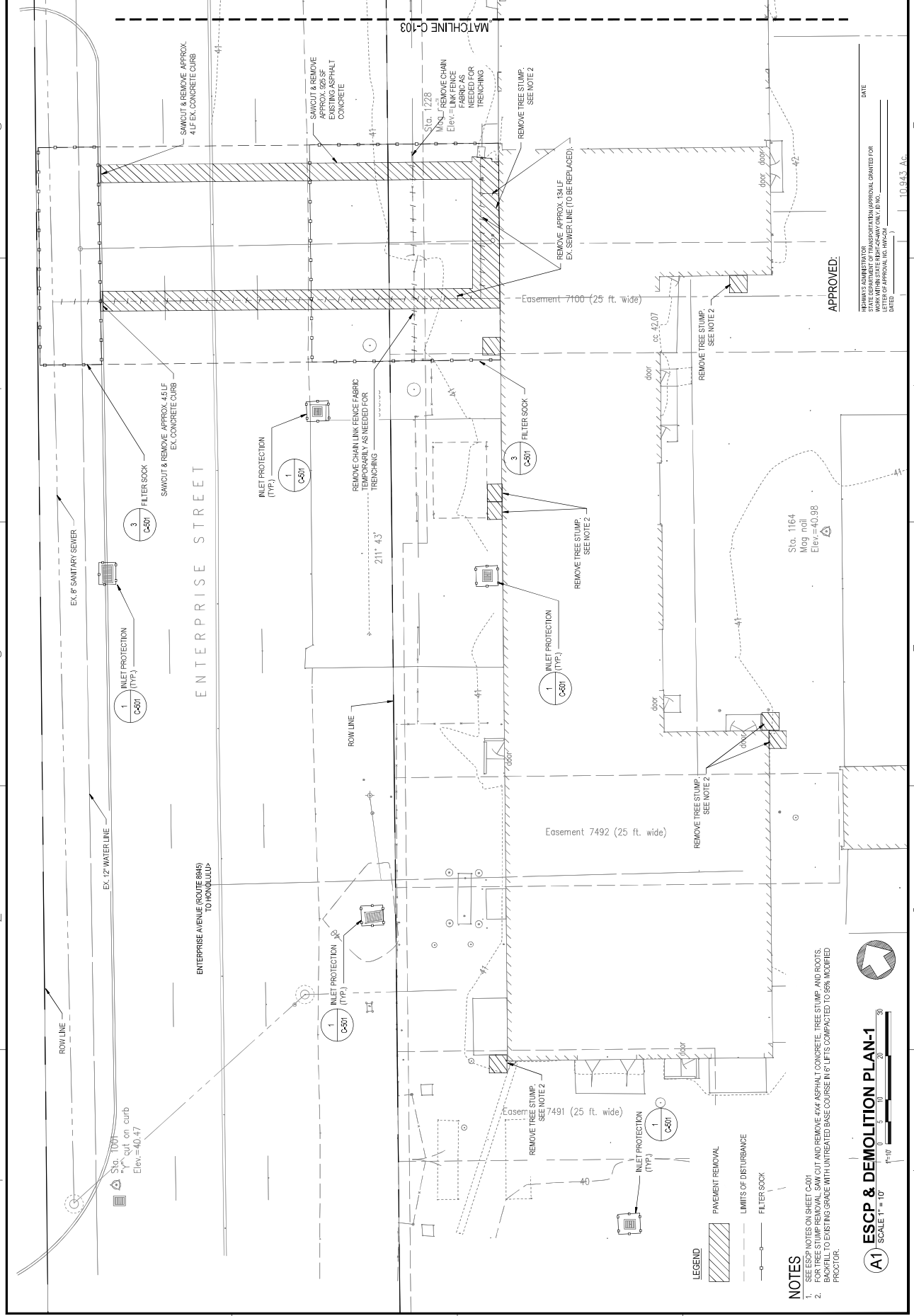
**(A1) TOPOGRAPHIC SURVEY-2**  
1"=10'  
0 5 10 20 30



NO.	DATE	DESCRIPTION

DATE OF DRAWING: 03/22/2024  
 100% FINAL DESIGN  
 PROJECT: ESCP & DEMOLITION PLAN-1  
 BUILDING: KALAEOA B90T RESTORATION  
 SHEET: 3 OF 4  
 C-102

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 PROJECT MANAGER OFFICE  
 BUILDING 90T  
 SCALE: 1" = 10'



- NOTES**
- SEE ESCP NOTES ON SHEET C-011.
  - FOR TREE STUMP REMOVAL SAW-CUT AND REMOVE 4x4 ASPHALT CONCRETE, TREE STUMP AND ROOTS. BACKFILL TO EXISTING GRADE WITH UNTREATED BASE COURSE IN 6" LIFTS COMPACTED TO 95% MODIFIED PROCTOR.

**LEGEND**

- PAVEMENT REMOVAL
- LIMITS OF DISTURBANCE
- FILTER SOCK

**ESCP & DEMOLITION PLAN-1**  
 SCALE 1" = 10'  
 1" = 10'



APPROVED:

HAWAII'S ADMINISTRATOR  
 STATE DEPARTMENT OF TRANSPORTATION (APPROVAL GRANTED FOR THIS PROJECT ONLY. IF NO LETTER OF APPROVAL, NO WORK SHALL BE PERMITTED.)  
 DATE: \_\_\_\_\_

10,943.66'

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NO.	DESCRIPTION	DATE	APP'D.

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]

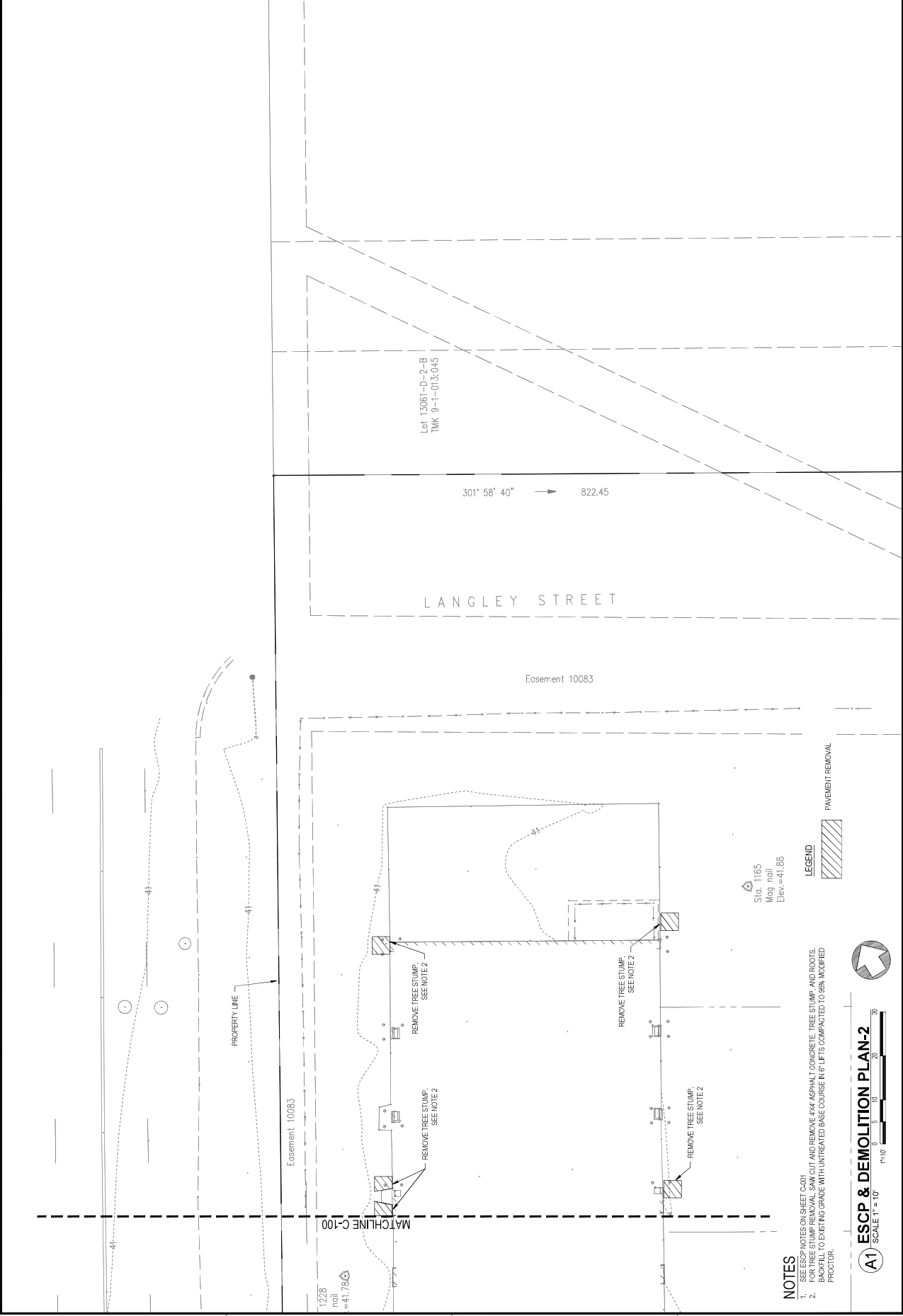
HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 BUILDING 90T  
 ESCP & DEMOLITION PLAN-2  
 KALAELOA B90T RESTORATION

STATE OF HAWAII  
 PROJECT MANAGEMENT OFFICE  
 FEDERAL PROJECT NO. CH-202209-C  
 FEDERAL PROJECT TITLE: TSHEDDIPAL  
 SHEET: 8  
 TOTAL SHEETS: 8  
 SCALE: 1" = 10'

C-103

1 2 3 4 5

1 2 3 4 5



- NOTES**
- SEE ESCP NOTES ON SHEET C-001.
  - FOR TREE STUMP REMOVAL SAW CUT AND REMOVE 4x4 ASPHALT CONCRETE, TREE STUMP, AND ROOTS. BACKFILL TO EXISTING GRADE WITH UNTREATED BASE COURSE IN 6" LIFTS COMPACTED TO 95% MODIFIED PROCTOR.

(A1) ESCP & DEMOLITION PLAN-2  
 SCALE 1" = 10'  
 1"=10' 0 5 10 20 30

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 nail  
 = 41.78'







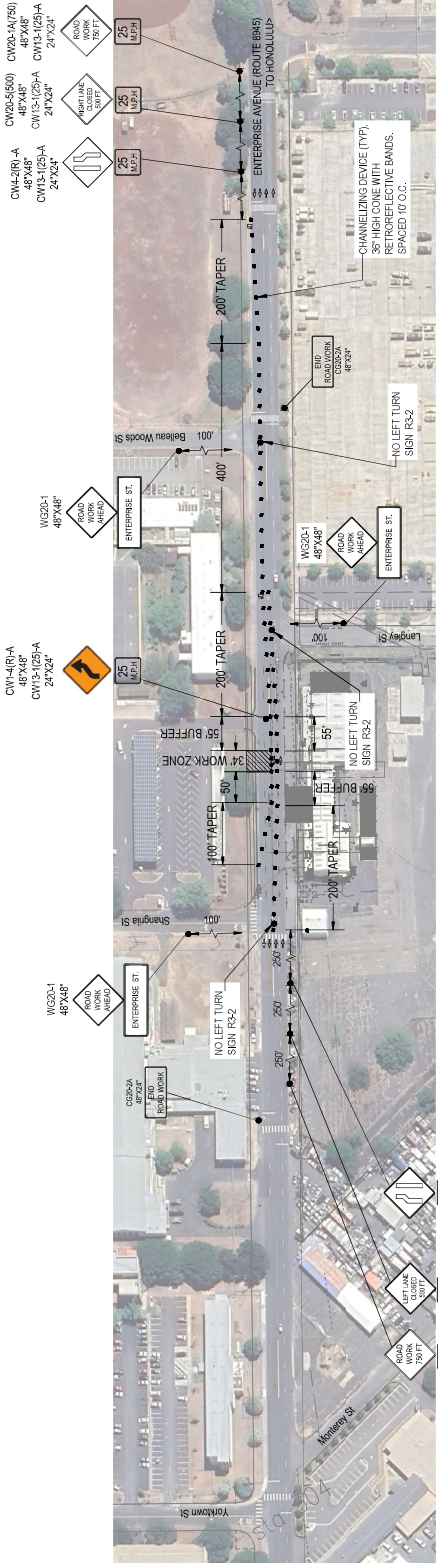
NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
**KALAELOA B90T RESTORATION**  
 TRAFFIC CONTROL PLAN

SHEET NO. 1 OF 47  
 PROJECT NO. CA-2022B-C  
 FEDERAL PROJECT NO. TSH001001  
 SHEET: N E

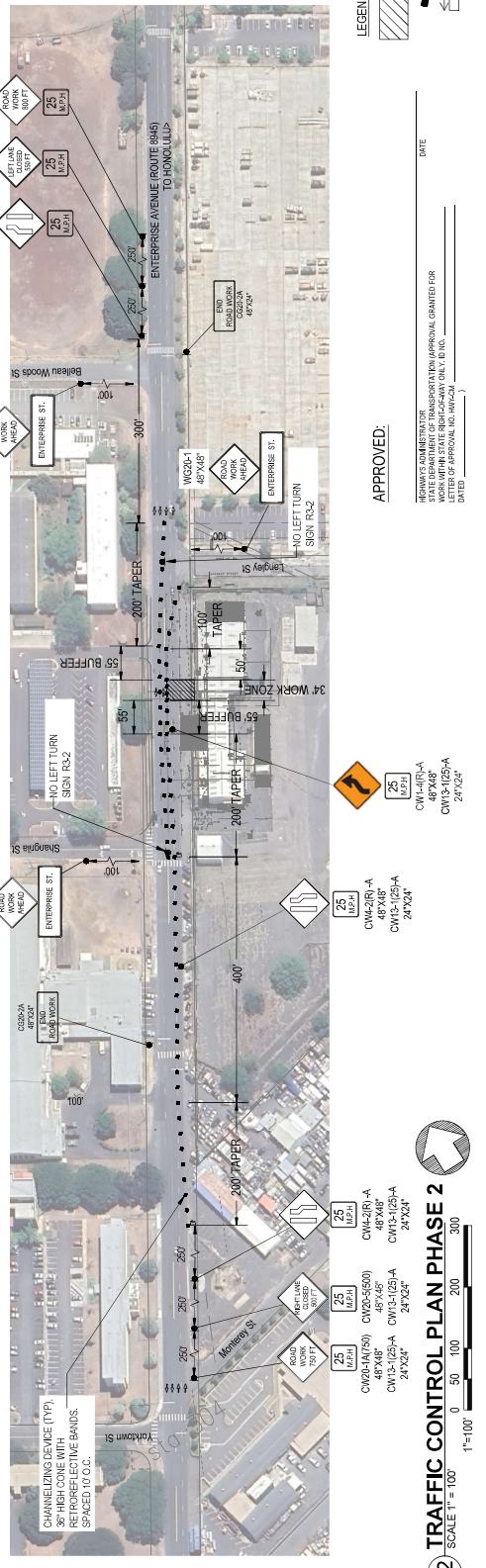
C-105



**GENERAL NOTES FOR TRAFFIC CONTROL PLAN:**

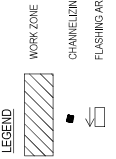
1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
10. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL CONSTRUCTION WARNING SIGNS AND TRAFFIC CONTROL DEVICES AND SHALL PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
11. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
12. ALL WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE COMPLIANT WITH CHAPTER 6 OF THE MUTCD.

**A1** TRAFFIC CONTROL PLAN PHASE 1  
 SCALE 1" = 100'

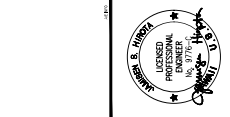


**A2** TRAFFIC CONTROL PLAN PHASE 2  
 SCALE 1" = 100'

APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
 HAWAII'S SOLEMBLY DESIGNATED PROFESSIONAL ENGINEER (APPROVAL GRANTED FOR WORK WITHIN STATE RIGHT-OF-WAY ONLY. I.D. NO. \_\_\_\_\_)  
 DATE OF APPROVAL (DD-MMM-YY): \_\_\_\_\_





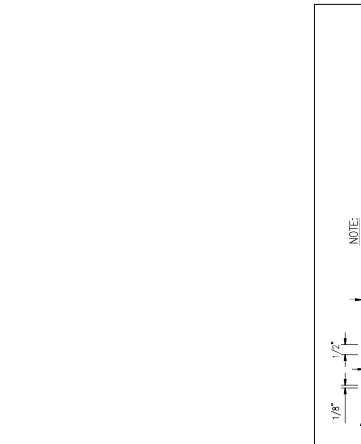


NO.	DATE	DESCRIPTION

DATE OF ISSUE: 03/22/2024  
 100% FINAL DESIGN

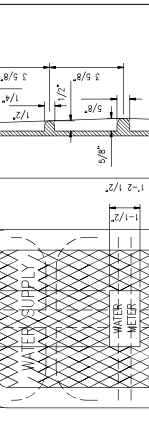
HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 BUILDING 907  
 KALAELOA B907 RESTORATION  
 CML DETAILS - 1

STATE OF HAWAII  
 PROJECT NO. CA-202209-C  
 FEDERAL PROJECT NO. TSHD121A  
 SHEET NO. 11 OF 12  
 C-501

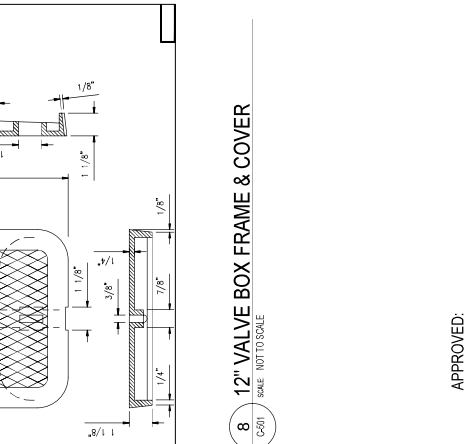


**1 PAVEMENT INLET PROTECTION**  
 SCALE: NOT TO SCALE

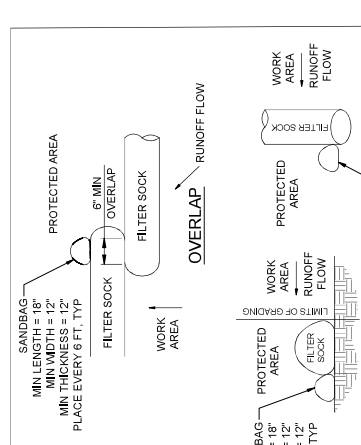
NOTE: STAKING NOT REQUIRED.  
 1. FILTER SOCKS SHALL BE FILLED WITH MULCH. COMPOST SHALL NOT CONTAIN BIOSOLIDS AND SHOULD BE CONSISTENT WITH EPA GUIDELINES.  
 2. PLACE REMOVE SEDIMENT WHEN DEPTH REACHES 1/3 THE HEIGHT OF THE FILTER SOCK.  
 3. PLACE REMOVE SEDIMENT AFTER PERMANENT STABILIZATION OF WORK AREA.



**2 CONCRETE CURB**  
 SCALE: NOT TO SCALE

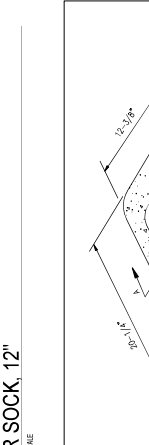


**3 FILTER SOCK, 12"**  
 SCALE: NOT TO SCALE

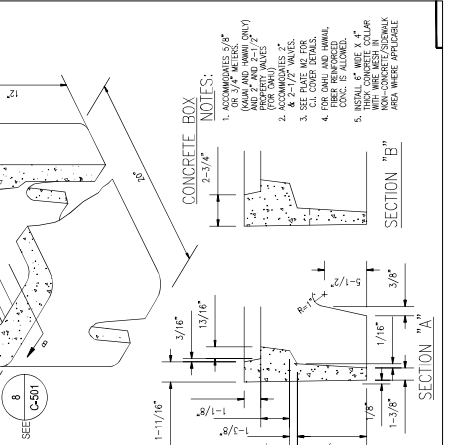


**4 BACKFLOW PREVENTER INSTALLATION**  
 SCALE: NOT TO SCALE

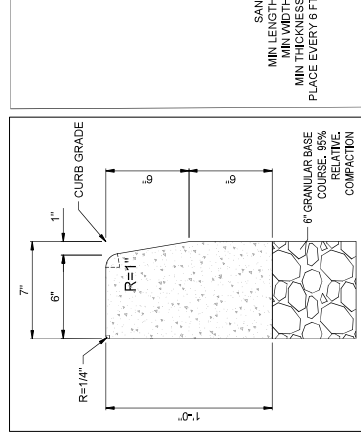
NOTES:  
 1. ANY CONNECTIONS OR TEES BETWEEN METER AND BACKFLOW PREVENTION ASSEMBLY MUST BE INSTALLED AFTER THE METER.  
 2. A 1/2" DIA. BALL VALVE IS REQUIRED TO BE INSTALLED UPSTREAM OF THE BACKFLOW PREVENTION ASSEMBLY.  
 3. THE TYPE OF BACKFLOW PREVENTION ASSEMBLY SHALL BE DETERMINED BY THE MANAGER.  
 4. AT NO TIME SHALL THE BOTTOM OF THE BACKFLOW PREVENTION ASSEMBLY BE LESS THAN 12" ABOVE GROUND, FLOOR, OR FLOOD LEVEL.  
 5. THE BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED AFTER THE WATER METER PRIOR TO ANY TEES AND BRANCHES.  
 6. METERS OR VALVES SHALL BE INSTALLED IN A TRENCH WITH A MINIMUM OF 12" OF COVER ABOVE THE WATER METER AND BACKFLOW PREVENTION ASSEMBLY TO AVOID FEDERAL CROSS CONNECTION.  
 7. METERS OR VALVES SHALL BE INSTALLED PRIOR TO ISSUANCE OF WATER CONNECTION PERMITS.  
 8. REFER TO DIVISION 100, SECTION 102.4 FOR ADDITIONAL REQUIREMENTS AND TYPE OF BACKFLOW PREVENTER NEEDED.



**5 CONCRETE BOX**  
 SCALE: NOT TO SCALE

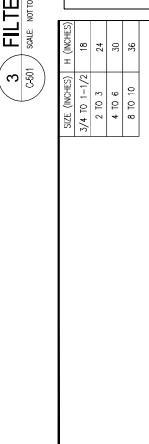


**6 VALVE BOX INSTALLATION**  
 SCALE: NOT TO SCALE

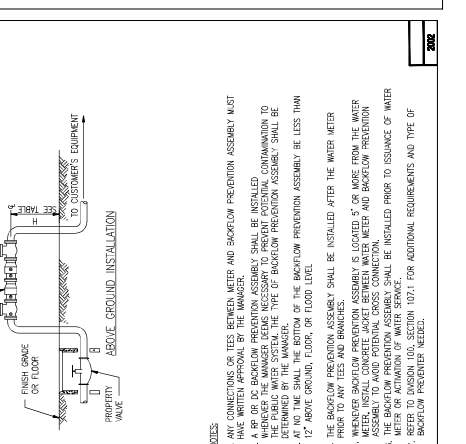


**7 TYPE III METER FRAME & GRATE, CAST IRON**  
 SCALE: NOT TO SCALE

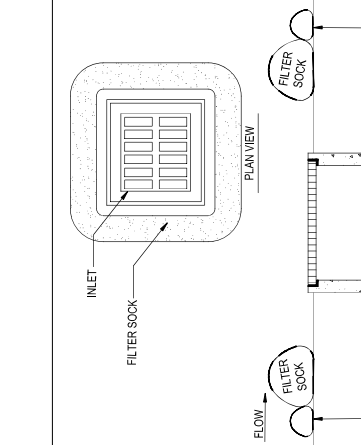
NOTE: DIMENSIONS ARE IN FEET AND 1/8" OR FRACTIONS THEREOF.  
 1/2" DIA. BALL VALVE SHALL BE INSTALLED UPSTREAM OF THE WATER METER AND BACKFLOW PREVENTION ASSEMBLY TO AVOID FEDERAL CROSS CONNECTION.  
 METERS OR VALVES SHALL BE INSTALLED PRIOR TO ISSUANCE OF WATER CONNECTION PERMITS.  
 REFER TO DIVISION 100, SECTION 102.4 FOR ADDITIONAL REQUIREMENTS AND TYPE OF BACKFLOW PREVENTER NEEDED.



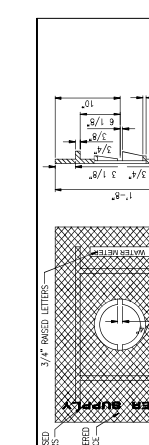
**8 12" VALVE BOX FRAME & COVER**  
 SCALE: NOT TO SCALE



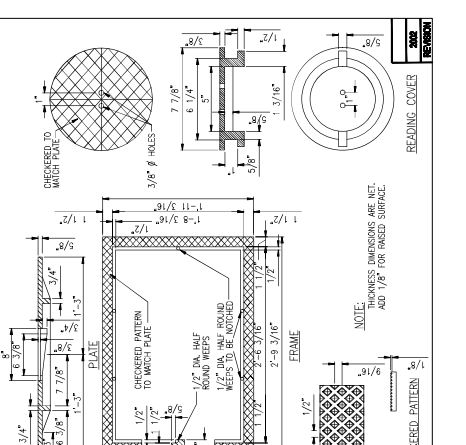
**9 BACKFLOW PREVENTER INSTALLATION**  
 SCALE: NOT TO SCALE



**10 PAVEMENT INLET PROTECTION**  
 SCALE: NOT TO SCALE



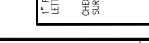
**11 FILTER SOCK, 12"**  
 SCALE: NOT TO SCALE



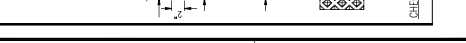
**12 CONCRETE BOX**  
 SCALE: NOT TO SCALE



**13 BACKFLOW PREVENTER INSTALLATION**  
 SCALE: NOT TO SCALE



**14 CONCRETE BOX**  
 SCALE: NOT TO SCALE



**15 VALVE BOX INSTALLATION**  
 SCALE: NOT TO SCALE



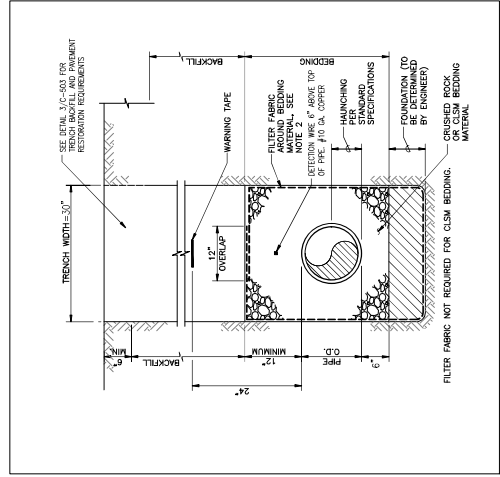
**16 TYPE III METER FRAME & GRATE, CAST IRON**  
 SCALE: NOT TO SCALE



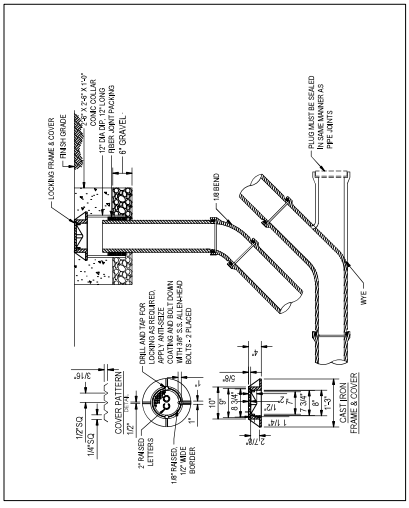
**17 12" VALVE BOX FRAME & COVER**  
 SCALE: NOT TO SCALE



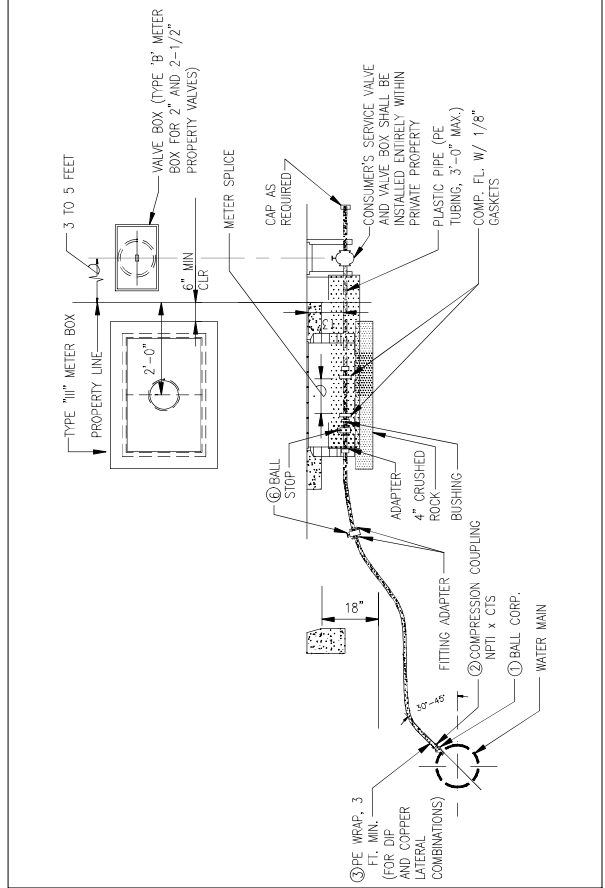
**18 BACKFLOW PREVENTER INSTALLATION**  
 SCALE: NOT TO SCALE



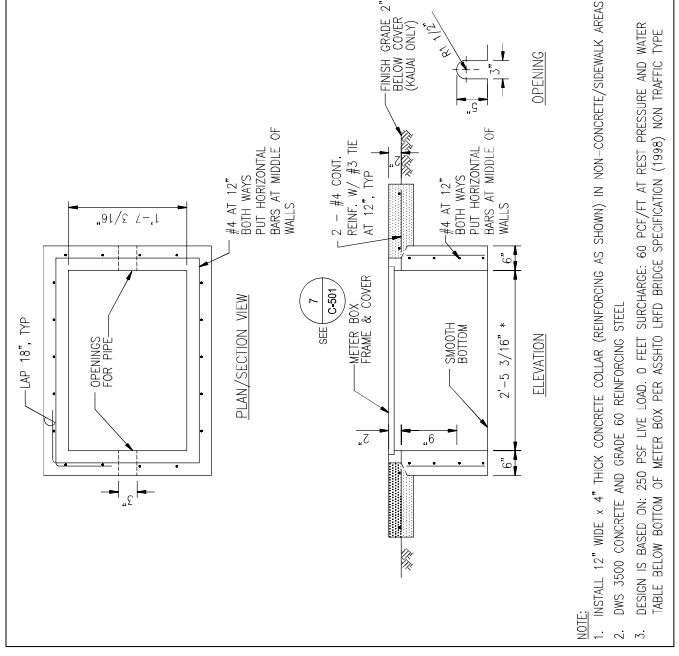
**1 SEWER TRENCH**  
SCALE: 1/4"=1'-0"



**2 SEWER CLEANOUT**  
SCALE: 1/4"=1'-0"



**3 COPPER SERVICE LATERAL FOR TYPE III METER BOX**  
SCALE: 1/4"=1'-0"



**5 METER BOX TYPE III**  
SCALE: 1/4"=1'-0"

- NOTE:
1. INSTALL 12" WIDE x 4" THICK CONCRETE COLLAR (REINFORCING AS SHOWN) IN NON-CONCRETE/SIDEWALK AREAS
  2. DWS 3500 CONCRETE AND GRADE 60 REINFORCING STEEL
  3. DESIGN IS BASED ON: 250 PSF LIVE LOAD, 0 FEET SURCHARGE, 60 PCF/FT AT REST PRESSURE AND WATER TABLE BELOW BOTTOM OF METER BOX PER ASSHTO LRFD BRIDGE SPECIFICATION (1998) NON TRAFFIC TYPE

APPROVED:

DATE: \_\_\_\_\_  
 STATE DEPARTMENT OF TRANSPORTATION (APPROVAL GRANTED FOR THIS PROJECT ONLY) (SEE LETTER OF APPROVAL FOR APPROVAL DATE)





NO.	DESCRIPTION	DATE	APP.

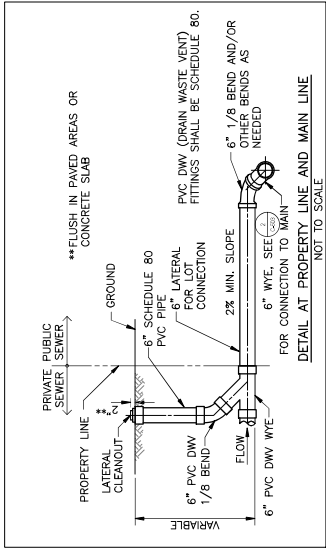
100% FINAL DESIGN  
 DATE: 03/22/2024  
 DRAWN BY: JBA

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

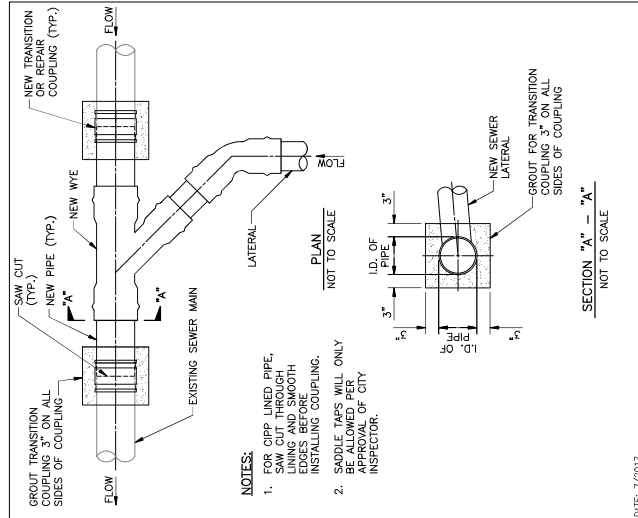
**KALAELOA B90T RESTORATION**  
 CIVIL DETAILS - 3

BUILDING 90T  
 PROJECT MANAGER OFFICE  
 SHEET NO. 33  
 TOTAL SHEETS 42  
 C-503

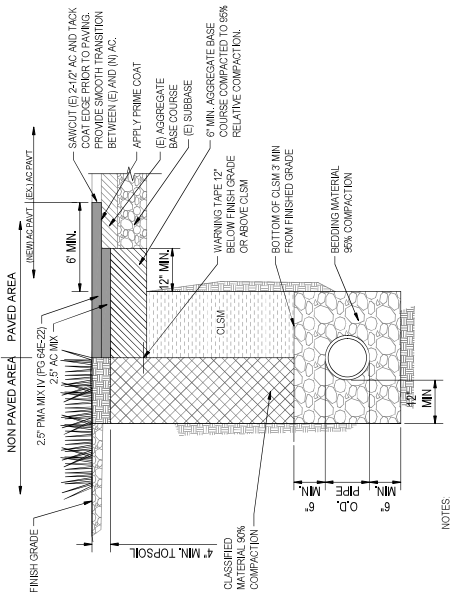
1 2 3 4 5



**1 SEWER CLEANOUT AT PROPERTY LINE**  
 SCALE: NOT TO SCALE



**2 SEWER LATERAL CONNECTION TO MAIN**  
 SCALE: NOT TO SCALE



NOTES:

1. TRENCH WALL SLOPES WILL VARY WITH SOIL STRENGTH AND CHARACTERISTICS. SLOPE TO CONFORM TO SAFETY STANDARDS.
2. ON-SITE NATIVE MATERIAL MAY BE USED IN PRIVATE TRAFFIC AREA FOR CLASSIFIED MATERIAL EXCEPT IF IT IS FREE OF ORGANIC MATERIAL.
3. PAVEMENT STRUCTURE SHALL BE RESTORED TO EQUAL OR BETTER CONDITION.
4. CONSTRUCT THE TRENCH RESTORATION WITHIN THE RIGHT OF WAY IN ACCORDANCE WITH THE HAWAIIAN ROAD AND BRIDGE CONSTRUCTION AND SPECIAL PROVISIONS AND THE SPECIFICATION OF INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS. ALL WORK PERFORMED WITHIN THE RIGHT OF WAY SHALL BE SUBJECT TO INSPECTION BY THE STATE AND SHALL BE TO THE STATE'S SATISFACTION.

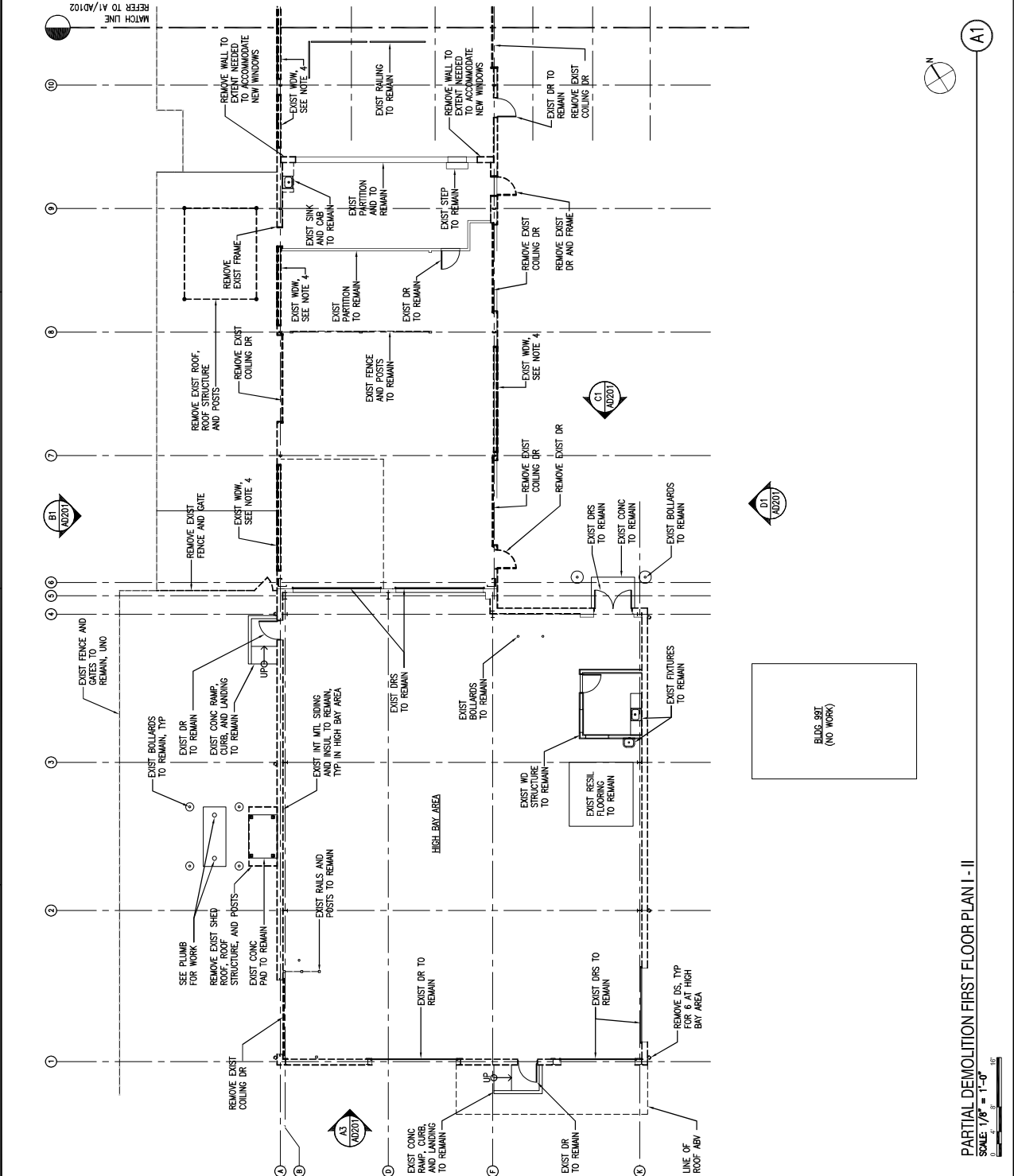
**3 WATERLINE PIPE ZONE & TRENCH RESTORATION**  
 SCALE: MTS

DATE: 7/2017

CSB SCALE NOT TO SCALE



- DEMOLITION NOTES**
1. REMOVE EXIST A/C UNITS, TYP.
  2. REMOVE EXIST EXTERIOR MTL SIDING, TYP.
  3. REMOVE EXIST EXTERIOR FINISHES, TYP.
  4. REMOVE EXIST WINDOW AND MTL FRAMES, UNDO.
  5. REMOVE EXIST CONDUIT, PHES, MECH AND ELEC EQUIPMENT, LIGHTS, TO ACCOMMODATE METAL SIDING WORK.
  6. REMOVE ALL VEGETATION AGAINST THE EXTERIOR WALLS OF THE BUILDING. REMOVE EXIST METAL SIDING WORK. SEE CIVIL FOR TREE STRIP RELOCATION.
  7. REMOVE EXIST GUTTERS AND DS, TYP. SALVAGE EXIST SPLASH BLOCKS FOR REINSTALLATION.



**PARTIAL DEMOLITION FIRST FLOOR PLAN I - II**  
SCALE: 1/8" = 1'-0"



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STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

100% FINAL DESIGN  
 SHEET NO. AD102  
 DATE: 03/27/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 APPROVED BY: [Signature]

NO.	DESCRIPTION	DATE	BY

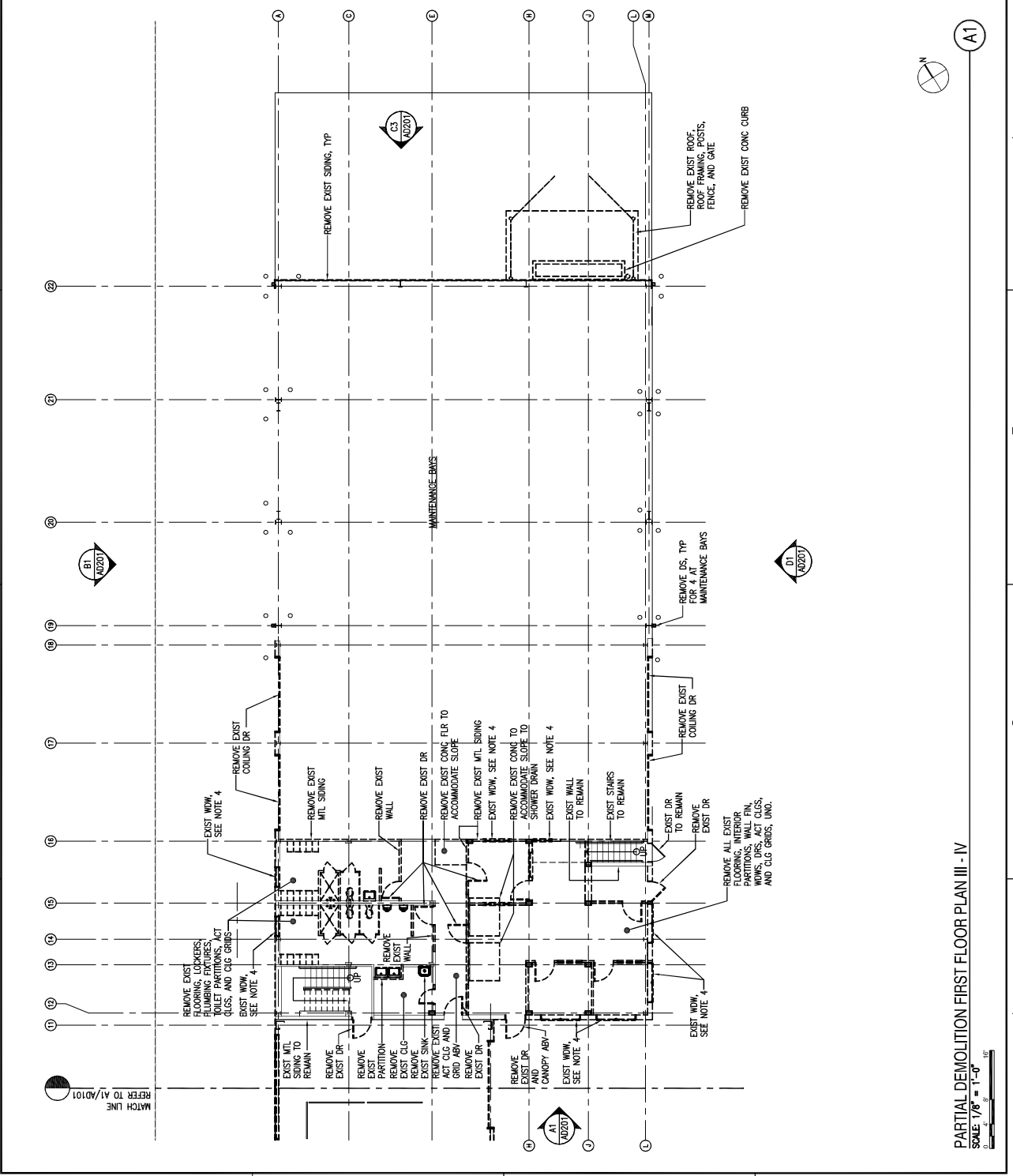
PARTIAL DEMOLITION FIRST FLOOR PLAN III - IV

BUILDING 90T  
 FACILITY MANAGEMENT OFFICE  
 2024-2029-C  
 FEDERAL PROJECT NO. 24000001  
 SHEET 15 OF 15

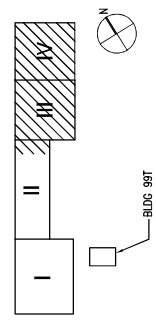
AD102

DEMOLITION NOTES

1. REMOVE EXIST A/C UNITS, TYP
2. REMOVE EXIST MTL SIDING, TYP
3. REMOVE EXIST WINDS AND WINDOW FRAMES, UNO
4. REMOVE EXIST CONDUIT, PIPES, MECH AND ELEC EQUIPMENT, LIGHTS, TO ACCOMMODATE METAL SIDING WORK
5. REMOVE ALL VEGETATION AGAINST THE EXTERIOR WALLS OF THE BUILDING TO ACCOMMODATE METAL SIDING WORK. SEE CIVIL FOR TREE STUMP REMOVAL
6. REMOVE EXIST GUTTERS AND DS, TYP. SALVAGE EXIST SPLASH BLOCKS FOR REINSTALLATION



KEY PLAN



- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS

PARTIAL DEMOLITION FIRST FLOOR PLAN III - IV  
 SCALE: 1/8" = 1'-0"





STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

100% FINAL DESIGN  
 DATE: 03/22/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 DATE: 03/22/2024

NO.	DATE	DESCRIPTION

DEPARTMENT OF DEFENSE  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

DEMOLITION UPPER FLOOR PLAN

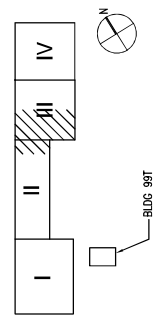
AS NOTED  
 BUILDING 90T  
 FEDERAL PROJECT NO. CA-202209-C  
 SHEET NO. 14/0001/01  
 OF 14

AD103

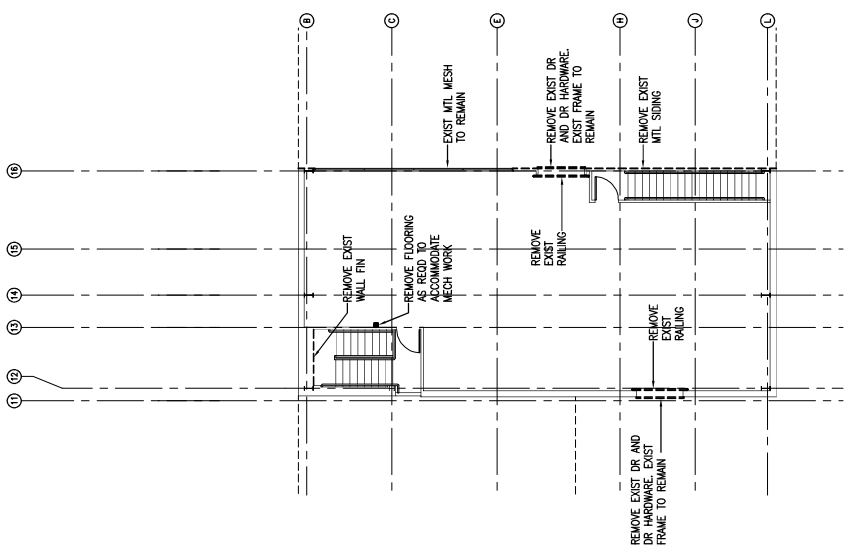
DEMOLITION NOTES

1. REMOVE EXIST A/C UNITS, TYP.
2. REMOVE EXISTOR MTL SIDING, TYP.
3. REMOVE EXISTOR DOORS AND WINDOW FRAMES, UNO.
4. REMOVE EXISTING LIGHTS, MECH AND ELEC EQUIPMENT, LIGHTS, TO ACCOMMODATE METAL SIDING WORK.
5. REMOVE ALL VEGETATION AGAINST THE EXTERIOR WALLS OF THE BUILDING. REMOVE EXISTOR METAL SIDING WORK. SEE CIVIL FOR DETAILS.
6. REMOVE EXIST GUTTERS AND DS, TYP. SALVAGE EXIST SPLASH BLOCKS FOR REINSTALLATION.

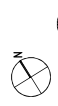
KEY PLAN



- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS



DEMOLITION UPPER FLOOR PLAN  
 SCALE: 1/8" = 1'-0"



A3





**DEMOLITION EXTERIOR ELEVATION NOTES**

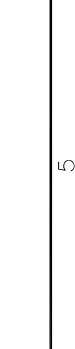
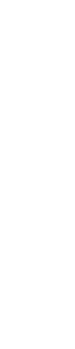
1. REMOVE ALL EXIST ROOFING, TYP
2. REMOVE ALL EXIST GUTTERS AND DS, TYP FOR 3
3. REMOVE ALL EXIST MIL SIDING, TYP
4. REMOVE ALL EXIST WINDOWS, TYP
5. REMOVE ALL EXIST DOORS, TYP

NO.	DATE	DESCRIPTION



100% FINAL DESIGN  
 DATE: 03/22/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 PROJECT NO.: CA-202209-C  
 SHEET NO.: 14/20/01-A  
 SHEET OF: 21

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII  
 BUILDING 90T  
 DEMOLITION EXTERIOR ELEVATIONS  
 STATE OF HAWAII  
 ARCHITECT WORKSHEET OFFICE  
 FEDERAL PROJECT NO. CA-202209-C  
 SHEET NO. 14/20/01-A  
 SHEET OF 21  
**AD201**



**KALAELOA B90T RESTORATION**  
PARTIAL FIRST FLOOR PLAN I

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGEMENT SERVICES  
KALAELOA, HAWAII

STATE OF HAWAII  
PLANNING AND PROJECT MANAGEMENT OFFICE

BUILDING 90T

SCALE: AS NOTED

DATE: 08/22/2024  
PROJECT NO.: CA-202209-C  
FEDERAL PROJECT NO.: 15H0001A  
SHEET NO.: 101 OF 101

100% FINAL DESIGN

DATE: 08/22/2024  
DESIGNER: [Redacted]  
CHECKER: [Redacted]  
DRAWN BY: [Redacted]

DATE: 08/22/2024  
PROJECT NO.: CA-202209-C  
FEDERAL PROJECT NO.: 15H0001A  
SHEET NO.: 101 OF 101

**FLOOR PLAN GENERAL NOTES**

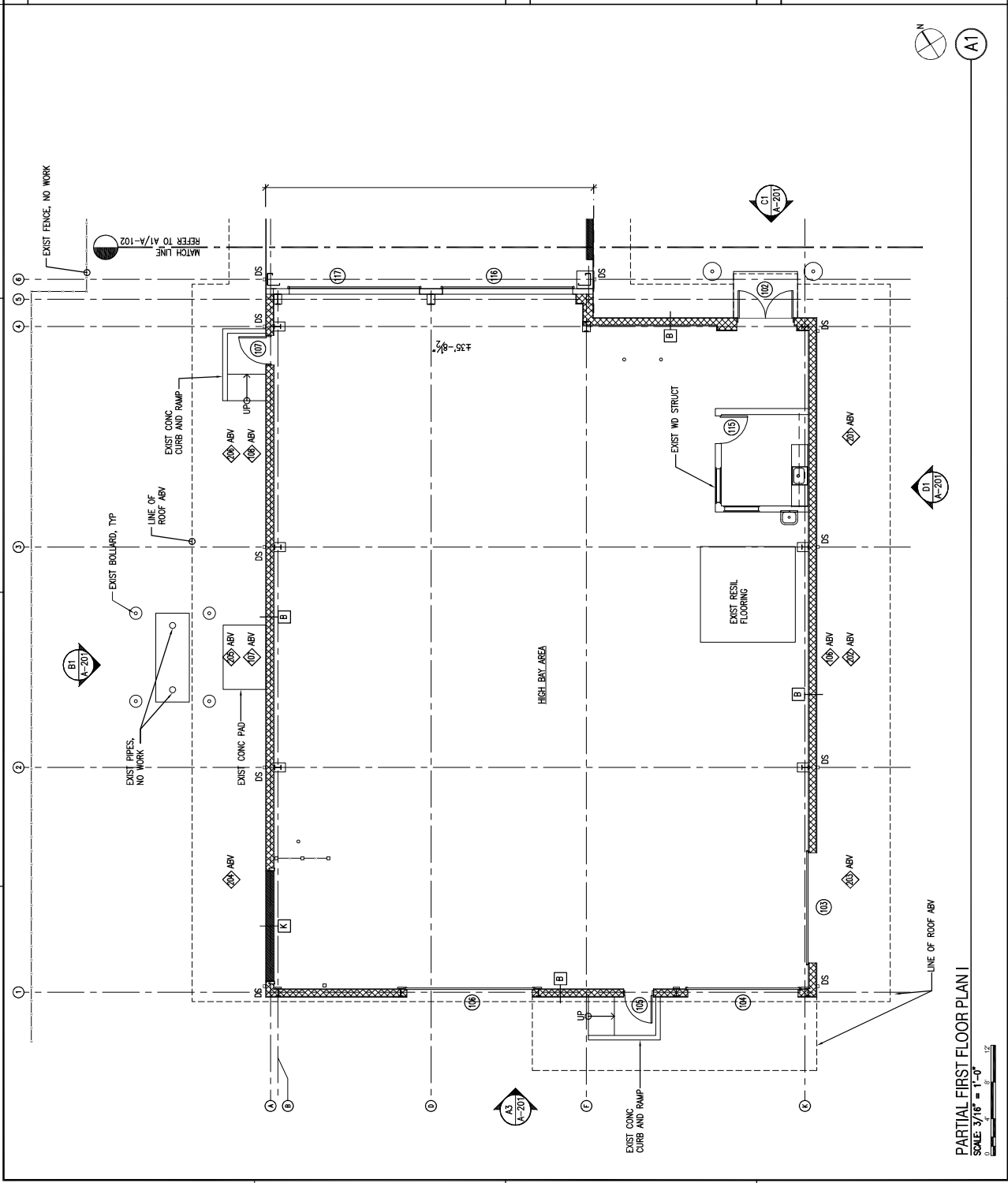
1. REPLACE EXTERIOR MTL SIDING AND MTL ROOFING WITH NEW METAL PANELS, TYP.
2. SEE ROOM FINISH SCHEDULE ON SHEET A-601 FOR FINISHES.
3. REINSTALL EXIST SPLASH BLOCKS, TYP FOR 5. PROVIDE NEW SPLASH BLOCKS AT OTHER DS LOCATIONS.
4. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK, SEE C3/A-521

**LEGEND**

- EXIST WALL
- NEW WALL
- WALL WITH INSULATION
- PARTITION TYPE, SEE SHT A-531 AND A-532
- DOOR, SEE SCHED ON SHT A-601 FOR WORK
- WINDOW, SEE SCHED ON SHT A-601 FOR WORK

**KEY PLAN**

I. HIGH BAY AREA  
II. FUTURE OPEN OFFICE AREA  
III. RESTROOMS  
IV. MAINTENANCE BAYS



**PARTIAL FIRST FLOOR PLAN I**  
SCALE 3/16" = 1'-0"





### FLOOR PLAN GENERAL NOTES

1. REPLACE EXTERIOR MTL SIDING AND MTL ROOFING WITH NEW METAL PANELS, TYP.
2. SEE ROOM FINISH SCHEDULE ON SHEET A-601 FOR FINISHES.
3. REINSTALL EXIST SPLASH BLOCKS, TYP FOR 5. PROVIDE NEW SPLASH BLOCKS AT OTHER DS LOCATIONS.
4. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK, SEE C3/A-521

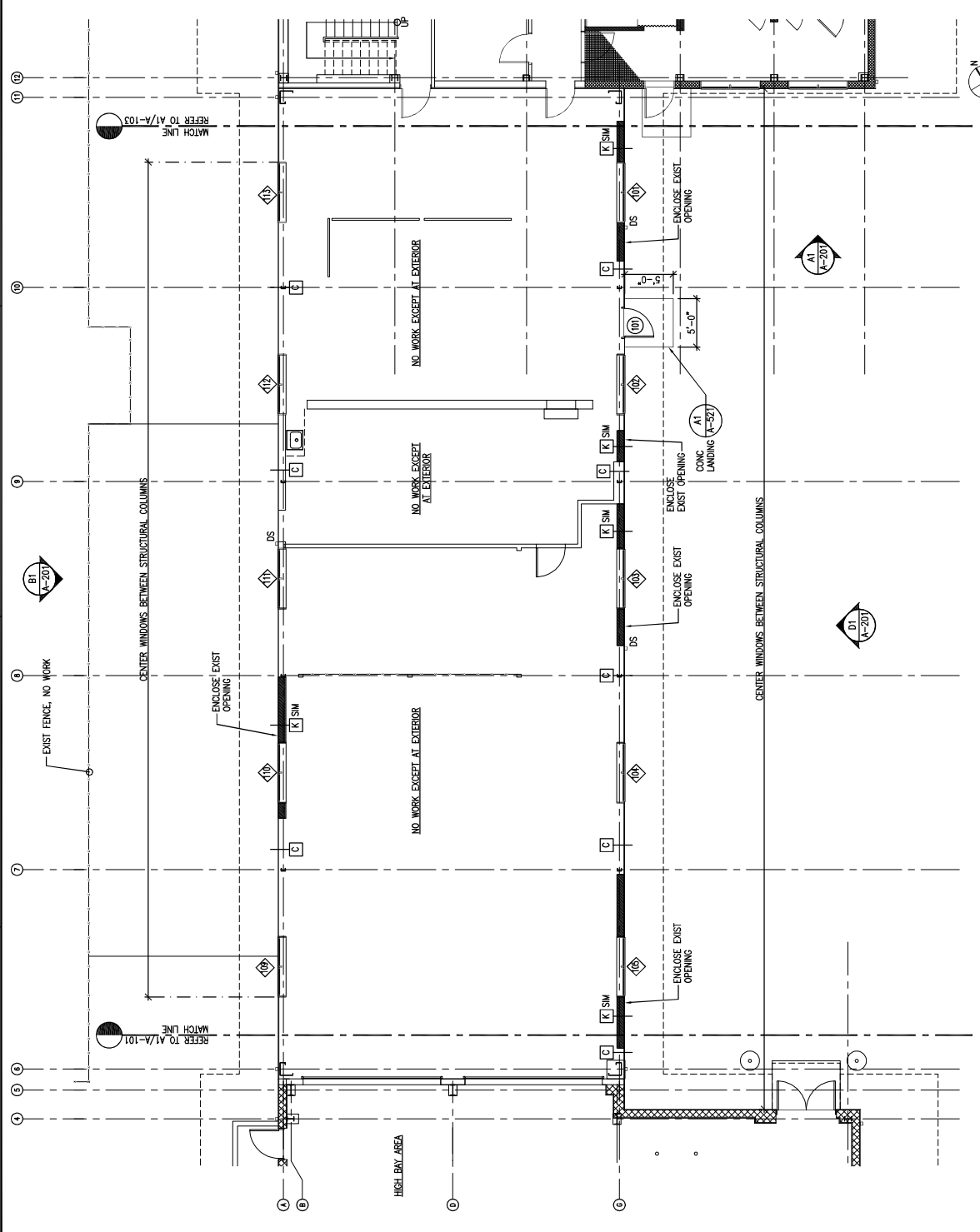


NO.	DESCRIPTION	DATE	BY

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DESIGNED BY: DA  
 CHECKED BY: DA

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER: BRUCE  
 KALELOA, HAWAII  
 DEPARTMENT OF DEFENSE  
 STATE OF HAWAII  
 BUILDING 907  
 FACILITY MANAGEMENT OFFICE  
 CONTRACT NO. CA-202209-C  
 FEDERAL PROJECT NO. T480001A  
 SHEET 18 OF 22

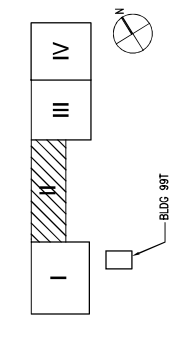
AS NOTED  
 A-102



### LEGEND

- EXIST WALL
- NEW WALL
- WALL WITH INSULATION
- PARTITION TYPE, SEE SHT A-531 AND A-532
- DOOR, SEE SCHED ON SHT A-601 FOR WORK
- WINDOW, SEE SCHED ON SHT A-601 FOR WORK

### KEY PLAN



- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS

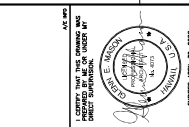
PARTIAL FIRST FLOOR PLAN II  
 SCALE: 3/16" = 1'-0"





### FLOOR PLAN GENERAL NOTES

1. REPLACE EXTERIOR MTL SIDING AND MTL ROOFING WITH NEW METAL PANELS, TYP.
2. SEE ROOM FINISH SCHEDULE ON SHEET A-601 FOR FINISHES.
3. REINSTALL EXIST SPLASH BLOCKS, TYP FOR 5. PROVIDE NEW SPLASH BLOCKS AT OTHER DS LOCATIONS.
4. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK, SEE C3/A-521



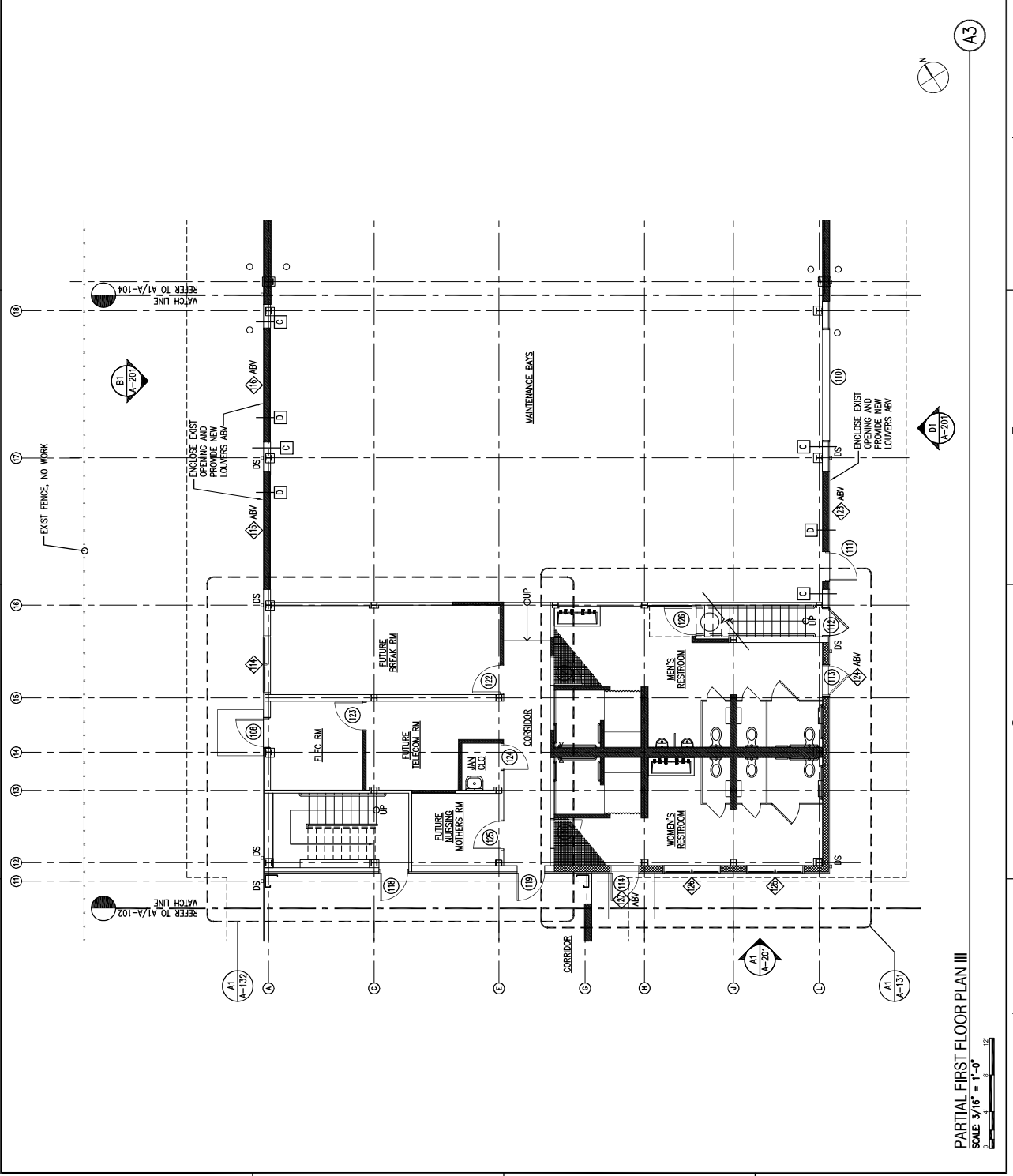
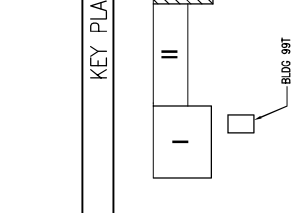
NO.	DESCRIPTION	DATE	BY

100% FINAL DESIGN  
 SHEET NO. 03/22/2024  
 DATE: 03/22/2024  
 DESIGNED BY: DA  
 CHECKED BY: EB  
 DRAWN BY: CH

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

AS NOTED  
 BUILDING 90T  
 FACILITY MANAGEMENT OFFICE  
 20240209-C  
 FEDERAL PROJECT NO.  
 15H0001A  
 SHEET 38 OF 42  
**A-103**

- ### LEGEND
- EXIST WALL
  - NEW WALL
  - WALL WITH INSULATION
  - PARTITION TYPE, SEE SHT A-531 AND A-532
  - DOOR, SEE SCHED ON SHT A-601 FOR WORK
  - WINDOW, SEE SCHED ON SHT A-601 FOR WORK



**PARTIAL FIRST FLOOR PLAN III**  
 SCALE: 3/16" = 1'-0"



NO.	DESCRIPTION	DATE	BY

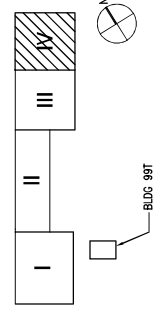
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 CHECKED BY: [Signature]  
 DRAWN BY: [Signature]  
 PROJECT NO. CA-202209-C  
 SHEET NO. 21 OF 22

STATE OF HAWAII  
 ARCHITECT MANAGEMENT OFFICE  
 BUILDING 907  
 KALELOA, HAWAII  
 DEPARTMENT OF DEFENSE  
 DESIGN AND PROJECT MANAGEMENT BRANCH

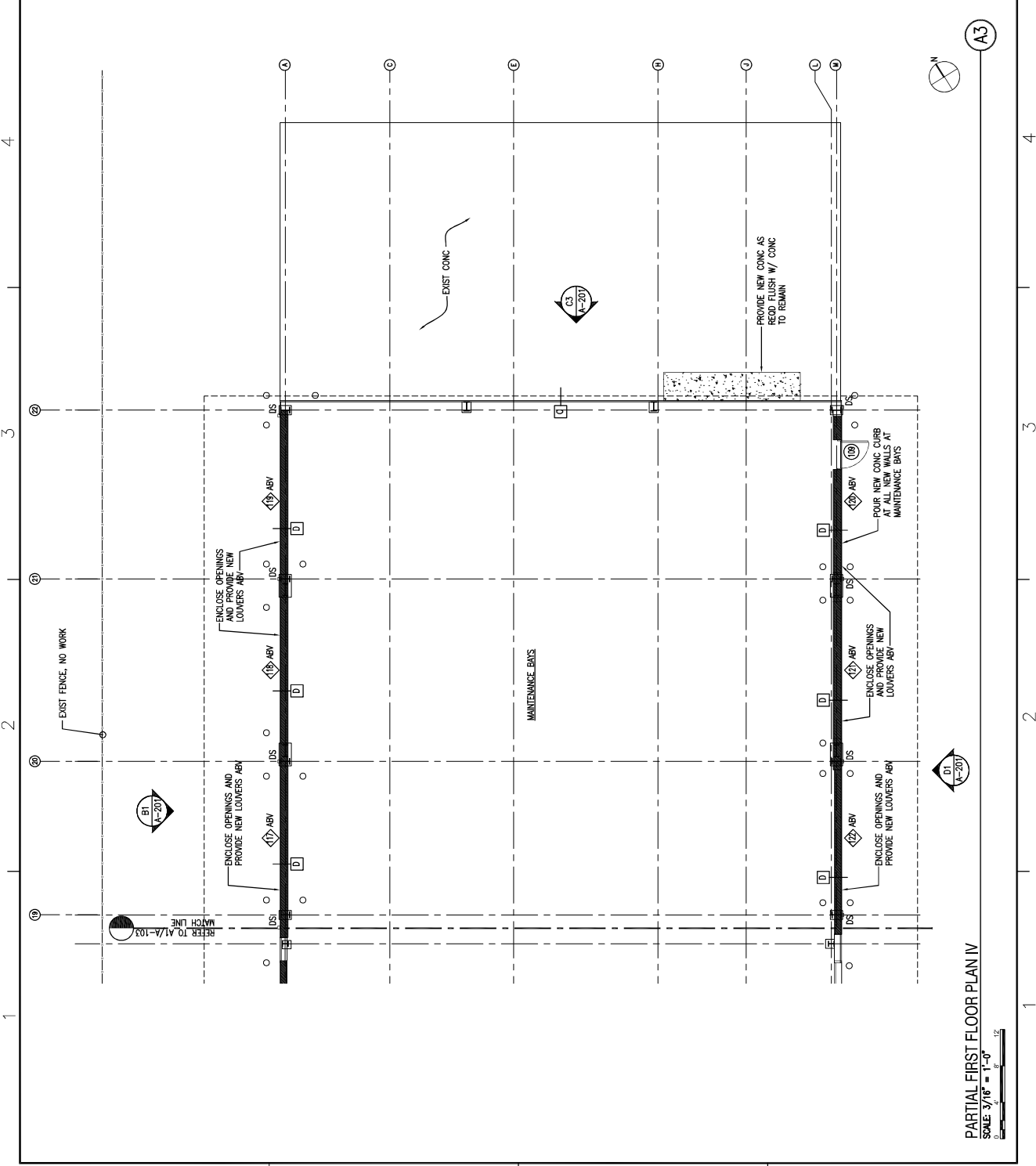
- ### FLOOR PLAN GENERAL NOTES
1. REPLACE EXTERIOR MTL SIDING AND MTL ROOFING WITH NEW METAL PANELS, TYP.
  2. SEE ROOM FINISH SCHEDULE ON SHEET A-601 FOR FINISHES.
  3. REINSTALL EXIST SPLASH BLOCKS, TYP FOR 5. PROVIDE NEW SPLASH BLOCKS AT OTHER DS LOCATIONS.
  4. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK. SEE CS/A-521

- ### LEGEND
- EXIST WALL
  - NEW WALL
  - WALL WITH INSULATION
  - PARTITION TYPE, SEE SHT A-531 AND A-532
  - DOOR. SEE SCHED ON SHT A-601 FOR WORK
  - WINDOW. SEE SCHED ON SHT A-601 FOR WORK

### KEY PLAN



- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS



PARTIAL FIRST FLOOR PLAN IV  
 SCALE: 3/16" = 1'-0"



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NO.	DATE	DESCRIPTION

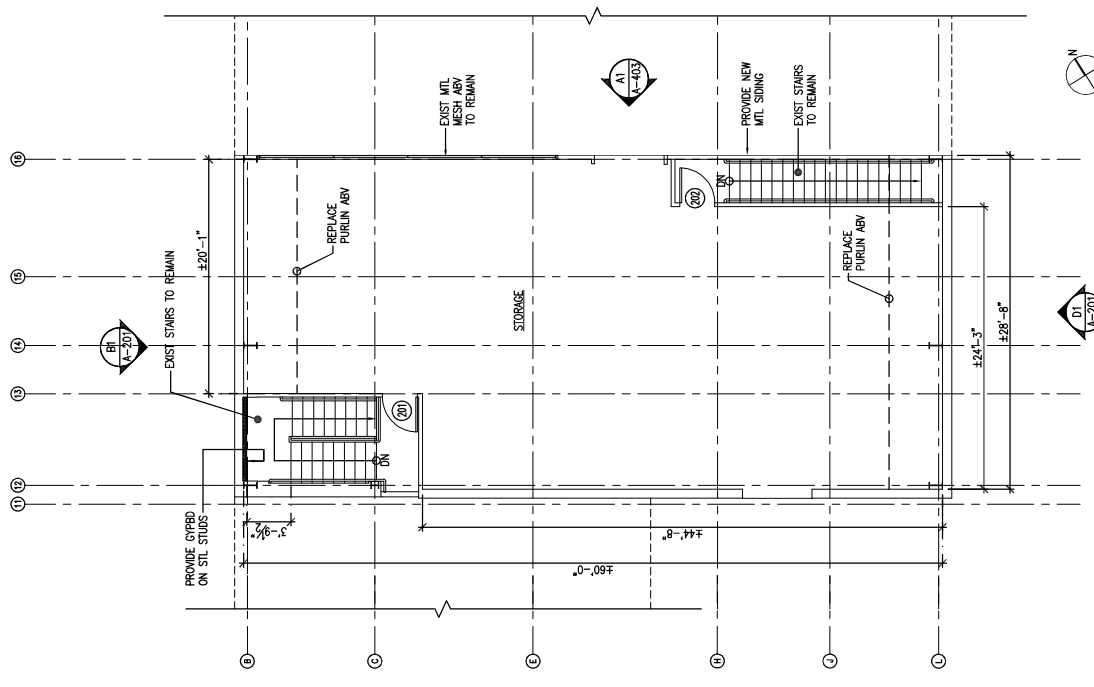
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 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER'S OFFICE  
 KALELOA, HAWAII  
 UPPER FLOOR PLAN

STATE OF HAWAII  
 ARCHITECT MANAGER'S OFFICE  
 BUILDING 907  
 AS NOTED  
 PROJECT NO. CH-202209-C  
 FEDERAL PROJECT NO. 15H000141  
 SHEET 33 OF 42  
**A-105**

- FLOOR PLAN GENERAL NOTES**
1. REPLACE EXTERIOR MTL SIDING AND MTL ROOFING WITH NEW METAL PANELS, TYP.
  2. SEE ROOM FINISH SCHEDULE ON SHEET A-601 FOR FINISHES.
  3. REINSTALL EXIST SPLASH BLOCKS, TYP FOR 5. PROVIDE NEW SPLASH BLOCKS AT OTHER DS LOCATIONS.
  4. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK, SEE C3/A-521

- LEGEND**
- EXIST WALL
  - NEW WALL
  - WALL WITH INSULATION
  - PARTITION TYPE, SEE SHT A-531 AND A-532
  - DOOR, SEE SCHED ON SHT A-601 FOR WORK
  - WINDOW, SEE SCHED ON SHT A-601 FOR WORK



UPPER FLOOR PLAN  
 SCALE: 3/16" = 1'-0"

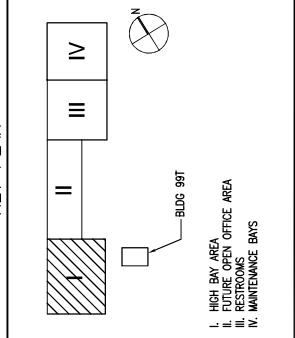
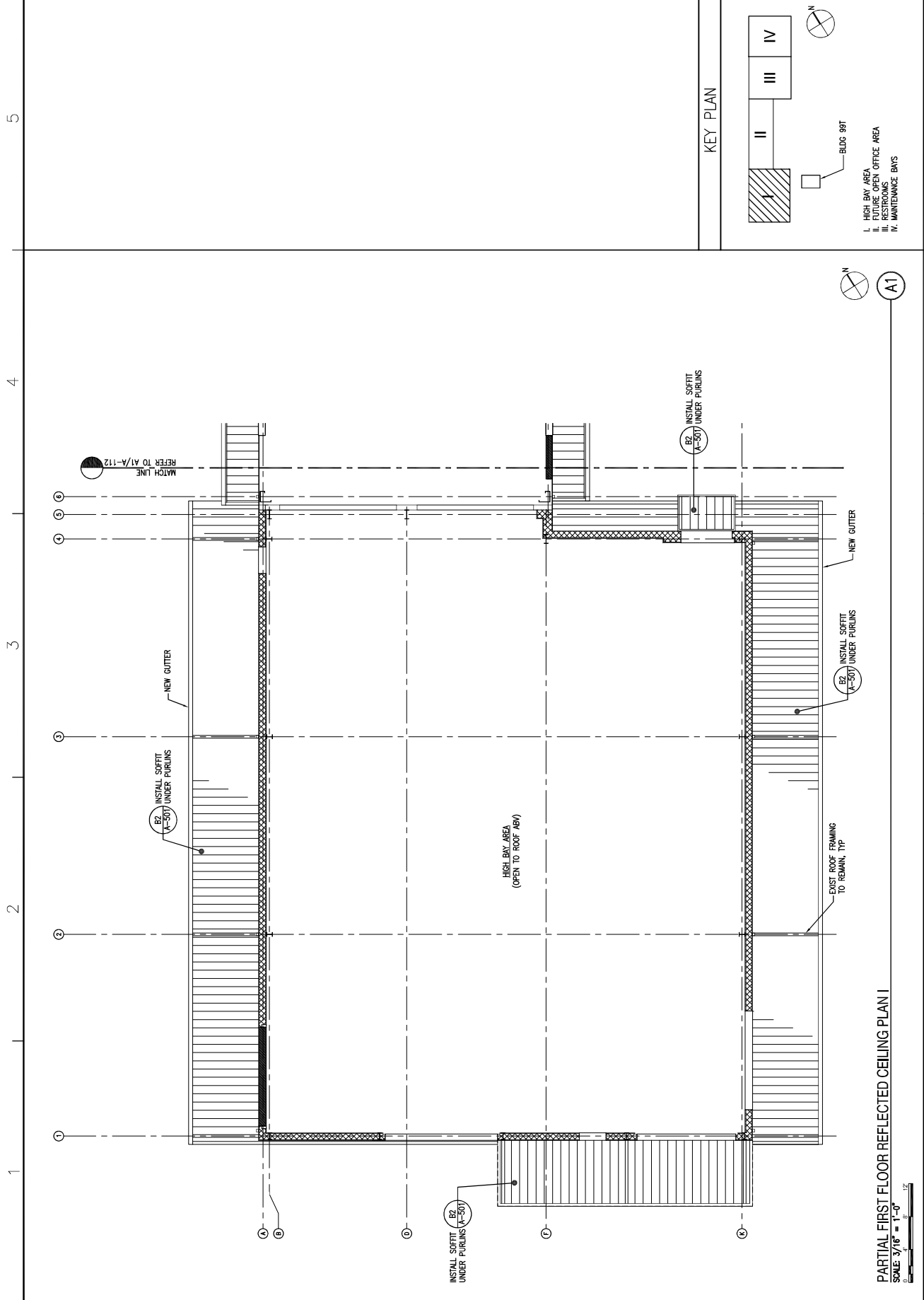


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 DESIGNED BY: [Redacted]  
 CHECKED BY: [Redacted]  
 DRAWN BY: [Redacted]  
 PROJECT NO. CA-202209-C  
 SHEET 33 OF 42



NO.	DATE	DESCRIPTION

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, HAWAII  
 BUILDING 90T  
 PARTIAL FIRST FLOOR REFLECTED CEILING PLAN I



PARTIAL FIRST FLOOR REFLECTED CEILING PLAN I  
 SCALE: 3/16" = 1'-0"



5

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A1

32



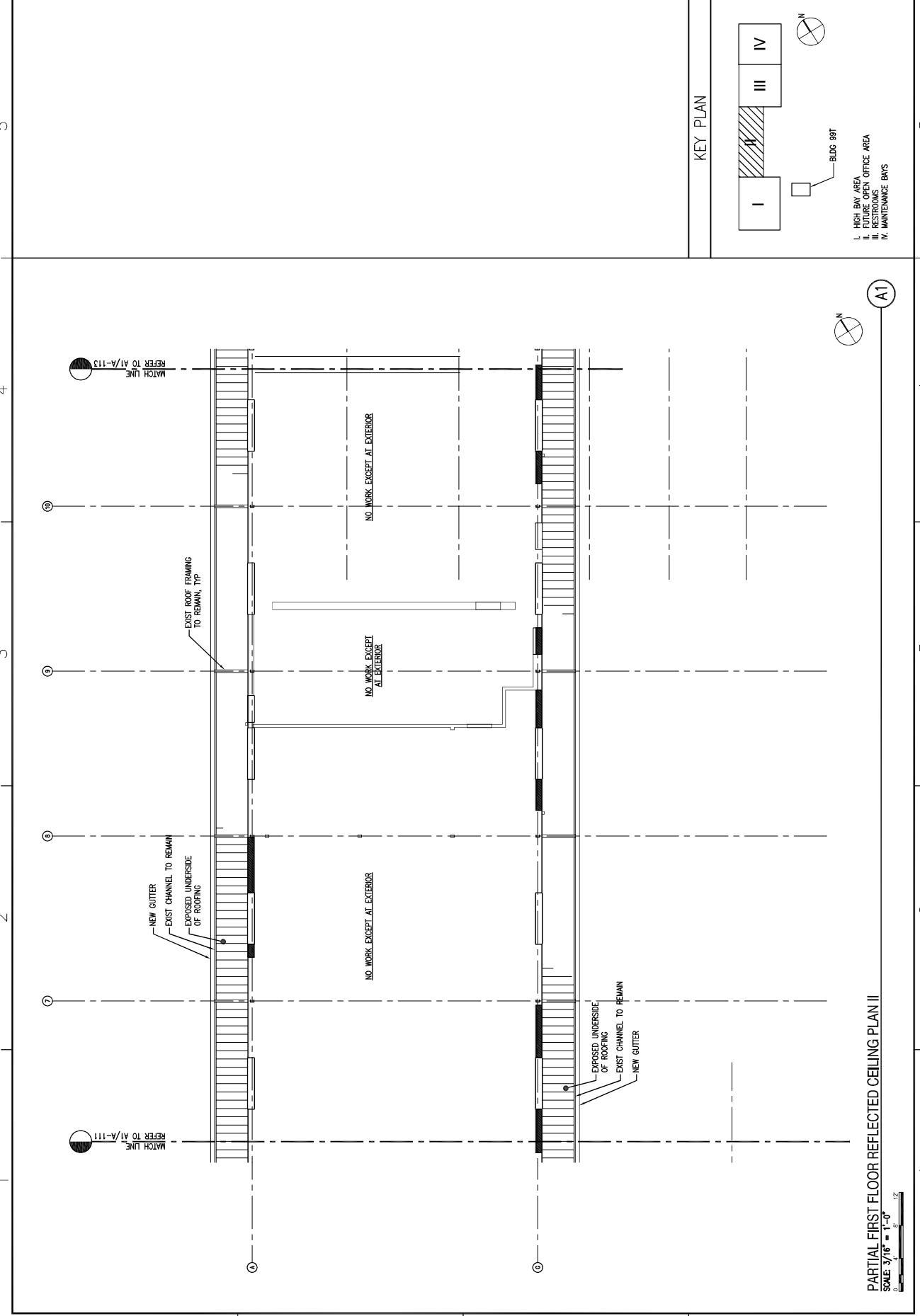
STATE OF HAWAII  
 HAWAIIAN ARCHITECTURE BOARD  
 LICENSE NO. 10000  
 EXPIRES APRIL 30, 2015

100% FINAL DESIGN  
 DATE: 03/27/2014  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]

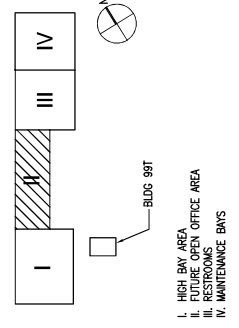
NO.	DATE	DESCRIPTION

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 BUILDING 90T  
 PARTIAL FIRST FLOOR REFLECTED CEILING PLAN II

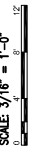
AS NOTED  
 CH-202029-C  
 FEDERAL PROJECT NO. 14H0001A  
 SHEET 34 OF 42  
 A-112



KEY PLAN



PARTIAL FIRST FLOOR REFLECTED CEILING PLAN II  
 SCALE: 3/16" = 1'-0"





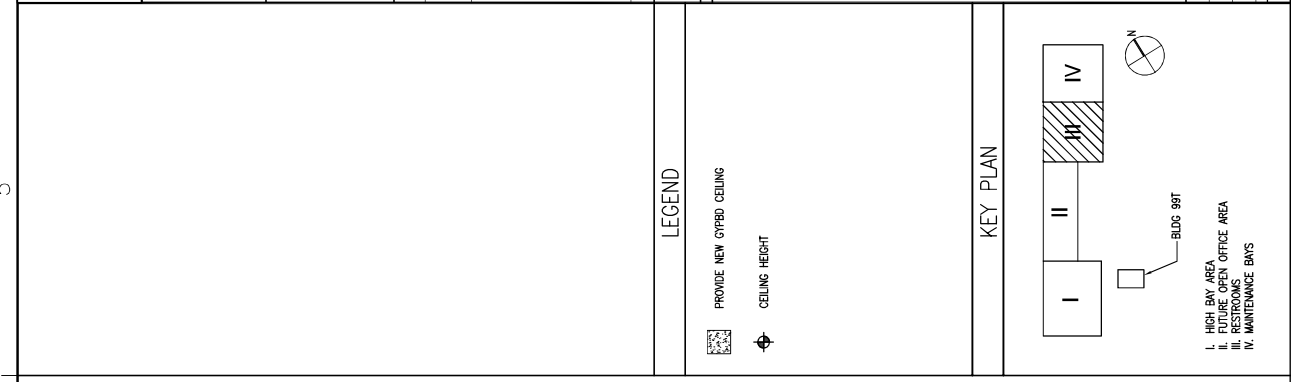
STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

AS NOTED  
 BUILDING 90T  
 PROJECT NO. CA-202009-C  
 FEDERAL PROJECT NO. T480001A  
 SHEET 35 OF 42  
**A-113**

NO.	DATE	DESCRIPTION

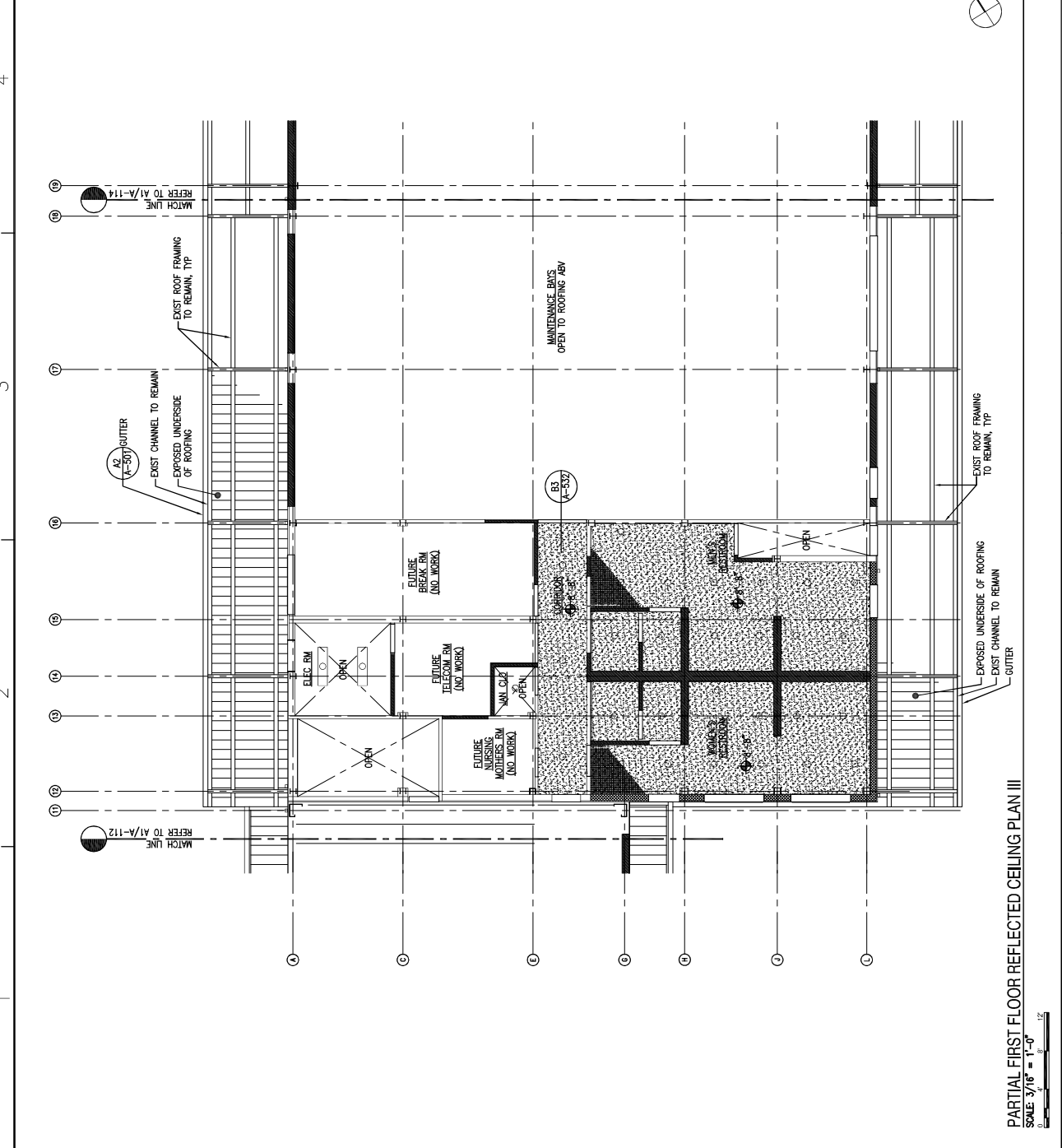
100% FINAL DESIGN  
 DATE: 03/22/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]

PARTIAL FIRST FLOOR REFLECTED CEILING PLAN III



**LEGEND**

- PROVIDE NEW GYPED CEILING
- CEILING HEIGHT



**PARTIAL FIRST FLOOR REFLECTED CEILING PLAN III**  
 SCALE: 3/16" = 1'-0"





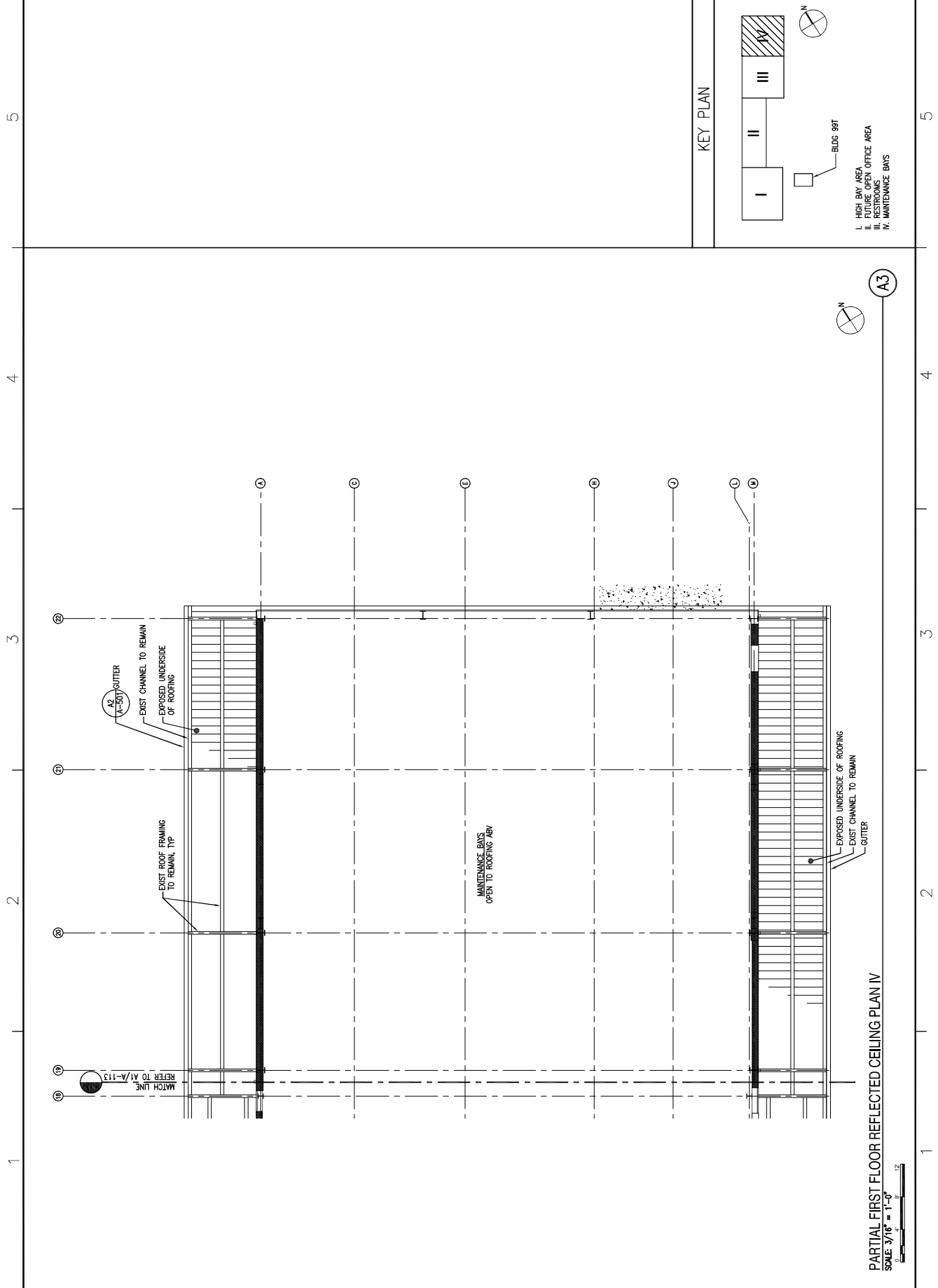
STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

100% FINAL DESIGN  
 DATE: 03/22/2024  
 SHEET NO. 01  
 SHEET TOTAL 04

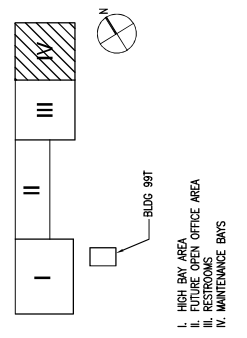
NO.	DATE	DESCRIPTION

DESIGNED BY: [Signature]  
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 DATE: 03/22/2024

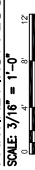
**PARTIAL FIRST FLOOR REFLECTED CEILING PLAN IV**  
 BUILDING 907  
 KALELOA, HAWAII  
 SCALE: AS NOTED  
 SHEET NO. 01 OF 04  
 FEDERAL PROJECT NO. CH-202209-C  
 PROJECT TITLE: TIKOOLU  
 SHEET NO. 01 OF 04



**KEY PLAN**



**PARTIAL FIRST FLOOR REFLECTED CEILING PLAN IV**  
 SCALE: 3/16" = 1'-0"







STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

100% FINAL DESIGN  
 03/22/2024  
 03/22/2024  
 03/22/2024

NO.	DATE	DESCRIPTION

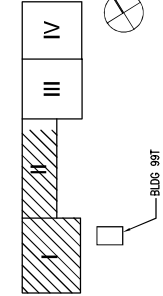
DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

PARTIAL ROOF PLAN I - II  
 KALAEOA B90T RESTORATION

AS NOTED  
 CH-202209-C  
 FEDERAL PROJECT NO. 14H0001A  
 SHEET 31

A-121

KEY PLAN

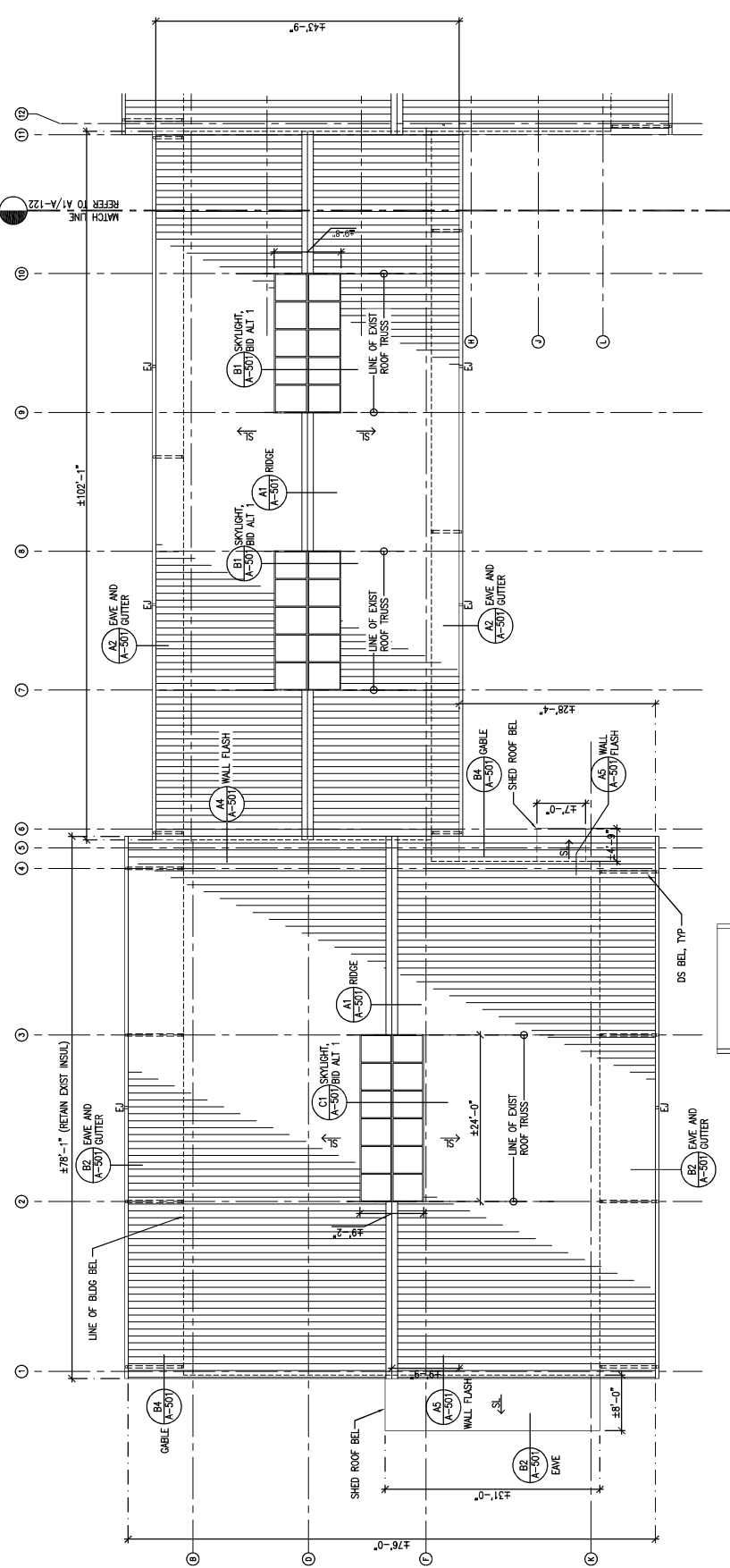


- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS

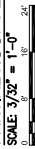
ROOF NOTES

1. REPLACE ALL ROOFING W/ NEW CORRUGATED METAL ROOFING
2. REPLACE ALL ROOF FLASHINGS AND DS WITH NEW. PROVIDE NEW GUTTERS AND DS WHERE INDICATED
3. SEE MECH FOR VIB LOCATIONS, MECH PENETRATIONS, AND DETAILS.
5. ALL SKYLIGHTS ARE PART OF BID ALT 1.

ENTERPRISE STREET



PARTIAL ROOF PLAN I - II  
 SCALE 3/32" = 1'-0"





STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

100% FINAL DESIGN  
 DATE: 03/22/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

NO.	DATE	DESCRIPTION

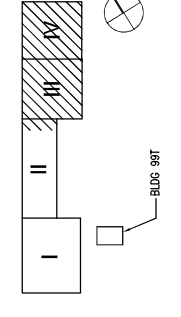
PROJECT: PARTIAL ROOF PLAN III & IV  
 BUILDING: 90T  
 SHEET: 38

SCALE: AS NOTED  
 DATE: 03/22/2024  
 FEDERAL PROJECT NO.: CH-202209-C  
 PROJECT NO.: 14800014  
 SHEET: 38

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELOA, HAWAII

PARTIAL ROOF PLAN III - IV  
 SCALE: 3/32" = 1'-0"  
 SHEET: 38

KEY PLAN

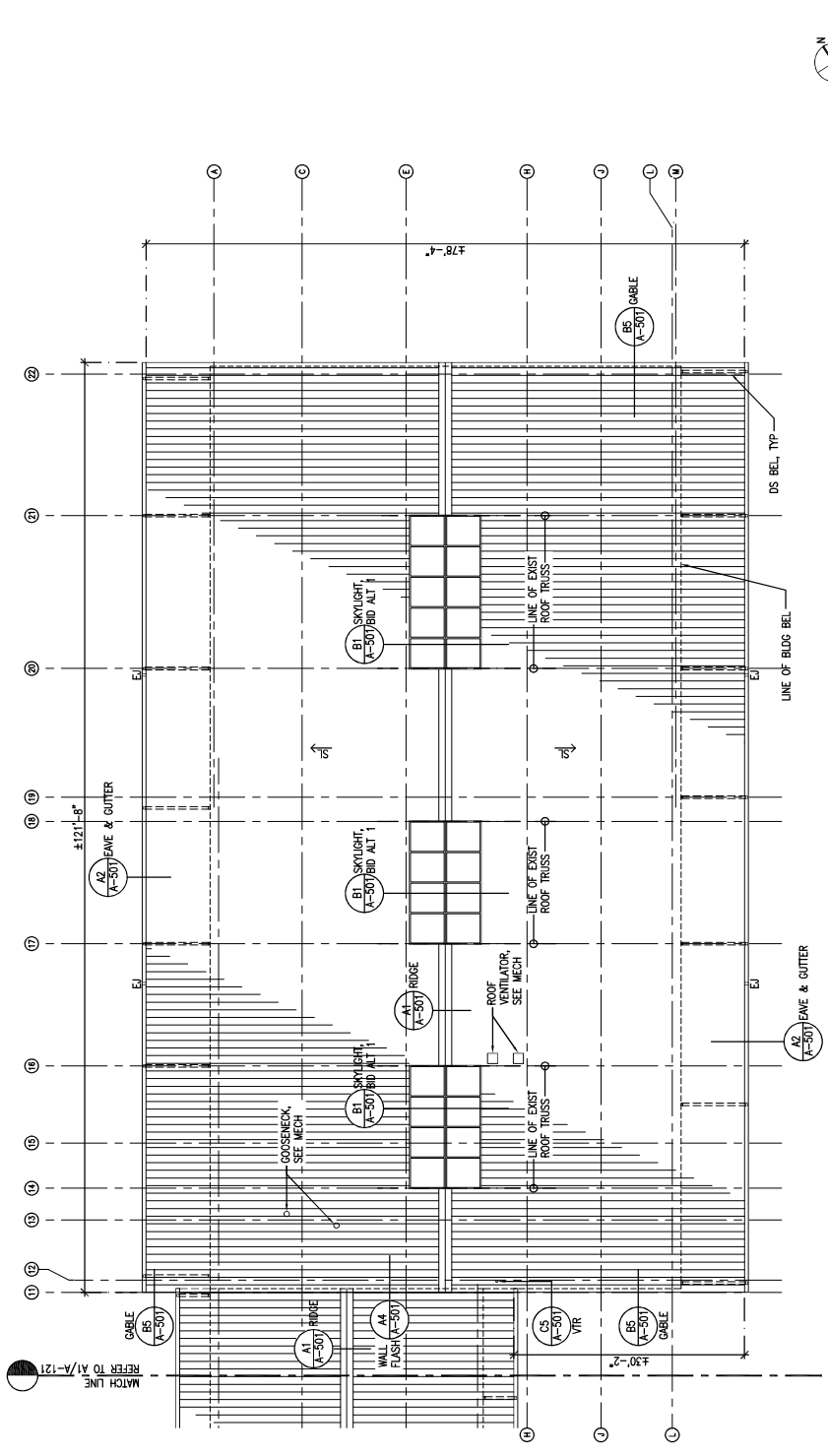


- I. HIGH BAY AREA
- II. FUTURE OPEN OFFICE AREA
- III. RESTROOMS
- IV. MAINTENANCE BAYS

ROOF NOTES

1. REPLACE ALL ROOFING W/ NEW CORRUGATED METAL ROOFING
2. REPLACE ALL ROOF FLASHINGS AND DS WITH NEW. PROVIDE NEW FLASHINGS AND DS WHERE INDICATED
3. SEE MECH FOR VLR LOCATIONS, MECH PENETRATIONS, AND DETAILS.
4. ALL SKYLIGHTS ARE PART OF BID ALT 1.

ENTERPRISE STREET



PARTIAL ROOF PLAN III - IV  
 SCALE: 3/32" = 1'-0"





**ENLARGED FLOOR PLAN NOTES**

1. PROVIDE NEW PLUMBING FIXTURES, TYP
2. PROVIDE NEW TOILET PARTITIONS.
3. PROVIDE NEW PARTITION WALLS.
4. SEE ROOM FINISH SCHEDULE ON SHIT A-601 FOR FINISHES.
5. PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK. SEE C3/A-321

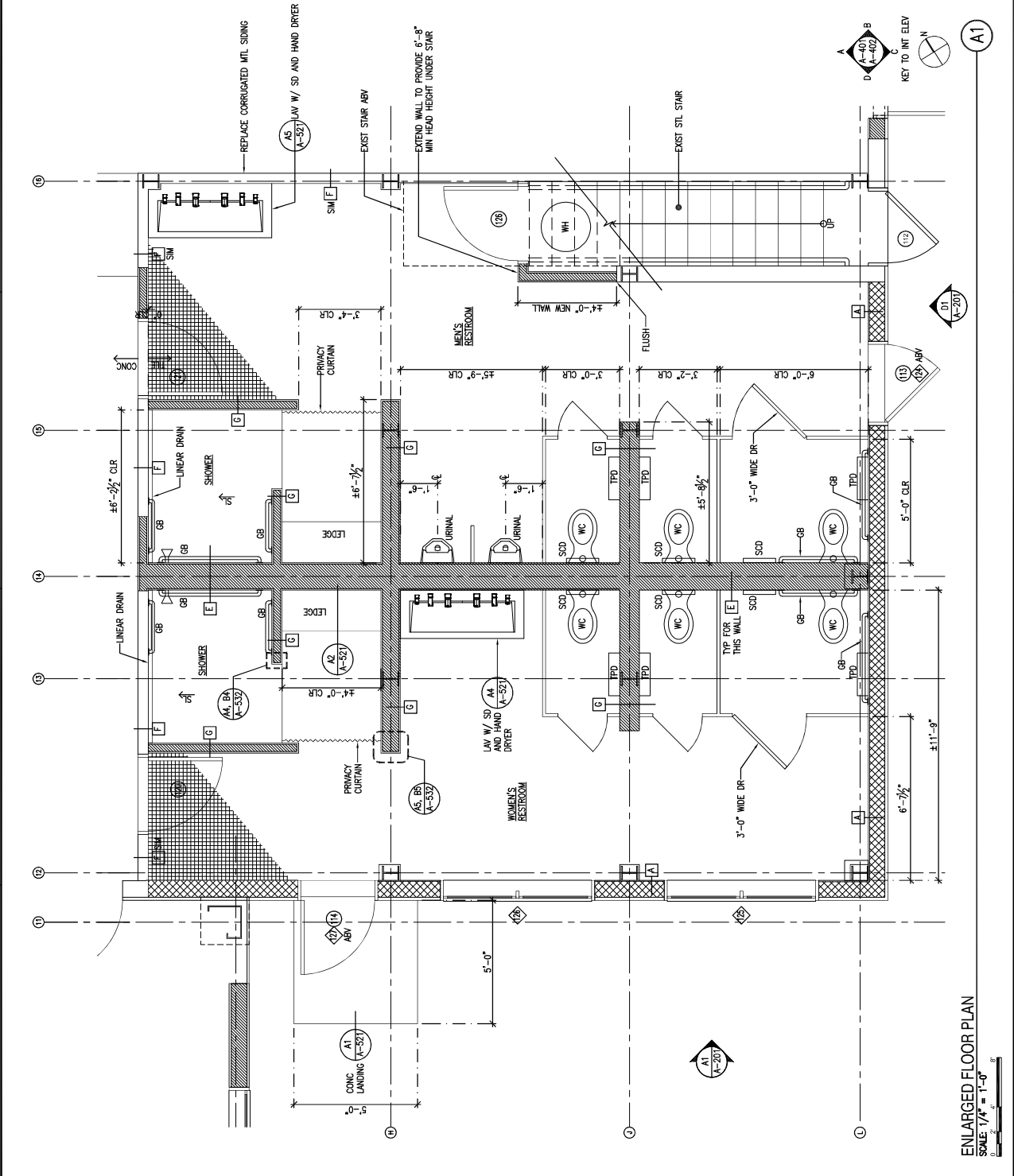
HAWAII ARMY NATIONAL GUARD DESIGN AND PROJECT MANAGEMENT SERVICES KALELOA, HAWAII		STATE OF HAWAII DEPARTMENT OF DEFENSE BUILDING 907 AS NOTED DATE: APRIL 2008 PROJECT NO.: CA-200209-C FEDERAL PROJECT NO.: 14H0001A SHEET: 35 <b>A-131</b>
100% FINAL DESIGN SHEET NO.: 03/22/2008 DATE: 03/22/2008 DESIGNED BY: [Signature] CHECKED BY: [Signature]	ENLARGED FLOOR PLAN	

**LEGEND**

- EXIST WALL
- NEW WALL
- WALL WITH NEW INSULATION
- PARTITION TYPE, SEE SHITS A-531 AND A-532
- DOOR, SEE SCHED ON SHIT A-601 FOR WORK
- WINDOW, SEE SCHED ON SHIT A-601 FOR WORK

**KEY PLAN**

I. HIGH BAY AREA  
 II. FUTURE OPEN OFFICE AREA  
 III. RESTROOMS  
 IV. MAINTENANCE BAYS



**ENLARGED FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"



NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/22/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 PROJECT NO.: KA-202309-C  
 SHEET NO.: 14/200/01/01  
 SHEET OF: 12

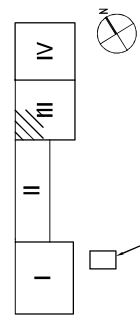
STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALAELOA, HAWAII  
 BUILDING 907  
 AS NOTED  
 DESIGN MANAGEMENT OFFICE  
 2000 W. KALIHI AVENUE  
 HONOLULU, HI 96819  
 PHONE: (808) 531-2000  
 FAX: (808) 531-2001  
 PROJECT NO.: KA-202309-C  
 SHEET NO.: 14/200/01/01  
 SHEET OF: 12  
**A-132**

### ENLARGED FLOOR PLAN NOTES

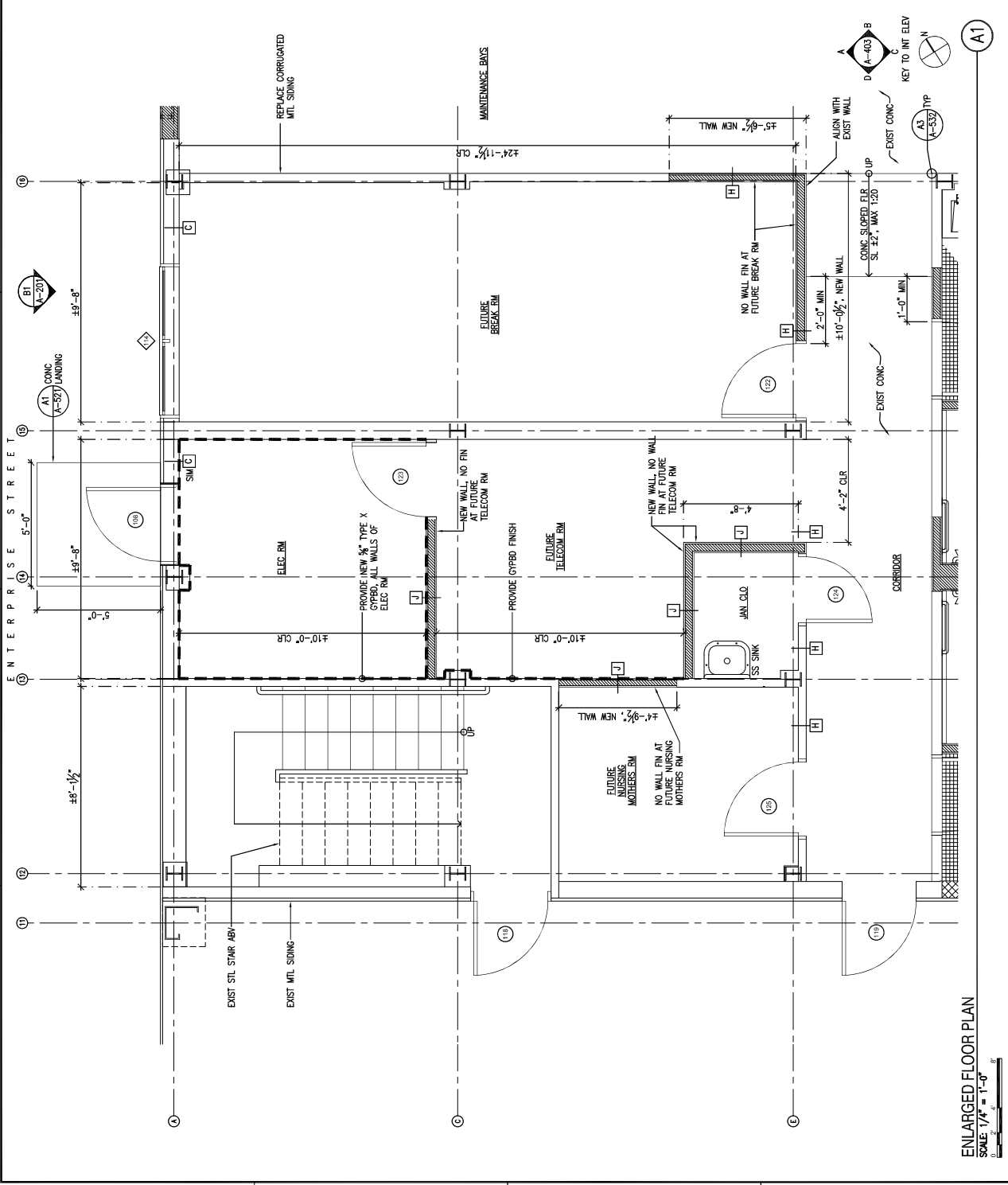
- SEE ROOM FINISH SCHEDULE ON SHIT A-601 FOR FINISHES  
 PATCH EXIST CONC AS REQD AFTER PLUMB AND ELEC WORK,  
 SEE CS/A-521

- ### LEGEND
- EXIST WALL
  - NEW WALL
  - WALL WITH NEW INSULATION
  - PARTITION TYPE, SEE SHITS A-531 AND A-532
  - DOOR, SEE SCHED ON SHIT A-601 FOR WORK
  - WINDOW, SEE SCHED ON SHIT A-601 FOR WORK

### KEY PLAN



- HIGH BAY AREA
- FUTURE OPEN OFFICE AREA
- RESTROOMS
- MAINTENANCE BAYS



ENLARGED FLOOR PLAN  
 SCALE: 1/4" = 1'-0"





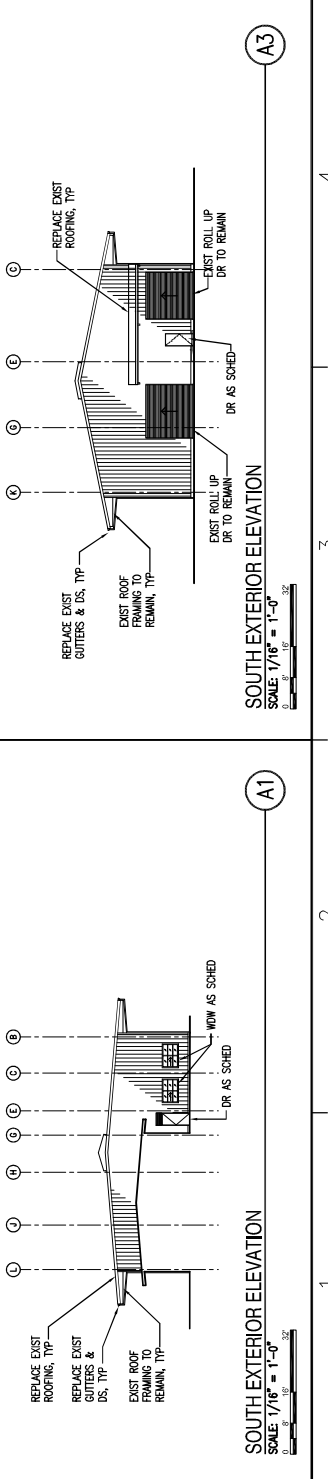
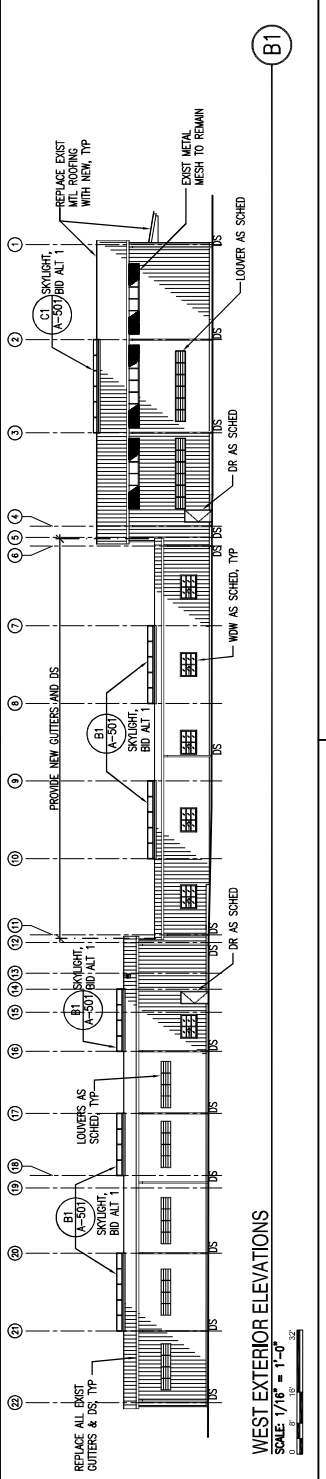
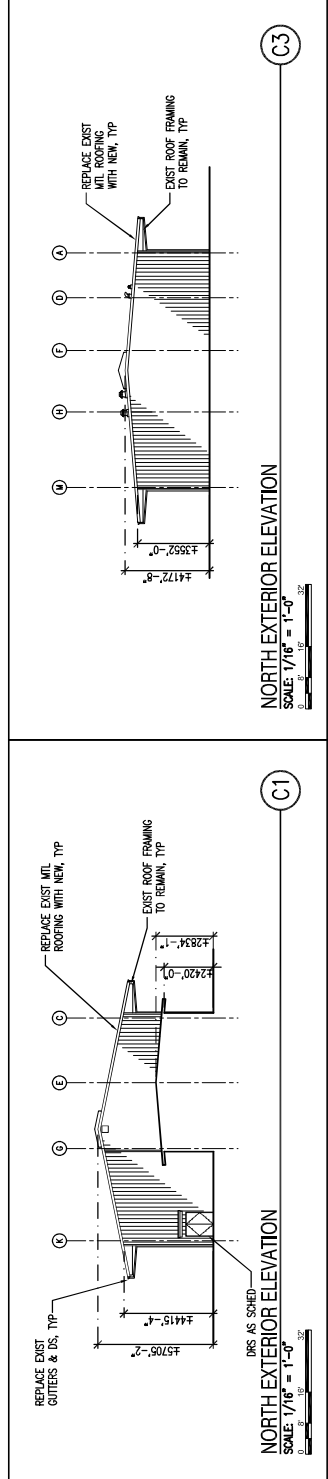
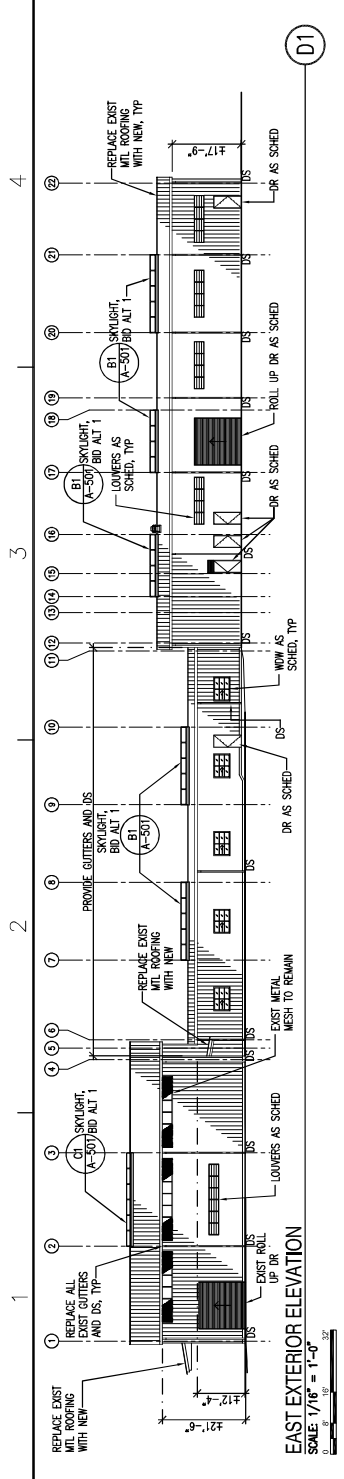
EXTERIOR ELEVATION NOTES

1. REPLACE EXTERIOR METAL SIDING WITH NEW, TYP
2. PROVIDE NEW WINDOWS, TYP AND
3. REPLACE ALL EXIST GUTTERS AND DS, RENEWAL EXIST SPLASH BLOCKS
4. REPLACE ALL EXIST METAL ROOFING AND FLASHING
5. ALL SKYLIGHTS ARE PART OF BID ALT 1.

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT SERVICES  
 KALELA, HAWAII

CLIENT: HAWAII ARMY NATIONAL GUARD  
 PROJECT: KALELA B90T RESTORATION  
 SHEET: A-201

DATE: 03/27/2024  
 100% FINAL DESIGN





STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

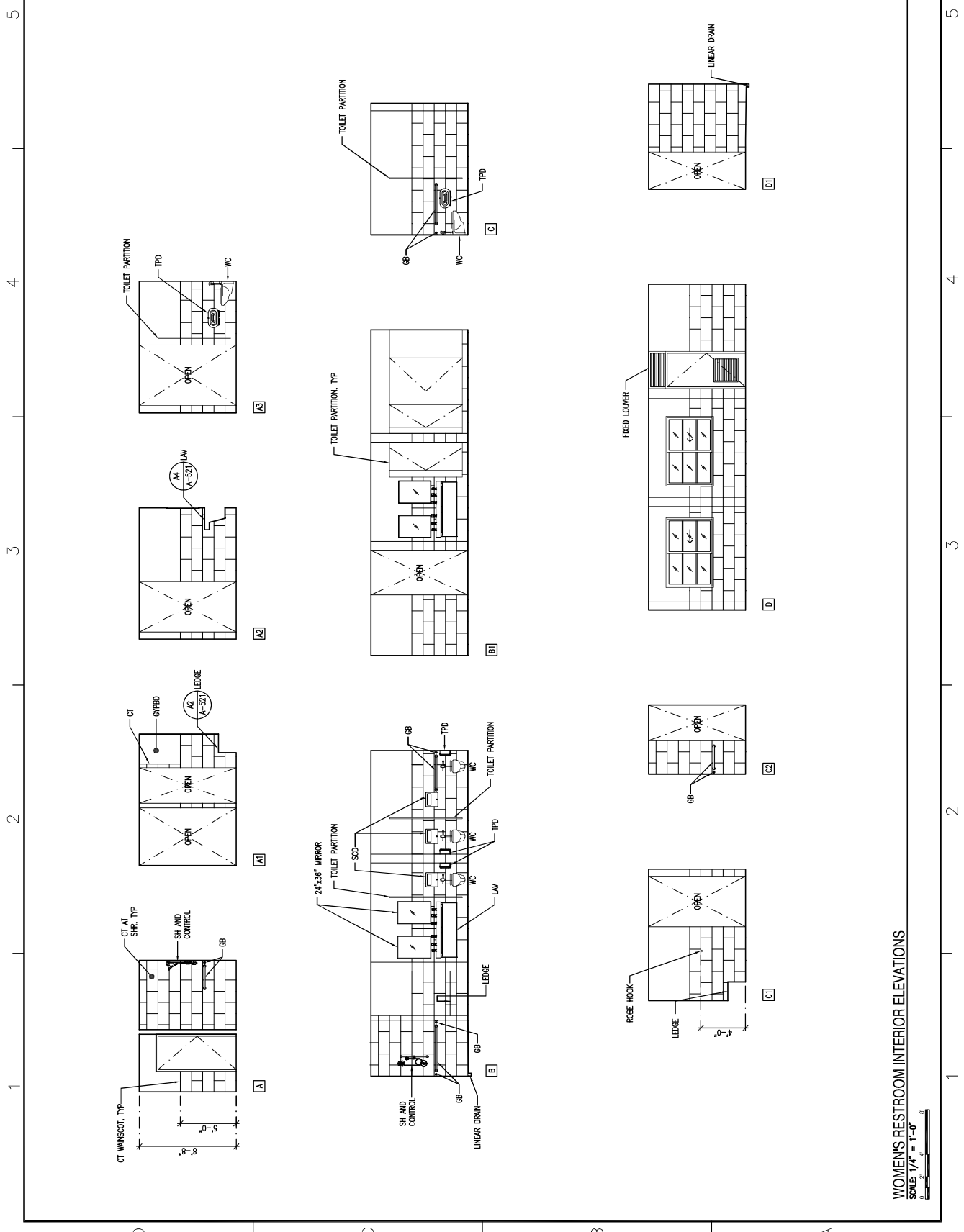
100% FINAL DESIGN  
 03/27/2024  
 DATE: 03/27/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

NO.	DESCRIPTION	DATE	APP'D

DATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 BUILDING 907  
 KALELOA, HAWAII

AS NOTED  
 CH-202209-C  
 FEDERAL PROJECT NO.  
 FEDERAL PROJECT NO.  
 SHEET 33

A-401



WOMENS RESTROOM INTERIOR ELEVATIONS

SCALE: 1/4" = 1'-0"





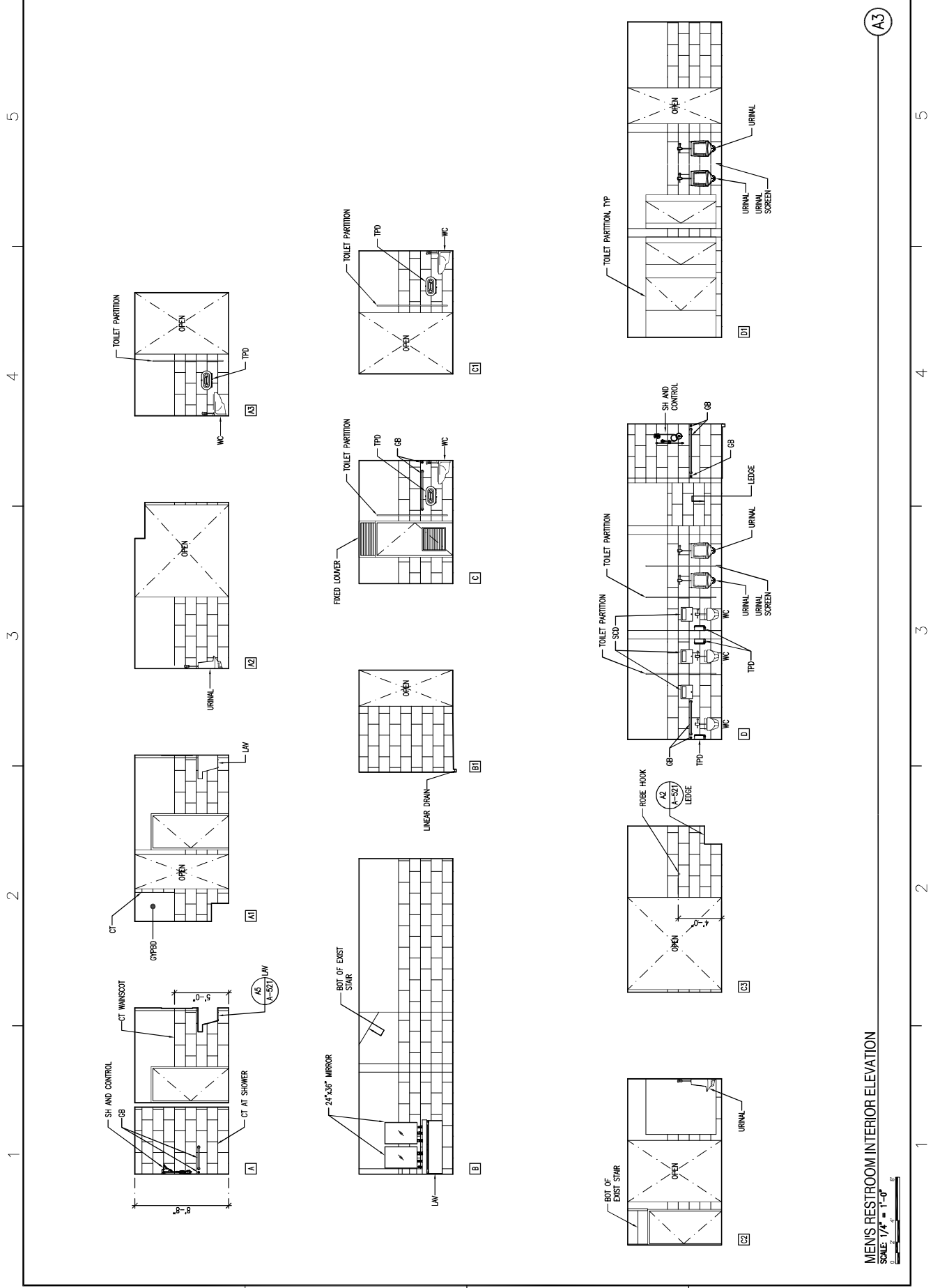
STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

DATE	DESCRIPTION

100% FINAL DESIGN  
 03/27/2024  
 03/27/2024  
 03/27/2024

AS NOTED  
 BUILDING 90T  
 FACILITY MANAGEMENT OFFICE  
 CH-202209-C  
 FEDERAL PROJECT NO. 14H0001A  
 SHEET 33 OF 42

KALELOA B90T RESTORATION  
 INTERIOR ELEVATIONS  
 A-402



MEN'S RESTROOM INTERIOR ELEVATION  
 SCALE: 1/4" = 1'-0"



A3



STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

100% FINAL DESIGN  
 SHEET NO. 03/22/2024  
 DATE: 03/22/2024  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 APPROVED BY: [Signature]

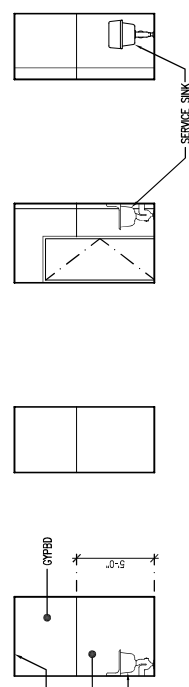
NO.	DESCRIPTION	DATE	BY

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

AS NOTED  
 BUILDING 90T  
 PROJECT NO. CA-202209-C  
 FEDERAL PROJECT NO. T480004  
 SHEET NO. T480004-01  
 A-403

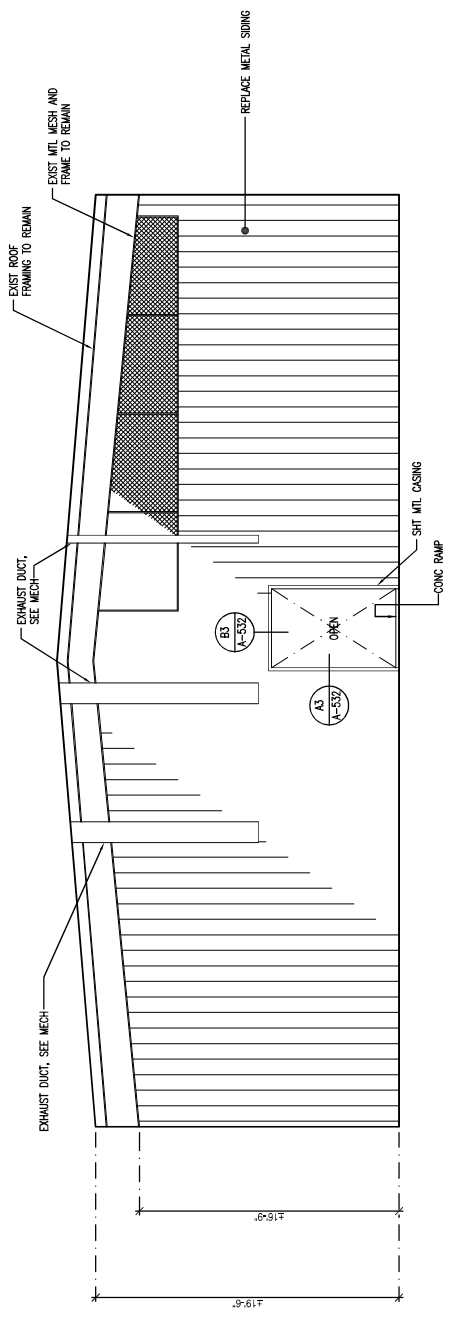
1 2 3 4 5

OPEN TO UNDERSIDE OF EXISTING WALLS TO UNDERSIDE OF STRUCT, TYP  
 FRP WAINSCOT, TYP  
 SERVICE SINK  
 CAPPED  
 5'-0"



JAN CLO INTERIOR ELEVATIONS  
 SCALE: 1/4" = 1'-0"

NOTES:  
 REMOVE EXIST MECH EQUIP, ELEC EQUIP, EXHAUST DUCT, AND FRP WAINSCOT AND ACCOMMODATE REPLACEMENT OF METAL SIDING.



MAINTENANCE BAY INTERIOR ELEVATION  
 SCALE: 1/4" = 1'-0"

1 2 3 4 5

D

C


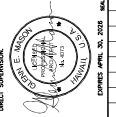
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A

A3

A1

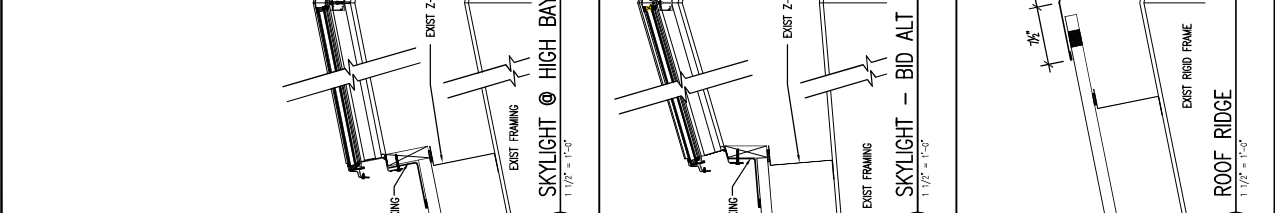
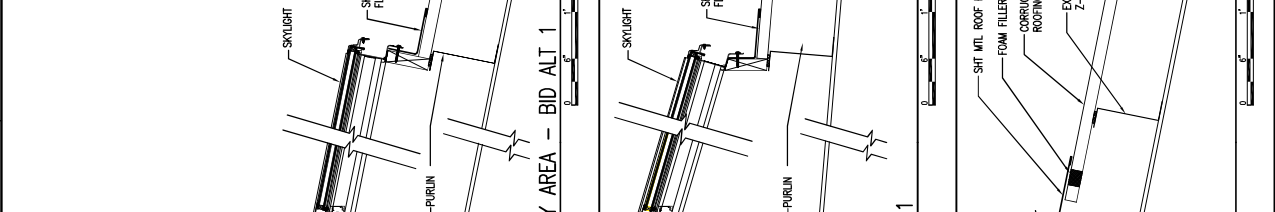
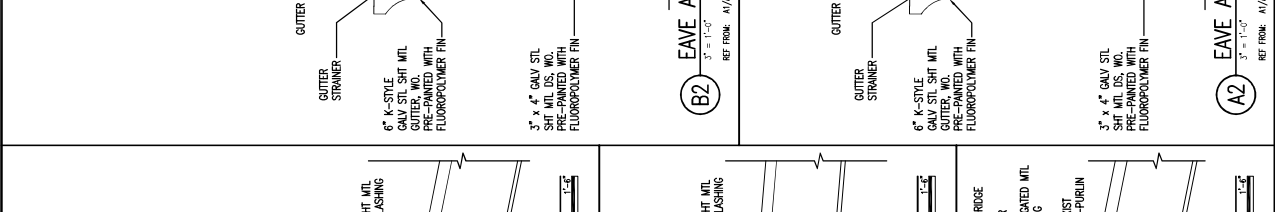
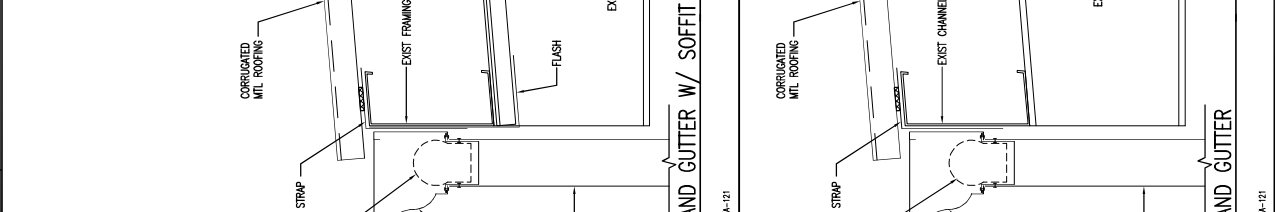
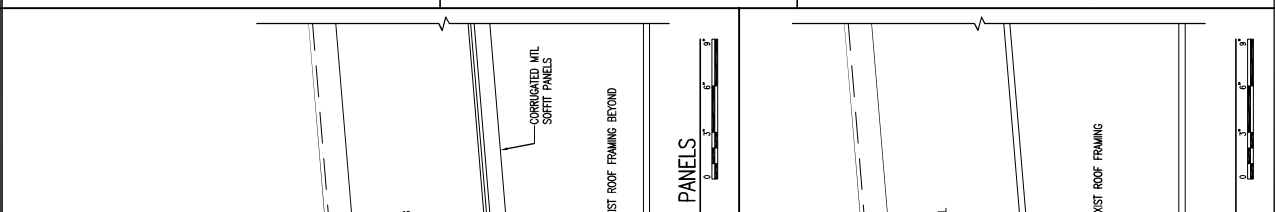
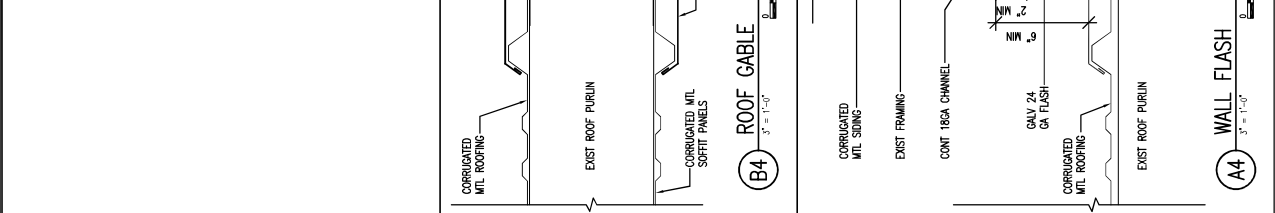
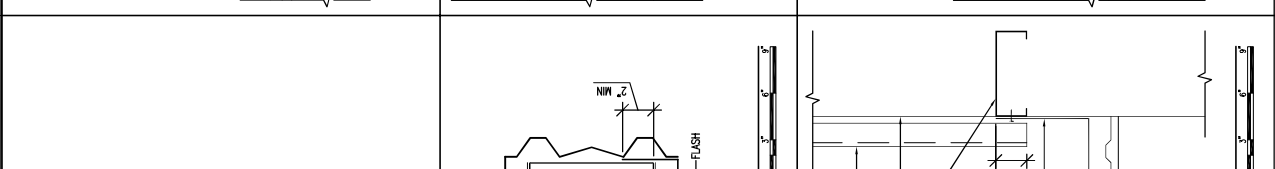
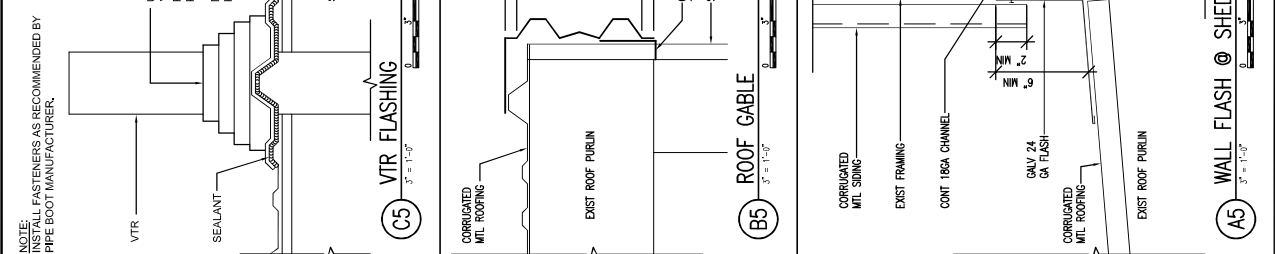


			
<b>AS NOTED</b> AS NOTED		<b>AS NOTED</b> AS NOTED	
BUILDING 907 FACILITY MANAGEMENT OFFICE		BUILDING 907 FACILITY MANAGEMENT OFFICE	
FEDERAL PROJECT NO. 15H0001A CONTRACT NO. CA-20029-C SHEET NO. 35		FEDERAL PROJECT NO. 15H0001A CONTRACT NO. CA-20029-C SHEET NO. 35	
STATE OF HAWAII DEPARTMENT OF DEFENSE DESIGN AND PROJECT MANAGEMENT SERVICES KALELOA, HAWAII		STATE OF HAWAII DEPARTMENT OF DEFENSE DESIGN AND PROJECT MANAGEMENT SERVICES KALELOA, HAWAII	
100% FINAL DESIGN DATE: 03/22/2024 DRAWN BY: [Redacted] CHECKED BY: [Redacted]		100% FINAL DESIGN DATE: 03/22/2024 DRAWN BY: [Redacted] CHECKED BY: [Redacted]	

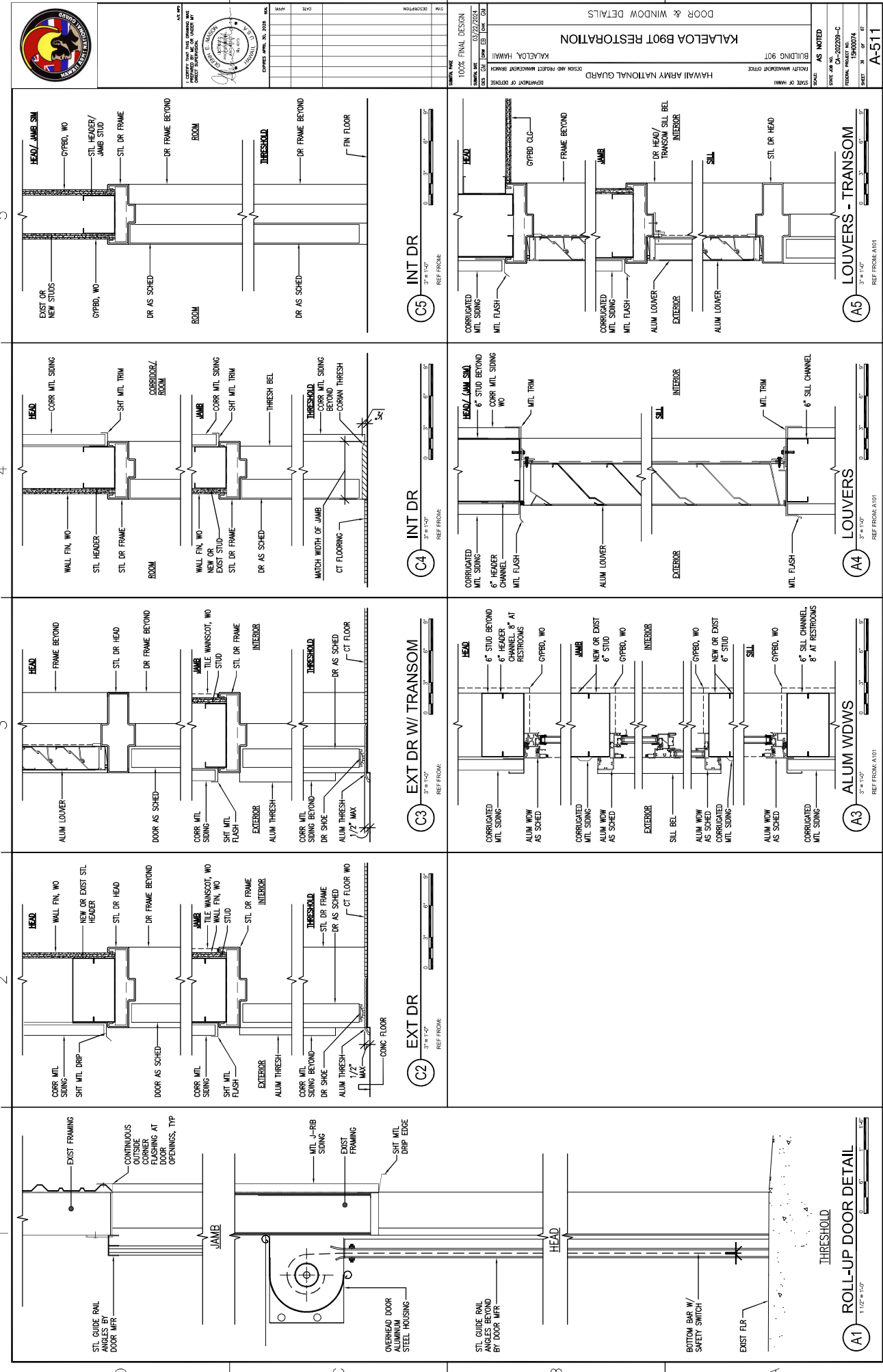
**KALAELOA B907 RESTORATION**

**ROOF DETAILS**

**A501**



**NOTE:** INSTALL FASTENERS AS RECOMMENDED BY PIPE BOOT MANUFACTURER.



DESIGNED BY: [Signature]  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 DATE: [Date]  
 PROJECT NO: [Number]  
 SHEET NO: [Number]

100% FINAL DESIGN  
 DATE: 03/22/2024  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 DATE: [Date]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER: [Name]  
 KALELA, HAWAII  
 BUILDING 90T  
 AS NOTED  
 SHEET NO: A-511

STATE OF HAWAII  
 ARCHITECT MANAGER OFFICE  
 PROJECT NO: 202209-C  
 SHEET NO: A-511



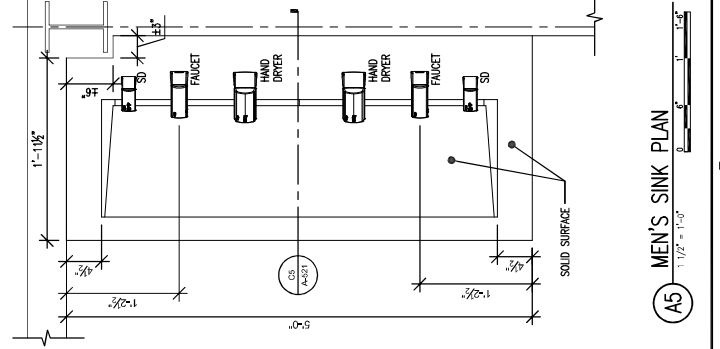
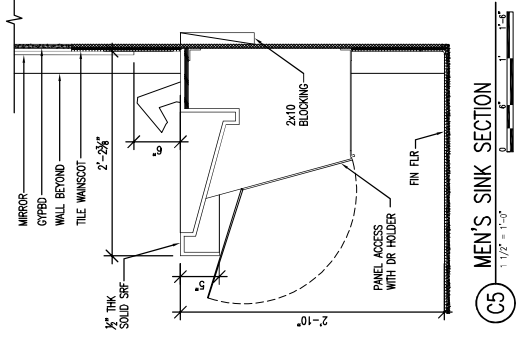
STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER SERVICE  
 KALELOA, HAWAII  
 BUILDING 90T  
 AS NOTED  
 SERIAL: CA-202209-C  
 FEDERAL PROJECT NO. 15H0001A1  
 SHEET 37 OF 42  
 A-921

NO.	DATE	DESCRIPTION

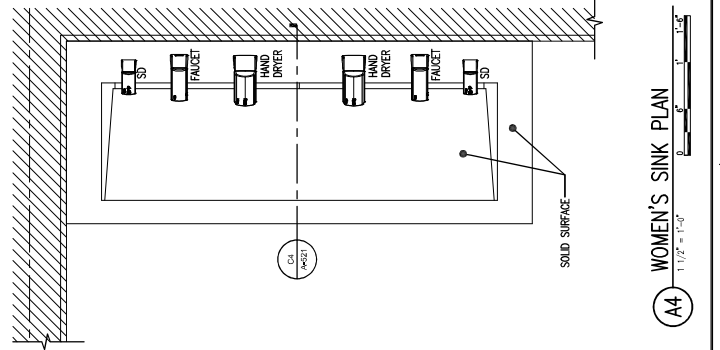
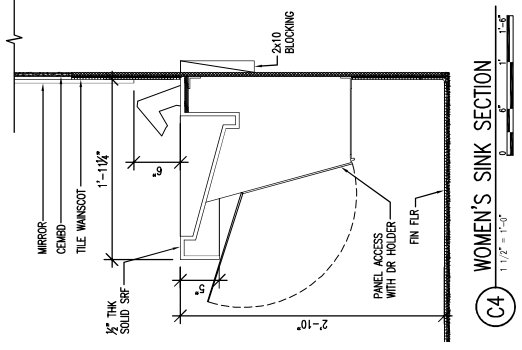
100% FINAL DESIGN  
 DATE: 03/22/2024  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 DESIGNED BY: [Signature]  
 PROJECT NO. 15H0001A1  
 SHEET 37 OF 42

DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 KALELOA, HAWAII  
 BUILDING 90T  
 AS NOTED  
 SERIAL: CA-202209-C  
 FEDERAL PROJECT NO. 15H0001A1  
 SHEET 37 OF 42  
 A-921

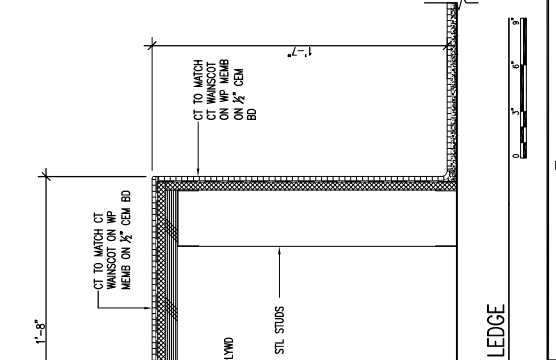
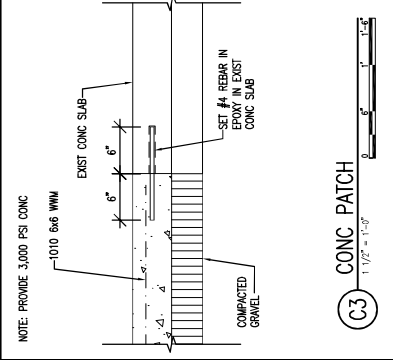
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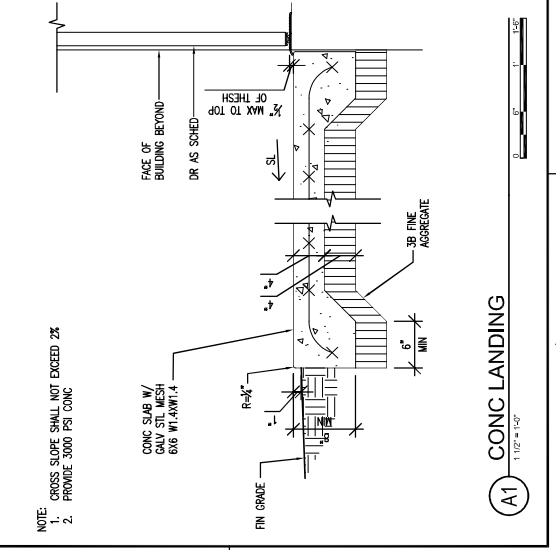
4



3



2



1

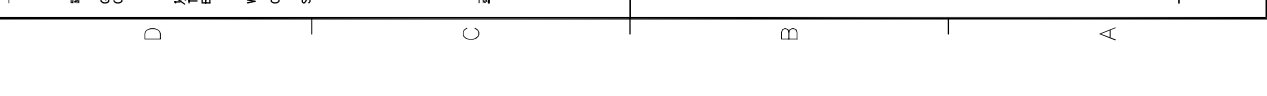
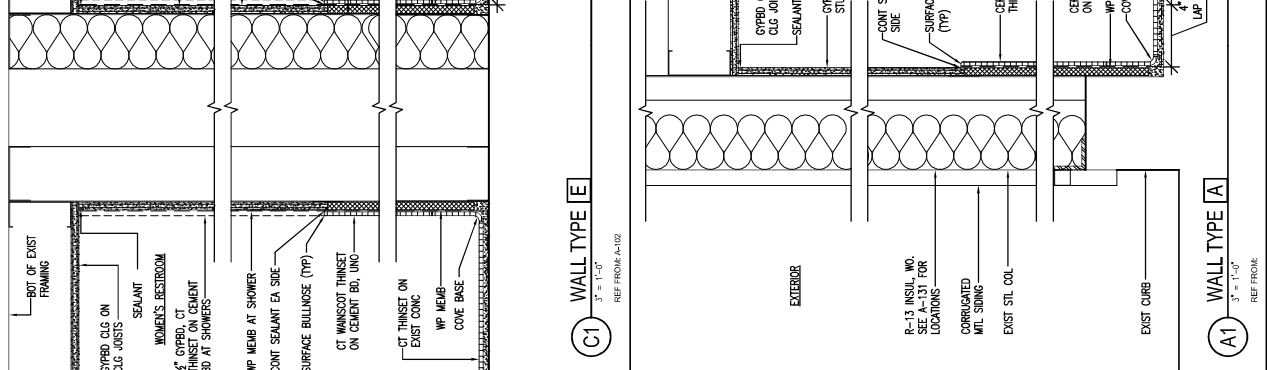
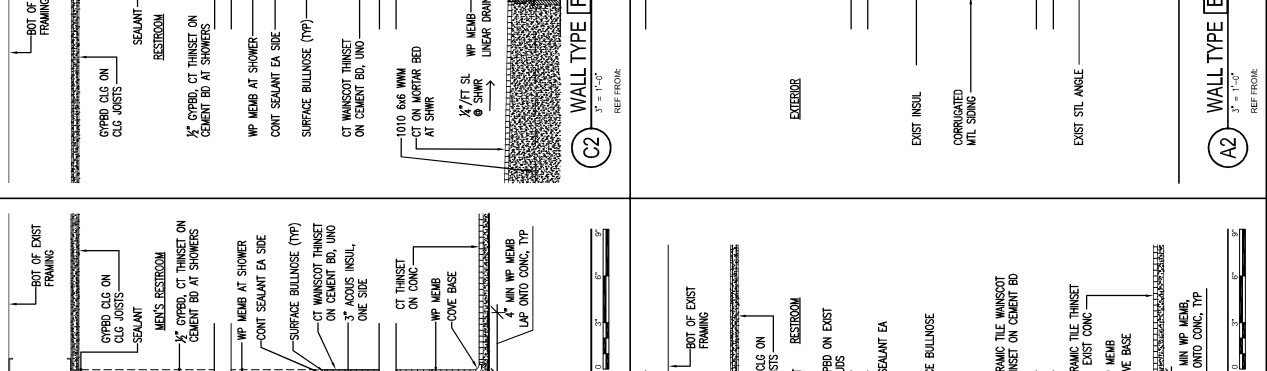
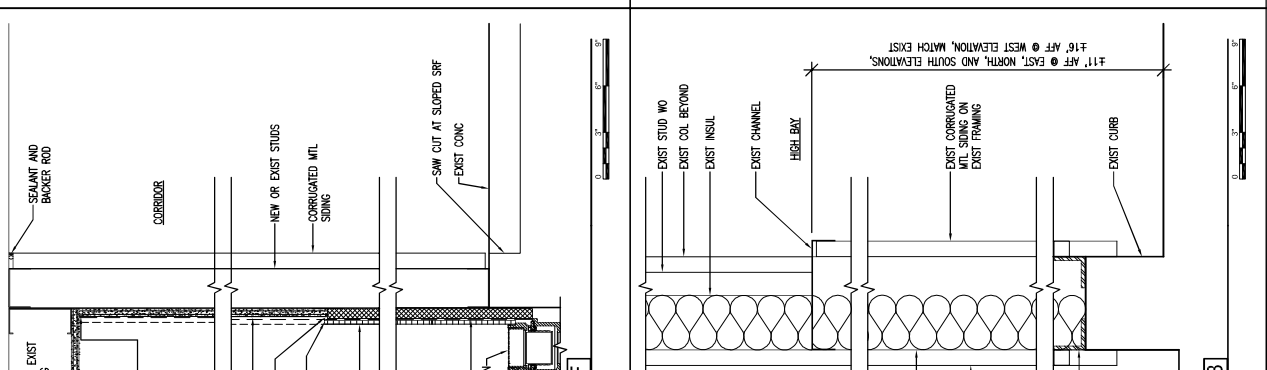
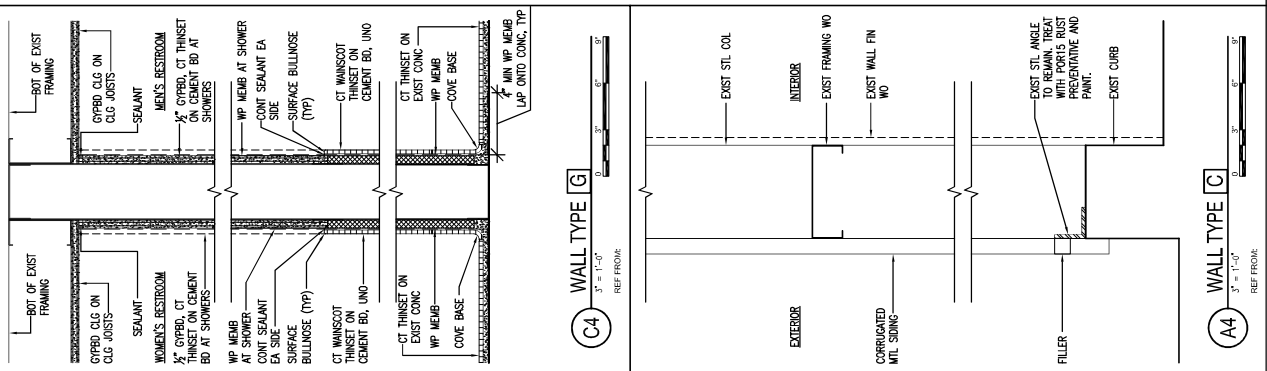
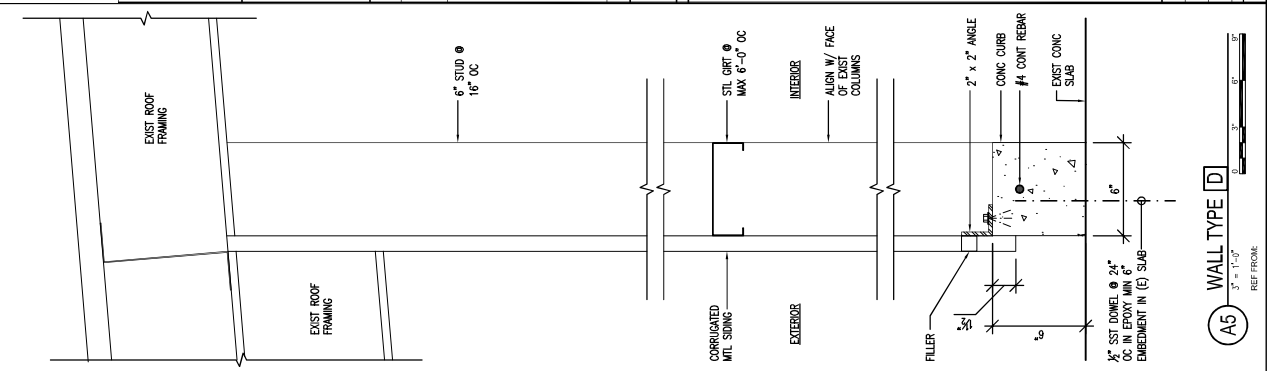
NOTE:  
 1. CROSS SLOPE SHALL NOT EXCEED 2%  
 2. PROVIDE 3000 PSI CONC

D

C

B

A





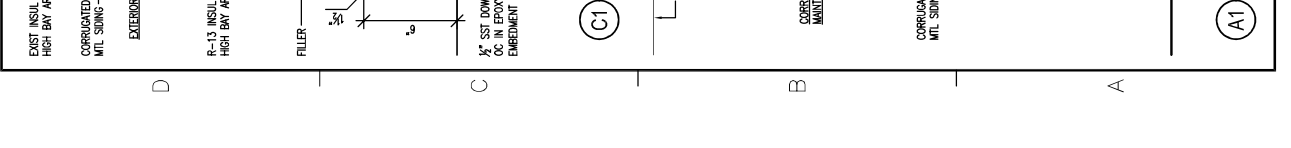
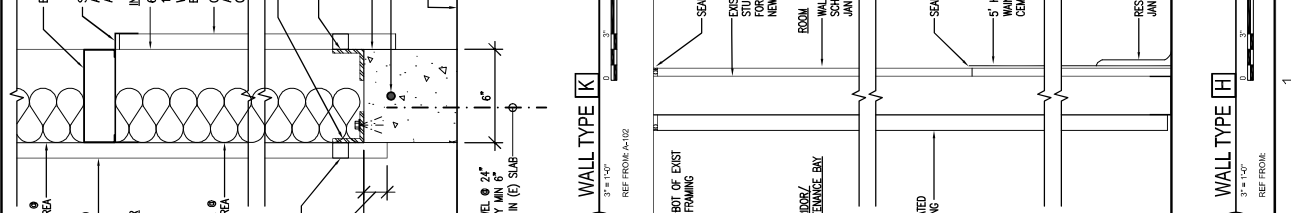
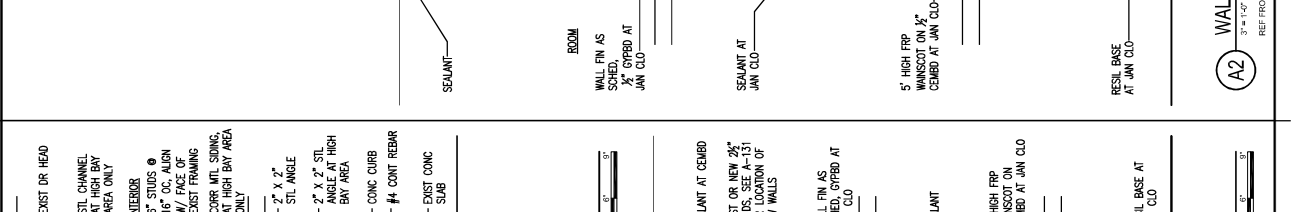
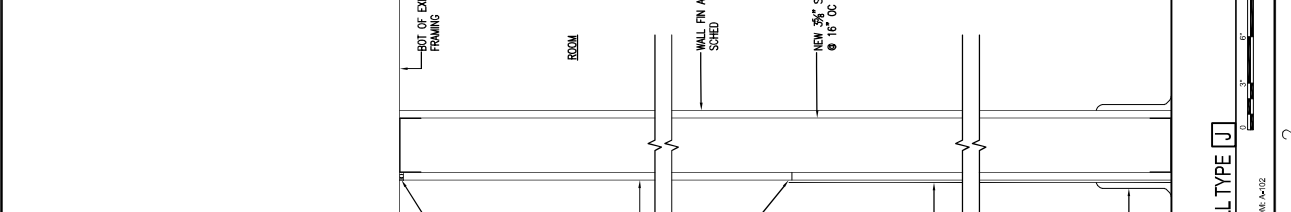
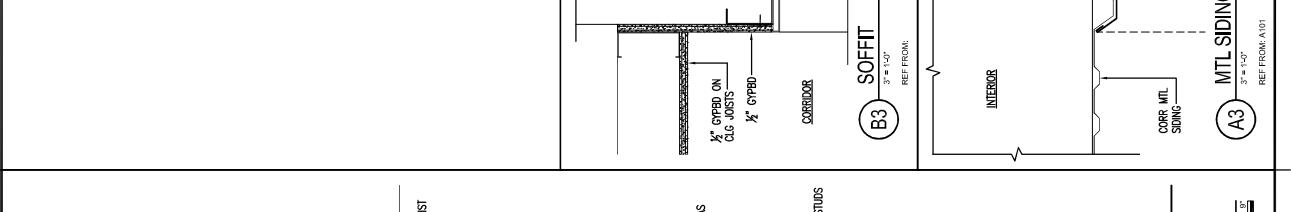
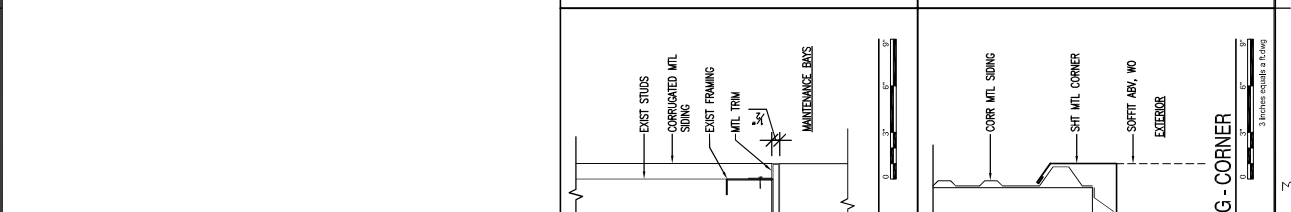
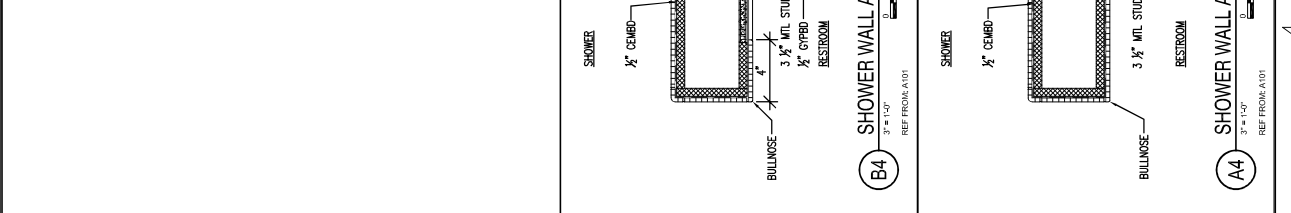
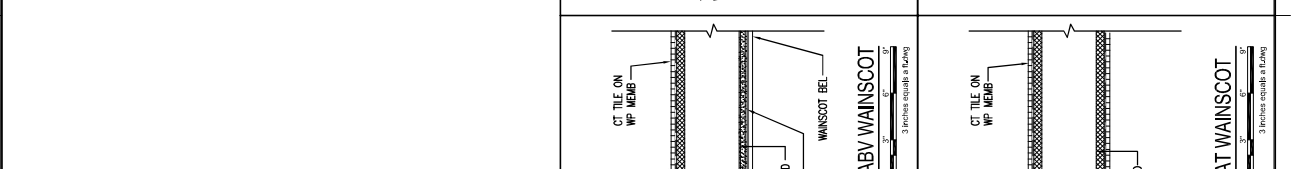
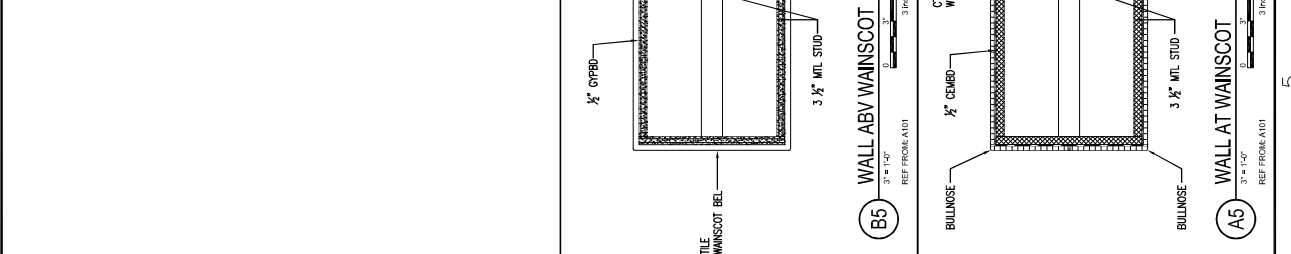
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 DATE: 03/22/2024  
 SHEET NO. 14  
 SHEET TOTAL 14

DESIGN AND PROJECT MANAGER: BRUCE  
 DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 KALELOA, HAWAII

AS NOTED  
 BUILDING 907  
 PROJECT NO. CA-20209-C  
 FEDERAL PROJECT NO. 14M00141  
 SHEET 14 OF 14  
**A-592**

WALL SECTIONS

1 2 3 4 5



1 2 3 4 5

100% FINAL DESIGN  
 DATE: 03/22/2024  
 SHEET NO. 14  
 SHEET TOTAL 14

DESIGN AND PROJECT MANAGER: BRUCE  
 DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 KALELOA, HAWAII

AS NOTED  
 BUILDING 907  
 PROJECT NO. CA-20209-C  
 FEDERAL PROJECT NO. 14M00141  
 SHEET 14 OF 14  
**A-592**



DESIGN AND PROJECT MANAGER: BRUNNEN  
 KALELOA, HAWAII  
 DEPARTMENT OF DEFENSE  
 BUILDING 907  
 SCALE: AS NOTED  
 SHEET: 41  
 A-601

DATE: 03/22/2024  
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 CHECKED BY: [Name]  
 100% FINAL DESIGN

DATE: 03/22/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 100% FINAL DESIGN

DATE: 03/22/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 100% FINAL DESIGN

DATE: 03/22/2024  
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DATE: 03/22/2024  
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 100% FINAL DESIGN

DATE: 03/22/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 100% FINAL DESIGN

DATE: 03/22/2024  
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 CHECKED BY: [Name]  
 100% FINAL DESIGN

DATE: 03/22/2024  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 100% FINAL DESIGN

**ROOM FINISH SCHEDULE**

ROOM NAME	FLOOR	BASE	WALL A	WALL B	WALL C	WALL D	CEILING	REMARKS
HIGH BAY AREA	CONC	---	EXIST, MTL	EXIST	EXIST	---	---	---
STAR 1	CONC	---	EXIST	EXIST	EXIST	---	---	---
FUTURE NURSING MOTHERS RM	CONC	---	---	---	---	---	---	---
ELEC RM	CONC	RESIL	GYP	GYP	GYP	GYP	---	PROVIDE BASE AT WALLS W/ NEW FIN ONLY SEE A1/A-132 FOR FIN LOCATION
TELECOM RM	CONC	---	---	---	---	---	---	---
HAN CLO	CONC	---	---	---	---	---	---	---
FUTURE BREAK RM	CONC	---	---	---	---	---	---	---
CORRIDOR	CONC	---	MTL	GYP	MTL	GYP	---	---
WOMEN'S RESTROOM	CT	---	CT	CT	CT	GYP	---	---
MEN'S RESTROOM	CONC	---	---	---	---	---	---	---
WH CLO	CONC	---	---	---	---	---	---	---
STAR 2	CONC	---	---	---	---	---	---	---
MAINTENANCE BAYS	CONC	---	---	---	---	---	---	---
UPPER FLOOR	EXIST	---	---	---	---	---	---	---

**PAINT COLORS**

ITEM	DESCRIPTION	DATE
P1	GYPD INTERIOR WALLS, BENJAMIN MOORE, COLOR: 968 "DUNK WHITE"	
P2	GYPD CEILINGS, BENJAMIN MOORE, COLOR: 889 "OFFROAD WHITE"	

**MATERIAL KEY**

ITEM	DESCRIPTION	DATE
RESIL 1	ALURO RESULENT BASE; MATCH FLOOR	
---	NO FIN	
EXIST	EXIST FIN TO REMAIN	
MTL	MTL J-RIB SILING	
GYP	1/2" GYPD	
CT 2	CT WAINSCOT, FULL HT CT AT SHOWERS	
---	NO FIN	
CEILING	GYPD	
---	NO FIN	

**MATERIAL SCHEDULE**

ITEM	DESCRIPTION	DATE
1	DALITILE, KERISTONES, COLORBODY PORCELAIN MOSAICS, 1x1 MOSAIC, COLOR/ PATTERN: DK22 "ALMOND BLEND", FINISH: WHITE	
2	CROSSVILLE, RETRO ACTIVE 2.0, PORCELAIN STONE, 12x24, COLOR: RETO4 "EMPRESS WHITE", FINISH: UNPOLISHED WITH CROSS-SHEEN (UPS)	
3	BIRKE, UNICOLOR, MERKER VINYL-TYPE TV, SIZE: 4", COLOR: 204 "GRAY (F06)"	
4	CRANE COMPOSITES, VARETEX, TEXTURE: LINEN, COLOR: 1130 "COTTON WHITE"	
5	CORIAN, COLOR: "DOESKIN"	
6	BRADLEY, BROWMAR SOLID PLASTIC, COLOR: M277 "TOFFEE"	

**DOOR SCHEDULE**

DOOR NO.	DOOR SIZE (W X H)	TYPE	THICKNESS	HEAD	LAMB	THRESH	HOWL SET	SHEET #	REMARKS
101	3'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	03	A-511	---
102	4'-6" X 4'-0"	D	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
103	4'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	02	---	EXIST DR AND FRAME TO REMAIN
104	4'-0" X 7'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
105	4'-0" X 7'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
106	4'-0" X 7'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
107	4'-0" X 7'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
108	3'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	03	A-511	---
109	3'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	03	A-511	---
110	4'-0" X 14'-0"	E	---	A1	A1	06	A-511	---	SEE DOOR NOTE 1
111	3'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	03	A-511	---
112	4'-0" X 7'-0"	A	1 1/2"	C2	C2	C2	03	---	EXIST DR AND FRAME TO REMAIN
113	3'-0" X 7'-0"	A	1 1/2"	C3	C3	C3	04	A-511	---
114	3'-0" X 7'-0"	C	1 1/2"	C3	C3	C3	04	A-511	---
115	4'-0" X 7'-0"	A	1 1/2"	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
116	4'-0" X 10'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
117	4'-0" X 10'-0"	E	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
118	4'-0" X 7'-0"	A	1 1/2"	C4	C4	C4	06	A-511	---
119	4'-0" X 7'-0"	B	1 1/2"	C4	C4	C4	06	A-511	---
120	3'-0" X 7'-0"	A	1 1/2"	C4	C4	C4	04	---	---
121	3'-0" X 7'-0"	A	1 1/2"	C4	C4	C4	04	---	---
122	3'-0" X 7'-0"	B	1 1/2"	C4	C4	C4	05	A-511	---
123	3'-0" X 7'-0"	B	1 1/2"	C4	C4	C4	05	---	---
124	2'-8" X 7'-0"	A	1 1/2"	C4	C4	C4	05	---	---
125	3'-0" X 7'-0"	A	1 1/2"	C4	C4	C4	06	A-511	---
126	3'-0" X 7'-0"	A	1 1/2"	C4	C4	C4	06	A-511	---
201	4'-0" X 7'-0"	A	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN
202	4'-0" X 7'-0"	A	---	---	---	---	---	---	EXIST DR AND FRAME TO REMAIN

**WINDOW SCHEDULE**

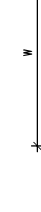
WINDOW NO.	WINDOW SIZE (W X H)	TYPE	HEAD	LAMB	SILL	REMARKS
101	6'-0" X 4'-0"	A	A3	A3	A3	---
102	6'-0" X 4'-0"	A	A3	A3	A3	---
103	6'-0" X 4'-0"	A	A3	A3	A3	---
104	6'-0" X 4'-0"	A	A3	A3	A3	---
105	6'-0" X 4'-0"	A	A3	A3	A3	---
106	4'-8" X 4'-4"	D	---	---	---	EXIST LOWERS AND FRAME TO REMAIN
107	4'-8" X 4'-4"	D	---	---	---	EXIST LOWERS AND FRAME TO REMAIN
108	6'-0" X 4'-0"	A	A3	A3	A3	---
109	6'-0" X 4'-0"	A	A3	A3	A3	---
110	6'-0" X 4'-0"	A	A3	A3	A3	---
111	6'-0" X 4'-0"	A	A3	A3	A3	---
112	6'-0" X 4'-0"	A	A3	A3	A3	---
113	6'-0" X 4'-0"	A	A3	A3	A3	---
114	6'-0" X 4'-0"	A	A3	A3	A3	---
115	12'-0" X 2'-4"	C	M4	M4	M4	---
116	12'-0" X 2'-4"	C	M4	M4	M4	---
117	12'-0" X 2'-4"	C	M4	M4	M4	---
118	12'-0" X 2'-4"	C	M4	M4	M4	---
119	12'-0" X 2'-4"	C	M4	M4	M4	---
120	12'-0" X 2'-4"	C	M4	M4	M4	---
121	12'-0" X 2'-4"	C	M4	M4	M4	---
122	12'-0" X 2'-4"	C	M4	M4	M4	---
123	12'-0" X 2'-4"	C	M4	M4	M4	---
124	4'-5" X 4'-5"	B	A5	A5	A5	---
125	6'-0" X 4'-0"	A	A3	A3	A3	---
126	6'-0" X 4'-0"	A	A3	A3	A3	---
127	4'-5" X 4'-5"	B	A5	A5	A5	---
201	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN
202	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN
203	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN
204	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN
205	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN
206	4'-0" X 4'-5"	---	---	---	---	EXIST METAL MESH AND FRAME TO REMAIN

**DOOR NOTES:**

- NEW DOOR AND FRAME IN EXIST OPENING
- PROVIDE MIN 3.5 SF OF FREE AREA TOTAL AT LOWERS IN DOOR 113 AND WINDOW 124.
- PROVIDE MIN 4 SF OF FREE AREA TOTAL AT LOWERS IN DOOR 114 AND WINDOW 127.

**WINDOW NOTES:**

- PROVIDE MIN 3.5 SF OF FREE AREA TOTAL AT LOWERS IN DOOR 113 AND WINDOW 124.
- PROVIDE MIN 4 SF OF FREE AREA TOTAL AT LOWERS IN DOOR 114 AND WINDOW 127.



**MECHANICAL GENERAL NOTES:**

1. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE CONTRACTING OFFICER ANY MAJOR DEVIATIONS FROM THE PLANS DUE TO UNFORESEEN OR VARYING FIELD CONDITIONS.
2. THE ENTIRE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REGULATIONS AND CODES, INCLUDING BUT NOT LIMITED TO THE INTERNATIONAL BUILDING CODE, UNIFORM FIRE CODE, NFPA 13, NATIONAL ELECTRICAL CODE, ASME BOILER & PRESSURE VESSEL CODE, ASME PRESSURE PIPING CODE, AND ALL OTHER AGENCIES HAVING JURISDICTION.
3. THE CONTRACTOR SHALL PROVIDE, FINISH AND INSTALL ALL MATERIAL AND EQUIPMENT INCLUDING CUTTING AND PATCHING AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. "PROVIDE" SHALL MEAN TO PROCURE ALL NECESSARY AND SPECIFIED MATERIALS AND INSTALL A COMPLETE WORKING INSTALLATION AS REFERENCED ON CONSTRUCTION DRAWINGS.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, LICENSES AND INSPECTIONS.
5. INSTALL ALL EQUIPMENT AND MATERIALS IN A FIRST CLASS MANNER CONFORMING TO RECOGNIZED COMMERCIAL STANDARDS.
6. PAINT ALL EXPOSED MATERIALS TO MATCH ADJACENT SURFACES.
7. CONTRACTOR SHALL PATCH AND FINISH ALL EXPOSED MATERIALS AND NEW CONSTRUCTION TO MATCH EXISTING SURFACES OR AS INDICATED.
8. ALL PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS OR PARTITIONS SHALL BE PROPERLY FIRE STOPPED WITH AN APPROVED FIRE STOPPING MATERIAL. ALL PENETRATIONS THROUGH FLOORS BETWEEN FLOORS, REFER TO ARCHITECTURAL SPECIFICATIONS.
9. VENTILATION:
  - A. DUCT SIZES SHOWN ARE NET.
  - B. DUCTWORK: GALVANIZED SHEET STEEL OF NOT LESS THAN 24 GAUGE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.
  - C. FLEX DUCT: THERMAFLEX MAKE INSULATED CLASS 1 4R DUCT.
10. SUBMIT A WRITTEN TEST AND BALANCE REPORT ON THE COMPLETED SYSTEM.
11. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, PROVIDE ADEQUATE CLEARANCES FOR MAINTENANCE.
12. PROVIDE CONTROL DEVICES AND CONTROL WIRING AS INDICATED. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL.
13. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON RECORD DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE APPROVED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT A WRITTEN PROPOSAL FOR THE PROPOSED ALTERNATE METHODS TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVALS OBTAINED.
14. PRIOR TO INSTALLATION PROVIDE SHOP DRAWINGS FOR THE LAYOUT OF EQUIPMENT AND PIPING SHOWING COORDINATION OF ALL WORK WITH ALL OTHER TRADES INCLUDING MECHANICAL, FIRE SPRINKLER, FIRE ALARM, CONTROLS, ELECTRICAL AND COMMUNICATION SYSTEMS. SUBMIT COORDINATION DRAWINGS FOR REVIEW PRIOR TO INSTALLATION TO ENSURE ADEQUATE ACCESS TO THE SPACES AND OVERLAP HVAC, PLUMBING, FIRE SPRINKLER, ELECTRICAL, AND FIRE ALARM SYSTEMS AND ALL CONFLICTS BETWEEN TRADES SHALL BE NOTED AND RESOLVED.
15. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ARCHITECT BEFORE MAKING ANY PENETRATIONS THROUGH STRUCTURAL MEMBERS, WALLS, AND SLABS.

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
CEF	CEILING EXHAUST FAN
CW	COLD WATER
CONT	CONTINUE
CFM	CUBIC FEET PER MINUTE
EWH	ELECTRIC WATER HEATER
EA	EXHAUST AIR
EAG	EXHAUST AIR GRILLE
EF	EXHAUST FAN
(E)	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GPF	GALLON PER FLUSH
GPM	GALLON PER MINUTE
HW	HOT WATER
IN	INCHES
POC	POINT OF CONNECTION
POR	POINT OF REMOVAL
PRV	POWER ROOF VENTILATOR
S	SANITARY
SF	SQUARE FEET
TYP.	TYPICAL
V	VENT
VD	VOLUME DAMPER
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTOR
WACU	WINDOW AIR CONDITIONING UNIT



**KALAELOA B90T RESTORATION**

DESIGN AND PROJECT MANAGEMENT OFFICE  
KALAELOA, HAWAII

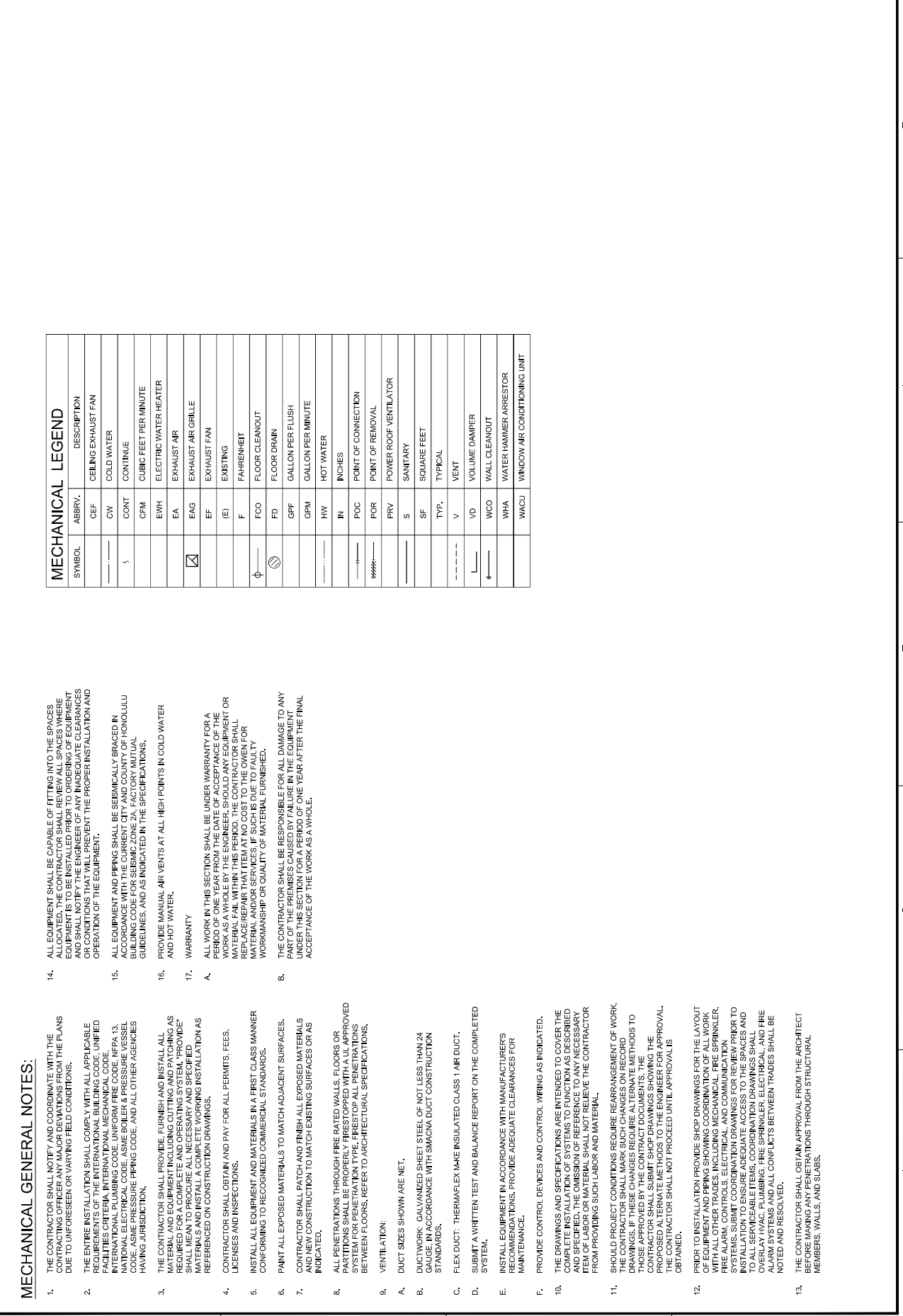
HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGEMENT OFFICE  
KALAELOA, HAWAII

BUILDING 90T

AS NOTED

DATE: 08/27/2024  
PROJECT NO.: CA-202009-C  
FEDERAL PROJECT NO.: 15H00014  
SHEET NO.: 11 OF 12

**M-001**





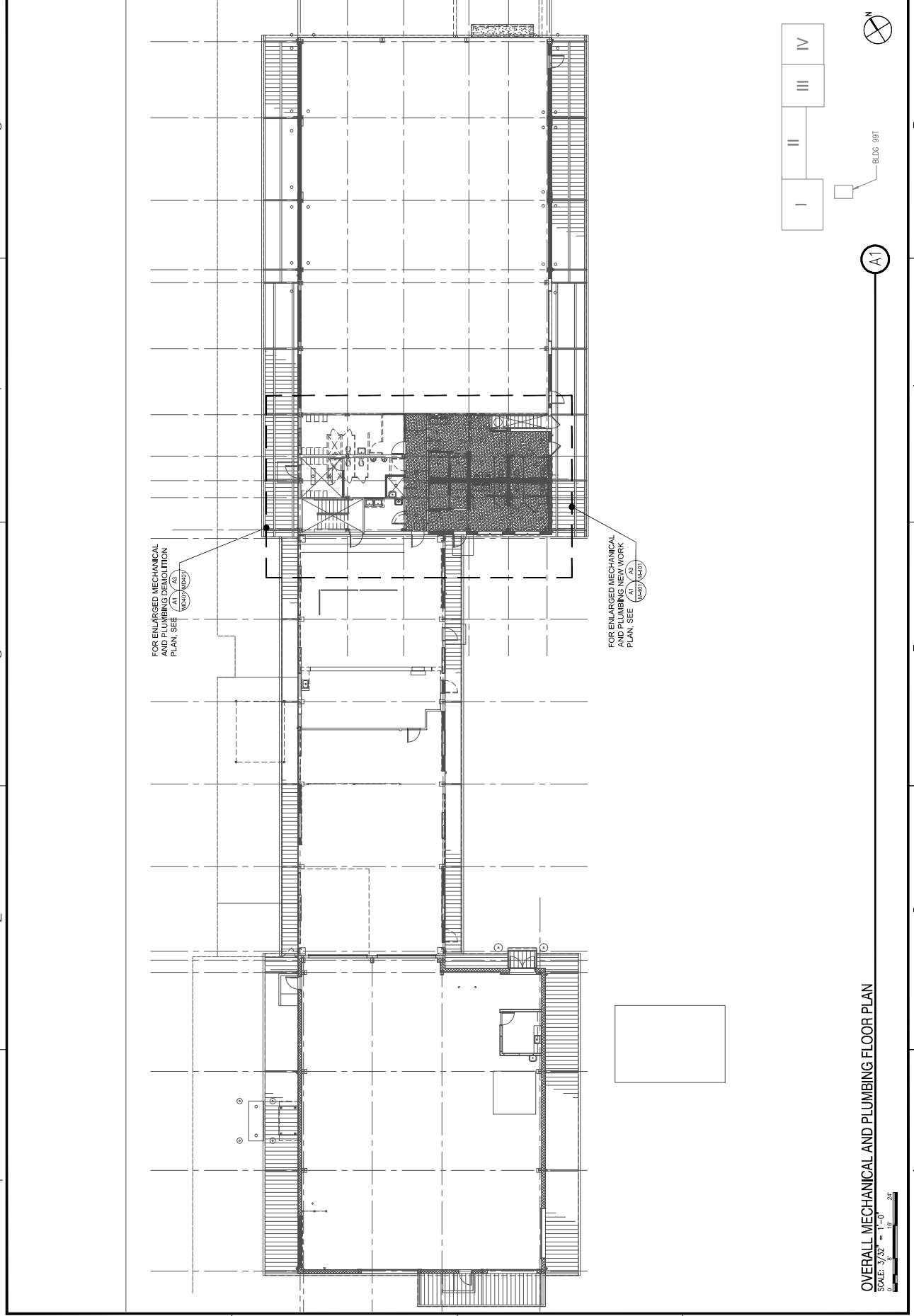
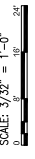
NO.	DESCRIPTION	DATE	BY

PROFESSIONAL ENGINEER  
 NO. 11791-CA  
 HAWAII  
 A. J. JOHNSON

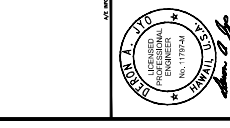


(A1)

OVERALL MECHANICAL AND PLUMBING FLOOR PLAN  
 SCALE: 3/32" = 1'-0"







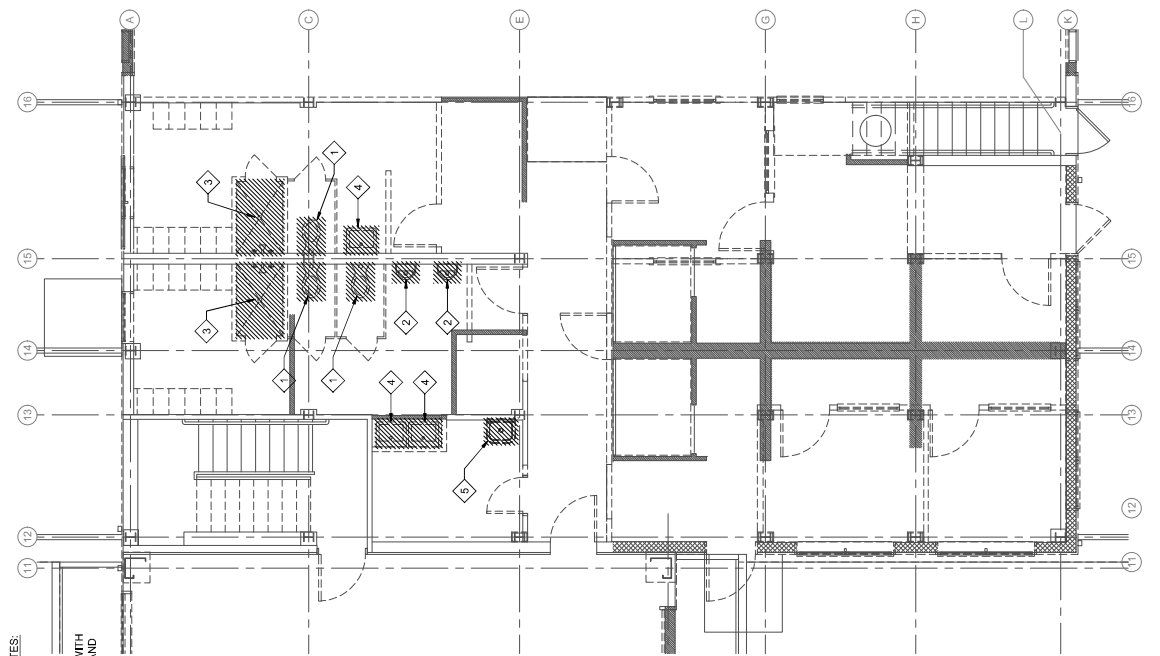
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 DATE: 03/27/2024  
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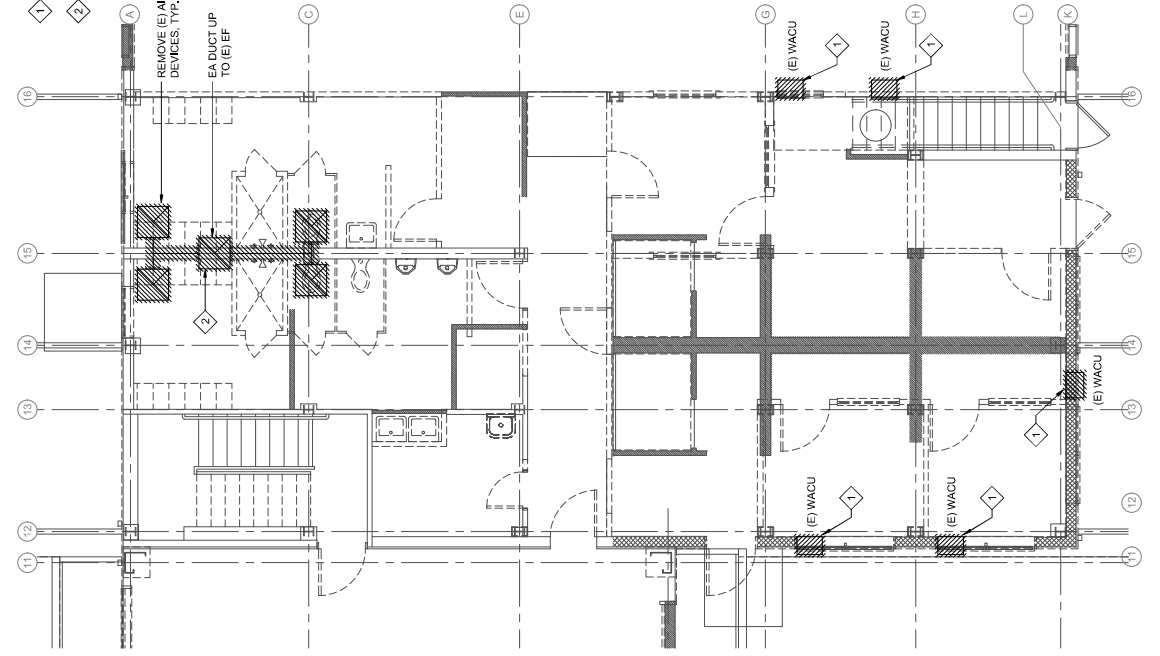
HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 BUILDING 907  
 ENLARGED DEMOLITION MECHANICAL AND PLUMBING FLOOR PLAN

AS NOTED  
 SHEET NO. CH-202209-C  
 FEDERAL PROJECT NO. 15H00014-01  
 SCALE AS SHOWN  
 MD401

- PLUMBING DEMO WORK NOTES:**
- REMOVE EXISTING WATER CLOSET AND APPURTENANCES. REMOVE ALL ROUGH-IN PIPING INCLUDING SANITARY, VENT, AND WATER PIPING. CUT AND CAP SANITARY AND VENT PIPING BELOW SLAB. REMOVE AND PATCH UP TO FLOORS. PATCH SLAB TO MATCH EXISTING.
  - REMOVE EXISTING URINALS AND APPURTENANCES. REMOVE ALL ROUGH-IN PIPING INCLUDING SANITARY, VENT, AND WATER PIPING. CUT AND CAP SANITARY PIPING BELOW SLAB. REMOVE PIPING UP TO FLOORS. PATCH SLAB TO MATCH EXISTING.
  - REMOVE EXISTING SHOWER AND APPURTENANCES. REMOVE ALL ROUGH-IN PIPING INCLUDING SANITARY, VENT, AND WATER PIPING. CUT AND CAP SANITARY AND VENT PIPING BELOW SLAB. REMOVE PIPING UP TO FLOORS. PATCH SLAB TO MATCH EXISTING.
  - REMOVE EXISTING LAVATORY AND APPURTENANCES. REMOVE ALL ROUGH-IN PIPING INCLUDING SANITARY, VENT, AND WATER PIPING. CUT AND CAP SANITARY PIPING BELOW SLAB. REMOVE PIPING UP TO FLOORS. PATCH SLAB TO MATCH EXISTING.
  - REMOVE EXISTING SINK AND APPURTENANCES. REMOVE ALL ROUGH-IN PIPING INCLUDING SANITARY, VENT, AND WATER PIPING. CUT AND CAP SANITARY PIPING BELOW SLAB. REMOVE PIPING UP TO FLOORS. PATCH SLAB TO MATCH EXISTING.



- MECHANICAL DEMO WORK NOTES:**
- REMOVE EXISTING WACU.
  - REMOVE EXISTING EF ALONG WITH ALL CONNECTED DUCTWORK AND AIR DEVICES.
  - REMOVE (E) AIR DEVICES. TYP.
  - EA DUCT UP TO (E) EF.
  - (E) WACU



A3

ENLARGED DEMOLITION PLUMBING FLOOR PLAN  
 SCALE: 1/4" = 1'-0"

A1

ENLARGED DEMOLITION MECHANICAL FLOOR PLAN  
 SCALE: 1/4" = 1'-0"

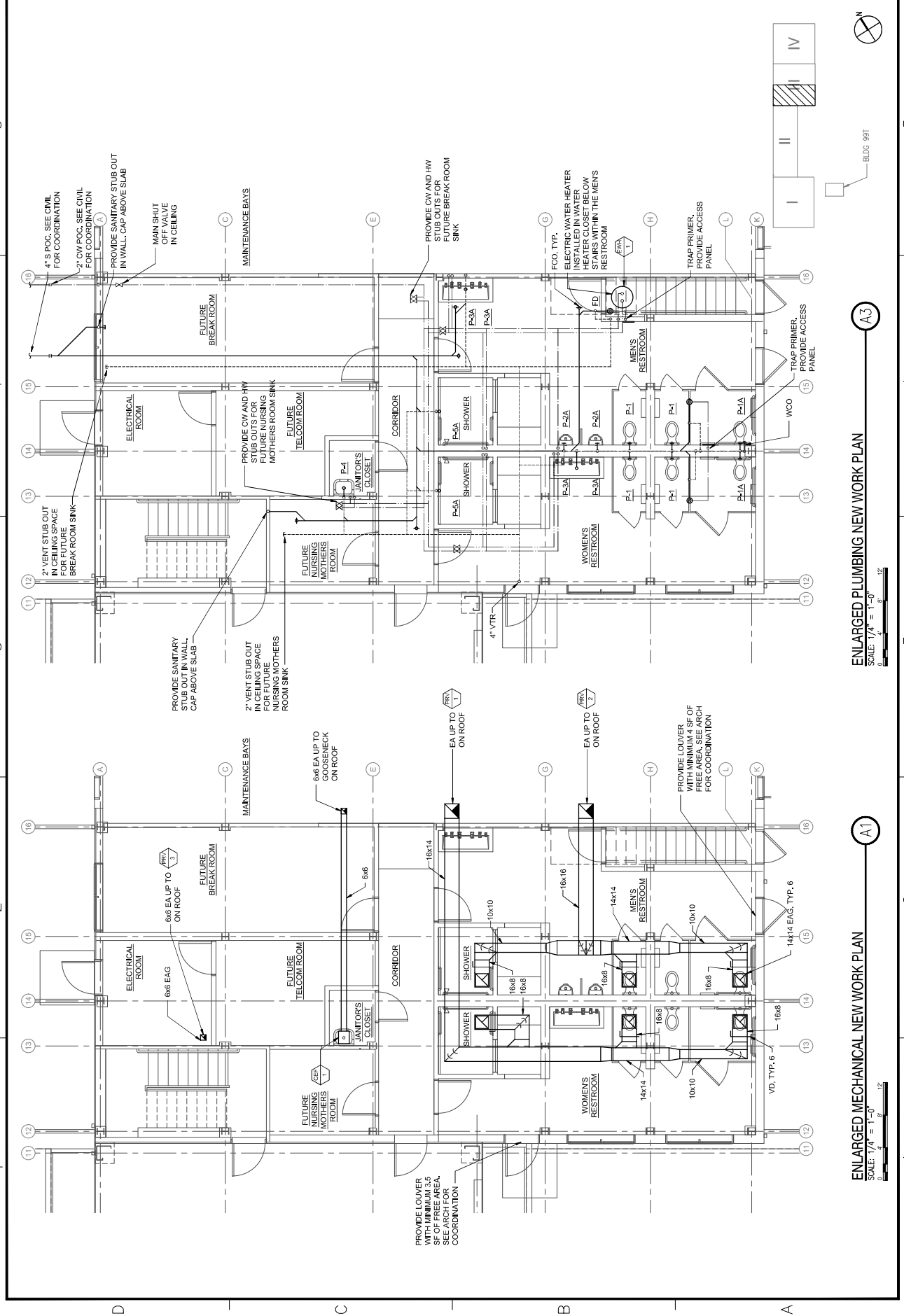


**PROFESSIONAL ENGINEER**  
**PLUMBING**  
 No. 13794-J

NO.	DATE	DESCRIPTION
1	03/27/2024	100% FINAL DESIGN

**DESIGN AND PROJECT MANAGER**  
 HAWAII ARMY NATIONAL GUARD  
 KALELOA, HAWAII

**AS NOTED**  
 BUILDING 90T  
 CH-202029-C  
 FEDERAL PROJECT NO. 15K00014  
 SHEET NO. M-401



BLDG 90T

A3

**ENLARGED PLUMBING NEW WORK PLAN**  
 SCALE: 1/4" = 1'-0"

A1

**ENLARGED MECHANICAL NEW WORK PLAN**  
 SCALE: 1/4" = 1'-0"



A. J. Y. O.  
 PROFESSIONAL ENGINEER  
 No. 11979-J  
 HAWAII

NO.	DATE	DESCRIPTION

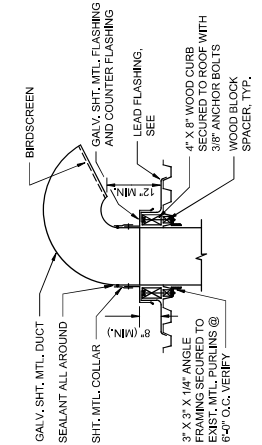
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 DATE: 03/27/2024  
 DESIGNED BY: [Redacted]  
 CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER OFFICE  
 KALELOA, HAWAII

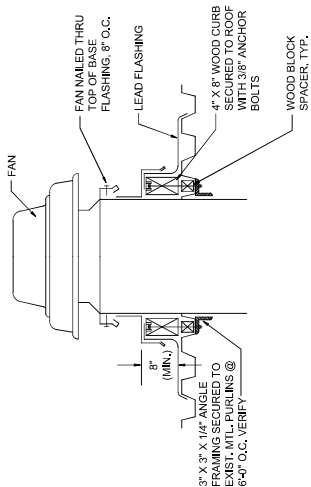
**KALAELOA B90T RESTORATION**  
 BUILDING 90T

AS NOTED  
 FEDERAL PROJECT NO. 15K000114  
 CONTRACT NO. CA-202209-C  
 SCALE AS SHOWN

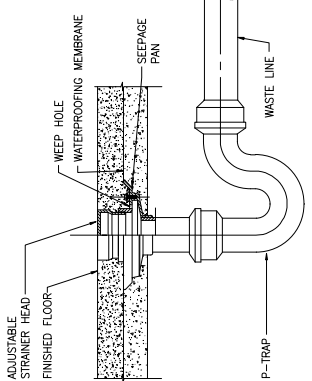
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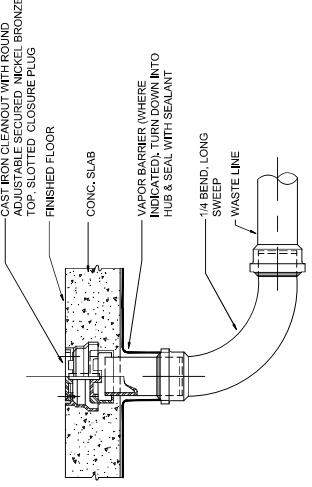
**C2** SCALE: NTS  
GOOSENECK DETAIL



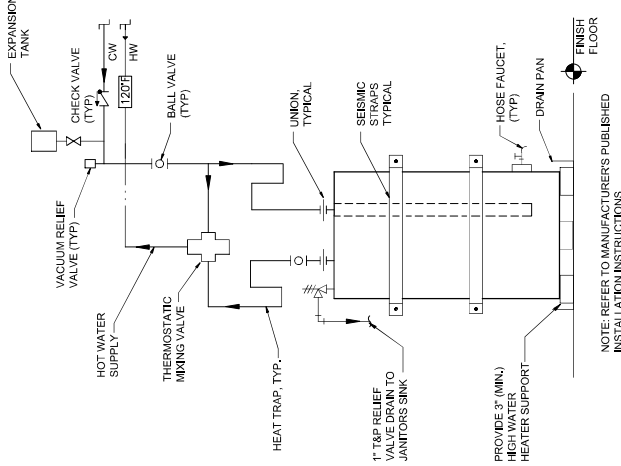
**C1** SCALE: NTS  
POWER ROOF VENTILATOR DETAIL



**A2** SCALE: NTS  
FLOOR DRAIN DETAIL



**A4** SCALE: NTS  
FLOOR CLEAN-OUT AT FINISHED FLOOR DETAIL



**A1** SCALE: NTS  
ELECTRIC WATER HEATER

NOTE: REFER TO MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS

**EXHAUST FAN SCHEDULE**

UNIT	AREA SERVED	LOCATION	FAN DATA			ELECTRICAL				REMARKS			
			MOTOR AIRFLOW (CFM) SIZE	TYPE	ESP (IN WATER)	V/P /HZ	FLA	RLA	MCA		MOCP	MAX DBA	
FRV-1	WOMENS RESTROOM	ROOF	POWER ROOF VENTILATOR	0.5 HP	1380	0.80	115 / 1 / 60	6.4	-	8	15	64	PROVIDE WITH INTEGRAL DISCONNECT SWITCH INTERLOCK WITH LIGHT SWITCH.
FRV-2	MENS RESTROOM	ROOF	POWER ROOF VENTILATOR	0.5 HP	1620	1.15	115 / 1 / 60	8.8	-	11	15	65	PROVIDE WITH INTEGRAL DISCONNECT SWITCH INTERLOCK WITH LIGHT SWITCH.
FRV-3	ELECTRICAL ROOM	ROOF	POWER ROOF VENTILATOR	0.25 HP	120	0.50	115 / 1 / 60	2.85	-	4	15	49	PROVIDE WITH INTEGRAL DISCONNECT SWITCH EXHAUST FAN SHALL BE ON 24/7.
CEF-1	JANITOR'S CLOSET	JANITOR'S CLOSET CEILING	EXHAUST FAN	61 W	50	0.50	115 / 1 / 60	0.46	-	-	-	18	EXHAUST FAN SHALL BE ON 24/7.

**ELECTRIC WATER HEATER SCHEDULE**

UNIT	LOCATION	CAPACITY (GALLONS)	HEIGHT (IN)	DIAMETER (IN)	WATER INLET (F)	WATER OUTLET (F)	INPUT (WATTS)	UPPER ELEMENT WATTAGE	LOWER ELEMENT WATTAGE	V / P / HZ	FLA	RLA	MCA	MOCP	REMARKS
EW-1	MENS RESTROOM EWH CLOSET	80	60	24	70	140	12100	6050	6050	208 / 3 / 60	50	-	-	-	-

**EXPANSION TANK SCHEDULE**

UNIT	LOCATION	SYSTEM SERVED	ACCEPTANCE VOLUME (GAL)	PRECHARGE (PSI)	REMARKS
ET-1	MENS RESTROOM EWH CLOSET	EW-1 DOMESTIC HW	5	60	

**PLUMBING FIXTURE SCHEDULE**

SYMBOL	DESCRIPTION	TRAP SIZE	WASTE	VENT	HOT WATER	COLD WATER	NOTES
P-1	WATER CLOSET, WALL MOUNTED FLUSH VALVE	INTEGRAL	4"	2"	-	1"	1.25 GPF LOW FLOW FLUSH TYPE
P-1A	WATER CLOSET, WALL MOUNTED FLUSH VALVE, ACCESSIBLE	INTEGRAL	4"	2"	-	1"	1.25 GPF LOW FLOW FLUSH TYPE
P-2	URNAL, WALL MOUNTED, LOW FLOW FLUSH VALVE, ACCESSIBLE	INTEGRAL	2"	2"	3/4"	3/4"	1.25 GPF LOW FLOW FLUSH VALVE
P-2A	URNAL, WALL MOUNTED, LOW FLOW FLUSH VALVE, ACCESSIBLE	INTEGRAL	2"	2"	3/4"	3/4"	1.25 GPF LOW FLOW FLUSH VALVE
P-3A	LAVATORY, DUAL FAUCET WITH TROUGH BASIN, ACCESSIBLE	1-1/4"	2"	2"	1/2"	1/2"	0.5 GPM LOW FLOW INTEGRATED SINK SYSTEM WITH SOAP DISPENSER AND HAND DRYER, SENSOR OPERATED. PROVIDE MIXING VALVES PER ASSE 1070
P-4	SERVICE SINK	3"	2"	2"	3/4"	3/4"	2.2 GPM
P-5A	SHOWER, ACCESSIBLE	2"	2"	2"	1/2"	1/2"	1.5 GPM SHOWER HEAD, PROVIDE WITH THERMOSTATIC MIXING VALVE, HANDSPRAYER WITH ON/OFF, SLIDE BAR, 60" FLEXIBLE METAL HOSE, PROVIDE WITH LINEAR DRAIN
FD	FLOOR DRAIN	2"	2"	2"	-	-	PROVIDE TRAP PRIMER

NOTES: 1. FIXTURES SHALL BE CERTIFIED LEAD FREE  
2. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS



NO.	DATE	DESCRIPTION	BY

100% FINAL DESIGN  
DATE: 03/27/2024  
DESIGNER: [Signature]

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGER: BRANCH  
KALELOA, HAWAII  
BUILDING 90T  
EQUIPMENT AND PLUMBING FIXTURE SCHEDULE

AS NOTED  
STATE PROJECT NO. CA-202209-C  
FEDERAL PROJECT NO. 15H000141  
SHEET NO. 12

M-601



**STATE OF HAWAII**  
**DEPARTMENT OF DEFENSE**  
**HAWAII ARMY NATIONAL GUARD**

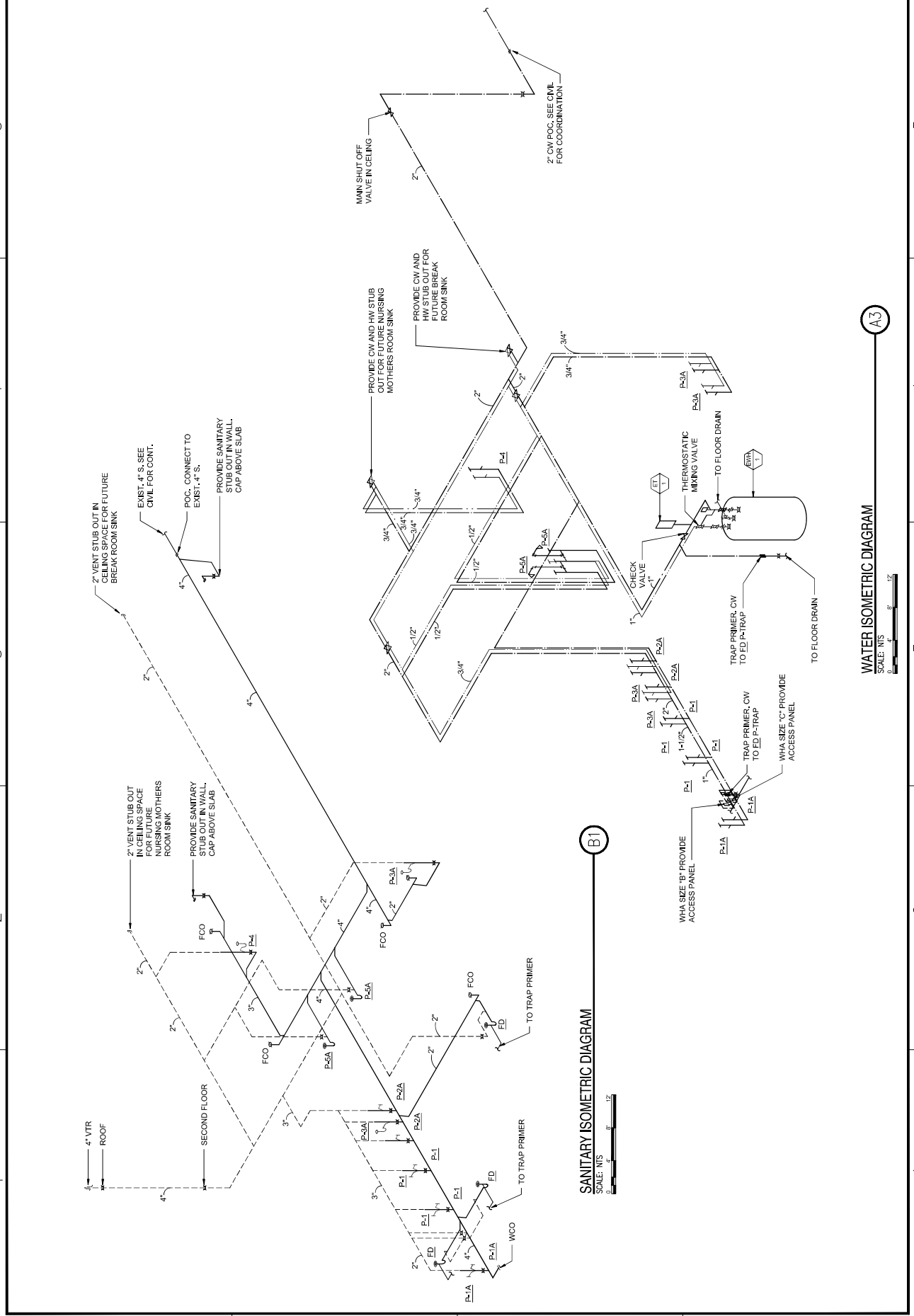
**DESIGN AND PROJECT MANAGER**  
**KALELOA, HAWAII**

**100% FINAL DESIGN**  
 DATE: 03/27/2024  
 DRAWN BY: [ ]  
 CHECKED BY: [ ]

**KALELOA B90T RESTORATION**  
**PLUMBING ISOMETRIC DIAGRAMS**

**AS NOTED**  
 BUILDING: 90T  
 PROJECT NO.: 202209-C  
 SHEET NO.: 150001A  
 SCALE: AS SHOWN

**M-901**



**(B1)**

**SANITARY ISOMETRIC DIAGRAM**  
 SCALE: NIS  
 0 1 2 3 4 5 6 7 8 9 10

**(A3)**

**WATER ISOMETRIC DIAGRAM**  
 SCALE: NIS  
 0 1 2 3 4 5 6 7 8 9 10

1 2 3 4 5

1 2 3 4 5

D C B A

### ELECTRICAL SYMBOL LIST / MOUNTING HEIGHT SCHEDULE

MOUNTING HEIGHT FROM FLOOR TO TOP	SYMBOL		DESCRIPTION
	EXISTING	NEW	
			LUMINAIRE, 1'x4' NOMINAL, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE
			LUMINAIRE, 1'x4' NOMINAL, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE, WITH INTEGRAL EMERGENCY BATTERY PACK
			LUMINAIRE, 2'x4' NOMINAL, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE
			LUMINAIRE, 2'x4' NOMINAL, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE, WITH INTEGRAL EMERGENCY BATTERY PACK
			LUMINAIRE, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE
			LUMINAIRE, MOUNTING STYLE AS INDICATED IN LIGHT FIXTURE SCHEDULE, WITH INTEGRAL EMERGENCY BATTERY PACK
			LUMINAIRE, WALL MOUNTED
			LUMINAIRE, WALL MOUNTED, WITH INTEGRAL EMERGENCY BATTERY PACK
			ILLUMINATED EXIT SIGN, WALL MOUNTED, DIRECTIONAL ARROWS AS INDICATED
			ILLUMINATED EXIT SIGN, CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED
46"			LIGHT SWITCH, WALL MOUNTED, 1P20A, 120/277V, 1HP MAXIMUM
46"			LIGHT SWITCH, WALL MOUNTED, 1P20A, 120/277V, 1HP MAXIMUM (LETTER INDICATES LUMINAIRES CONTROLLED)
46"			LIGHT SWITCH, THREE WAY SWITCH, WALL MOUNTED, 20A, 120/277V
46"			LIGHT SWITCH, WALL MOUNTED, LOW-VOLTAGE CONTROLS
46"			WALL BOX SWITCH/OCCUPANCY SENSOR, SELF-CONTAINED DUAL-TECHNOLOGY TYPE, 800W MINIMUM, 120/277V, WALL MOUNTED
			OCCUPANCY SENSOR, CEILING MOUNTED
			POWER SUPPLY, LOW-VOLTAGE LIGHTING CONTROLS ROOM CONTROLLER

### NEC LABELING AND MARKING - NOTES:

- NEC SECTION 110.16(A) ARC-FLASH HAZARD WARNING (GENERAL); PROVIDE ARC FLASH HAZARD WARNING LABELING FOR ALL EQUIPMENT AS INDICATED IN NEC 110.16(A) AS REQUIRED.
- NEC SECTION 110.24 AVAILABLE FAULT CURRENT; PROVIDE MARKING OF SERVICE EQUIPMENT AS INDICATED IN NEC 110.24(A) AS REQUIRED. MARKING SHALL BE ENGRAVED NAMEPLATE. SERVICE EQUIPMENT AVAILABLE FAULT CURRENT INFORMATION STILL TO BE DETERMINED (PENDING INFORMATION FROM HECO).
- NEC 408.4(B) FIELD IDENTIFICATION REQUIRED. (SOURCE OF SUPPLY); PROVIDE MARKING OF EQUIPMENT AS INDICATED IN NEC 408.4(B) AS REQUIRED. MARKING SHALL BE ENGRAVED NAMEPLATE.

### FLOOD ELEVATION - NOTES:

- ARCHITECTURAL SHEET G-002 INDICATES FLOOD ZONE D.
- FLOOD HAZARD ZONE D DEFINITION FOR THE STATE OF HAWAII IS DEFINED AS: "UNSHEDD AREAS WHERE FLOOD HAZARDS ARE UNDETERMINED, BUT FLOODING IS POSSIBLE".

### ELECTRICAL SYMBOL LIST / MOUNTING HEIGHT SCHEDULE

MOUNTING HEIGHT FROM FLOOR TO TOP	SYMBOL		DESCRIPTION
	EXISTING	NEW	
18"			RECEPTACLE, WALL MOUNTED, DUPLEX, GROUNDING TYPE, 125V, NEMA TYPE 5-20R
18"			RECEPTACLE, WALL MOUNTED, DUPLEX, GFCI TYPE, 125V, NEMA TYPE 5-20R
18"			RECEPTACLE, WALL MOUNTED, DUPLEX, GFCI TYPE, WEATHER-RESISTANT DEVICE WITH WEATHERPROOF-WHILE-IN-USE COVER PLATE
			RECEPTACLE, WALL MOUNTED, DUPLEX, NEMA 5-20R, 6" ABOVE COUNTER TOP
			RECEPTACLE, WALL MOUNTED, DUPLEX, GFCI TYPE, 125V, NEMA 5-20, 6" ABOVE COUNTER TOP
60"			NON-FUSED DISCONNECT SWITCH, 3P30A UNLESS OTHERWISE NOTED, VOLTAGE TO MATCH CIRCUITING
			MANUAL MOTOR STARTER WITH THERMAL OVERLOAD (SINGLE POLE) 1HP MAXIMUM
			JUNCTION BOX, HORIZONTALLY MOUNTED
			MOTOR CONNECTION
			HOMERUN ARROW TO PANELBOARD, LETTER INDICATES PANELBOARD, NUMBERS INDICATES CIRCUITS, HASH MARKS INDICATES NUMBER OF CURRENT CARRYING CONDUCTORS. GROUND CONDUCTOR NOT SHOWN, NEUTRAL CONDUCTORS SHALL NOT BE USED FOR MORE THAN ONE BRANCH CIRCUIT.
			CONCEALED CONDUIT IN CEILING OR WALLS, 2#12 & 1#12 GND., UNLESS OTHERWISE NOTED.
			EXPOSED RACEWAY, PROVIDE RACEWAY SUPPORT STRAPS 8'-0" ON CENTER MAXIMUM, 2#12 & 1#12 GND., UNLESS OTHERWISE NOTED.

### WORK RELATED TO (HECO)

#### HAWAIIAN ELECTRIC COMPANY - NOTES:

- ALL WORK RELATED TO HECO SHALL BE PER HECO REQUIREMENTS AND STANDARDS.
- SEE HECO DRAWINGS FOR ADDITIONAL INFORMATION.
- ALL WORK SHALL COMPLY WITH HECO DRAWINGS.
- COORDINATE WITH HECO AS REQUIRED.
- CONCRETE PAD FOR HECO PADMOUNTED TRANSFORMER. SHALL BE PER HECO STANDARDS
- CONCRETE HANDHOLES FOR HECO SERVICE. SHALL BE PER HECO STANDARDS.
- FOR PROPOSED NEW (HECO) POLE P1:
  - POLE SHALL BE PER HECO.
  - POLE REQUIREMENTS SHALL BE (BY HECO).
  - EXACT LOCATION SHALL BE DETERMINED.
  - FOR EASEMENT (AS SHOWN ON THE DRAWINGS, BASED ON TOPOGRAPHICAL SURVEY PROVIDED); ALLOWABLE USE OF EASEMENT FOR PROPOSED NEW (HECO) POLE P1 IS SHOWN.
- FOR PROPOSED NEW (HECO) POLE P2:
  - POLE SHALL BE (BY HECO).
  - POLE REQUIREMENTS SHALL BE (BY HECO).
  - EXACT LOCATION SHALL BE DETERMINED.
  - OWNER OF PROPERTY IS BELIEVED TO BE THE STATE OF HAWAII
- FOR (HECO) POLES P1 AND P2:
  - LOCATION OF POLES SHALL BE PER (HECO) REQUIREMENTS.
  - LOCATION OF POLES SHALL BE PER (HECO) REQUIREMENTS.
  - LOCATION OF POLES SHALL BE FREE OF ALL EXISTING UTILITIES
- FUSES FOR HECO OVER-HEAD PRIMARY LINES:
  - FUSES WILL BE REQUIRED AT EITHER POLE P1 OR POLE P2.
  - HECO TO DETERMINE AT WHICH POLE FUSES WILL BE PLACED.
  - FUSES SHALL BE (BY HECO).
- FOR PROPOSED NEW (HECO) PAD MOUNTED TRANSFORMER:
  - NEW PAD MOUNTED TRANSFORMER TO BE PROVIDED (BY HECO).
  - PROVISION OF NEW HECO PAD MOUNTED TRANSFORMER (BY HECO) TO BE PROVIDED BY HECO CONTRACTOR.
  - ELECTRICAL CONTRACTOR TO COORDINATE INSTALLATION OF NEW HECO PAD MOUNTED TRANSFORMER WITH HECO.
  - SEE ONE-LINE DIAGRAM SHEET E-802 FOR ADDITIONAL INFORMATION.



*David O. Mendenhall*

DATE	APP

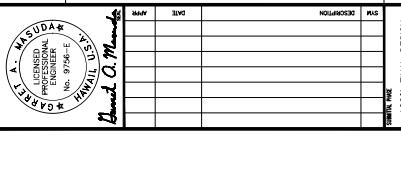
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DATE: 03/27/2024  
BY: [Signature]

DESIGN AND PROJECT MANAGER: BRUCE KALAELOA, HAWAII  
HAWAII ARMY NATIONAL GUARD  
BUILDING 907  
PROJECT MANAGER OFFICE

DATE OF WORK: [Blank]  
SHEET: AS NOTED  
PROJECT NO.: 1500010-1  
SHEET NO.: 05 OF 02  
E-801

NOTES, SYMBOLS  
KALAELOA B90T RESTORATION





100% FINL DESIGN	
DATE	BY
03/27/2024	DM

**KALAELOA B90T RESTORATION**

DESIGN AND PROJECT MANAGER OFFICE  
KALAELOA, HAWAII

HAWAII ARMY NATIONAL GUARD

BUILDING 90T

AS NOTED

SHEET NO. 24-202299-C

FEDERAL PROJECT NO. 15M00014

SCALE: AS SHOWN

E-1002

**ELECTRICAL GENERAL NOTES:**

- ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW UNLESS OTHERWISE NOTED. ALL MATERIALS SHALL BE NEW AND "LISTED" OR "LABELLED" AS DEFINED BY THE NATIONAL ELECTRICAL CODE (NEC). WORK INCLUDES INSTALLATION OF ALL ELECTRICAL SYSTEMS COMPLETE AND OPERATIONAL AS LIMITED BY THE INTENT OF THE CONTRACT DOCUMENTS.
- ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, AND THE UNITED FACILITIES CRITERIA STANDARDS. CONSTRUCTION PRACTICES SHALL CONFORM TO THE LATEST EDITION OF AMERICAN ELECTRICIANS' HANDBOOK BY CROFT AND APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIAL SUPPLIED FOR THIS PROJECT.
- STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NEPA 241, STANDARDS FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND NEPA 1, AS LOGICALLY AMENDED.
- FIRE SAFETY DURING ALTERATION:
  - NFPA 1, 16.4.4.1 WHERE THE BUILDING IS PROTECTED BY FIRE PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.
  - NFPA 1, 16.4.4.2 WHERE ALTERATION REQUIRES MODIFICATION OF A PORTION OF THE FIRE PROTECTION SYSTEM, THE SYSTEM SHALL BE KEPT IN SERVICE AND THE FIRE DEPARTMENT SHALL BE NOTIFIED.
  - NFPA 1, 16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AHI SHALL HAVE THE AUTHORITY TO SELECT ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.
  - NFPA 1, 10.7.1.1, AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED EXTINGUISHERS SHALL BE AVAILABLE AND ACCESSIBLE. A FIRE WATCH SHALL BE PERMITTED TO BE MADE IN OPERATIVE OR INACCESSIBLE AREAS. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.4.6.5(2)(b), 13.7.1.5.3, 16.5.4, 34.6.5.2.3, 41.2.2.6, 41.2.2.7, 41.2.4, 41.3.5, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AHI, NEPA 1, AS LOGICALLY AMENDED.
- THE DRAWINGS DO NOT REFLECT ALL THE EXISTING CONDITIONS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION, VISIT THE PROJECT SITE AND BECOME FAMILIAR WITH THE READILY OBSERVABLE EXISTING CONDITIONS. THE EXTENT OF ANY DEMOLITION, RELOCATION, RECONNECTION, AND THE NEW WORK PRIOR TO BIDDING, REPORT ANY READILY OBSERVABLE DISCREPANCIES AND/OR DIFFERENCES BETWEEN THE EXISTING CONDITIONS AND THE CONSTRUCTION DOCUMENTS TO THE CONTRACTING OFFICER. RESOLVE ALL READILY OBSERVABLE DISCREPANCIES AND QUESTIONS PRIOR TO THE START OF WORK. BID SUBMISSION SHALL BE CONSIDERED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE AND RESOLVED ALL READILY OBSERVABLE DISCREPANCIES AND QUESTIONS AND NO EXTRA PAYMENT WILL BE AUTHORIZED FOR WORK REQUIRED BY THE CONTRACTOR'S FAILURE TO DO SO.
- SHOULD PHASING AND SEQUENCING OF THE ELECTRICAL WORK BE REQUIRED, COORDINATE ALL ELECTRICAL WORK WITH THE WORK OF THE OTHER TRADES AND SCHEDULE WORK TO MINIMIZE THE NUMBER AND DURATION OF ELECTRICAL OUTAGES AND IMPACT TO THE OPERATIONS IN OR ADJACENT TO THE PROJECT AREA. COORDINATE ACCESS TO THE PROJECT AREA AND SCHEDULE ALL REQUIRED SYSTEM OUTAGES WITH THE CONTRACTING OFFICER.
- VERIFY AND COORDINATE ALL PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS PRIOR TO THE START OF CONSTRUCTION, OBTAIN APPROVAL BEFORE MAKING ANY PENETRATIONS THROUGH STRUCTURAL MEMBERS OR FIRE RATED WALLS AND CEILINGS.
- SCAN (E.G. X-RAY, ELECTROMAGNETIC, ETC.) ALL CONCRETE WALLS OR FLOOR STRUCTURES PRIOR TO COMMENCING WITH CORING/DRILLING WORK FOR PENETRATIONS TO AVOID DAMAGING THE EXISTING REINFORCING STEEL.
- COORDINATE AND PROVIDE ACCESS PANELS FOR ALL CONCEALED ELECTRICAL EQUIPMENT, DEVICES, BOXES, AND CONDUIT BODIES SO THAT THEY ARE ACCESSIBLE.
- TONING - EXISTING UNDERGROUND UTILITY LINES INDICATED ON THE DRAWINGS ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON TOPOGRAPHIC SURVEY AND/OR BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING THE PROJECT CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND MARKING THE EXISTING POSITIVE ROUTES OF THE PROJECT DUCT LINES TO IDENTIFY ANY POTENTIAL CONFLICTS PRIOR TO EXCAVATION DAMAGE TO EXISTING UTILITIES CAUSED BY THE CONTRACTOR. AS A RESULT OF THE FAILURE TO TONE THE ROUTE PRIOR TO EXCAVATION WORK, WILL REQUIRE THE CONTRACTOR TO REPAIR THE DAMAGE AT NO ADDITIONAL COST TO THE PROJECT. THE DAMAGED UTILITIES SHALL BE REPAIRED/RESTORED TO ITS ORIGINAL WORKING CONDITION AND TO THE SATISFACTION OF THE CONTRACTING OFFICER.
- PROVIDE ALL LABOR, EQUIPMENT, AND HAULING/DISPOSAL SERVICE FOR DEWATERING EFFORTS FOR NEW BELOW GRADE EXCAVATION/TRENCHING IF GROUND WATER IS ENCOUNTERED IN THE PROJECT AREA.
- WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO IN THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. AN EXAMPLE OF SUCH INCIDENTAL WORK ARE CLOSET BOXES, JUNCTION BOXES, PIPING, AND EQUIPMENT. ALL INCIDENTAL WORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE NEC.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL CONDUIT AND WIRING FOR THE POWER CONNECTION TO ALL EQUIPMENT AS INDICATED IN THE DRAWINGS AND

- SPECIFICATIONS. ALL INCIDENTAL CONDUIT AND WIRING REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM MAY NOT BE SHOWN IN THE DRAWINGS OR SPECIFICATIONS. CONTRACTOR SHALL COORDINATE INCIDENTAL CONDUIT AND WIRING REQUIREMENTS BETWEEN ALL TRADES TO ENSURE THE INCIDENTAL CONDUIT AND WIRING IS PROVIDED AND THE AFFECTED SYSTEMS OPERATE AS INTENDED.
- THE LOCATION OF ALL ELECTRICAL APPARATUS AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND BEFORE INSTALLING. STUDY THE ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DETAILS. THEN MAKE INSTALLATION IN THE MOST LOGICAL MANNER. CIRCUIT ROUTING IS TYPICAL, AND MAY BE VARIED IN ANY MANNER. ANY PIECE OF EQUIPMENT/DEVICE MAY BE RELOCATED WITHIN 10' BEFORE INSTALLATION AT THE DIRECTION OF THE CONTRACTING OFFICER WITHOUT ADDITIONAL CHARGE TO THE PROJECT.
- SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF THE PROJECT'S WORK, THE CONTRACTOR SHALL MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE AN ALTERNATE METHOD TO THOSE SPECIFIED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUBMIT DRAWINGS TO REFLECT THE PROPOSED ALTERNATE METHODS TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL IS OBTAINED. REARRANGEMENT OF WORK FOR THE PURPOSE OF COORDINATION SHALL NOT BE CONSIDERED AN ITEM FOR EXTRA COST.
- DISCONNECT AND REMOVE ALL ELECTRICAL APPARATUS, LIGHT FIXTURES, WIRING DEVICES, JUNCTION BOXES, AND ASSOCIATED FEEDER AND BRANCH CIRCUIT WIRING IN THE PROJECT AREA, UNLESS OTHERWISE NOTED. THE DEMOLITION DRAWINGS ARE INTENDED TO SHOW THE GENERAL LIMITS OF THE SCOPE OF WORK AND MAY NOT SHOW ALL THE EXISTING DEVICES, CONDUIT RUNS, ETC. FEEDER AND BRANCH CIRCUIT WIRING TO BE REMOVED SHALL BE DISCONNECTED FROM ITS SOURCE. ACCESSIBLE, PATCH/PANEL WALL, CONDUIT, AND CONDUIT SUPPORT STRUCTURES WHERE ACCESSIBLE, PATCH/PANEL WALL, FLOOR, AND CEILING DAMAGES AS A RESULT OF THE REMOVAL WORK.
- THE ELECTRICAL DRAWINGS ARE BASED ON PROPOSED EQUIPMENT, VERIFY ALL SYSTEM REQUIREMENTS (ELECTRICAL, MECHANICAL, FIRE ALARM, SPECIALTY SYSTEMS, ETC.) WITH THE SELECTED SYSTEM'S MANUFACTURER OR AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WITH WORK. COORDINATE RATINGS OF OVERCURRENT PROTECTION DEVICES, DISCONNECT SWITCHES, CONDUIT, AND WIRING TO MATCH THE ACTUAL EQUIPMENT SUPPLIED FOR THE PROJECT. CORRECT ALL DISCREPANCIES SO AS TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. RECORD CHANGES ON THE AS-BUILT DRAWINGS.
- ALL EQUIPMENT AND APPARATUS SHALL BE CAPABLE OF FITTING IN THE SPACES SHOWN WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS AND APPLICABLE CODE REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT IS TO BE INSTALLED PRIOR TO ORDERING OF EQUIPMENT AND NOTIFY THE CONTRACTING OFFICER IF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE, AND OPERATION OF THE EQUIPMENT.
- CONFIRM THE TYPE OF CEILING BEING INSTALLED PRIOR TO ORDERING LUMINAIRES AND TRIMS FOR PROPER COORDINATION. LUMINAIRES INDICATED MAY NOT EXPRESSLY CONFORM TO THE TYPE OF CEILING OR OPENING PROVIDED BY OTHER TRADES.
- CONCEAL ALL CONDUIT WHEREVER REASONABLY POSSIBLE. EXPOSED CONDUITS ARE PERMITTED ONLY WHERE SPECIFICALLY SHOWN ON THE DRAWINGS. ALL EXPOSED CONDUITS IN FINISHED AREAS SHALL BE INSTALLED IN THE LEAST VISIBLE LOCATIONS. CARE SHALL BE TAKEN TO INSTALL CONDUIT IN THE MOST AESTHETICALLY PLEASING MANNER.
- WHERE DEVICES, EQUIPMENT, BOXES, AND OTHER ELECTRICAL MATERIALS ARE INDICATED TO BE CEILING MOUNTED WITH STRUCTURAL MEMBER INTERSECTING SPACES, INCLUDING COURINGS AND CONNECTORS, SHALL BE LISTED FOR AND INSTALLED TO PROVIDE COMPLETE WEATHERPROOF/WET LOCATION INSTALLATION. ALL INCIDENTAL MATERIALS REQUIRED TO COMPLETE THE INSTALLATION SHALL ALSO BE OF WEATHERPROOF/WET LOCATION LISTING.
- WIRING DEVICES AND CONDUITS SHALL BE FLUSH MOUNTED, WHEREVER REASONABLY POSSIBLE. WHERE NEW DEVICES ARE INDICATED TO BE INSTALLED IN EXISTING WALLS, FISH EXISTING WALLS TO A MINIMUM WHERE OBSTRUCTIONS ARE ENCOUNTERED OR CUTTING OF THE WALL TO ACCOMPLISH THE WIRING DEVICE AND CONDUIT INSTALLATION IS UNAVOIDABLE. CONSULT WITH THE CONTRACTING OFFICER PRIOR TO COMMENCING ANY WORK.
- PROVIDE TYPEWRITTEN CIRCUIT DIRECTORIES FOR ALL PANELS, NEW OR MODIFIED, REFLECTING THE CIRCUIT ARRANGEMENTS AS THEY WERE ACTUALLY INSTALLED.
- AN ADHESIVE VINYL NAMEPLATE SHALL BE PROVIDED FOR ALL SWITCHES, RECEPTACLES, AND MISCELLANEOUS DEVICES CONNECTIONS. DISCONNECT SWITCHES, MOTOR STARTERS, AND PANELBOARD SERVING THE DEVICE AND THE CORRESPONDING CIRCUIT ASSIGNMENT, LETTERING SHALL BE A MINIMUM OF 1/4" HIGH, UTILIZE BROTHER "PATCH" LABEL MAKER OR APPROVED SUBSTITUTE.
- A GREEN, EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NEC ARTICLE 250 SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUIT IN ALL RACEWAYS INDICATED ON CONTRACT DRAWINGS OR NOT INSTALL THIS CONDUCTOR IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH/LEGS AND ATTACH TO THE DEVICE, LUMINAIRE, OR EQUIPMENT USING A SUITABLE SWITCHING LUG.



*David C. Manawa*

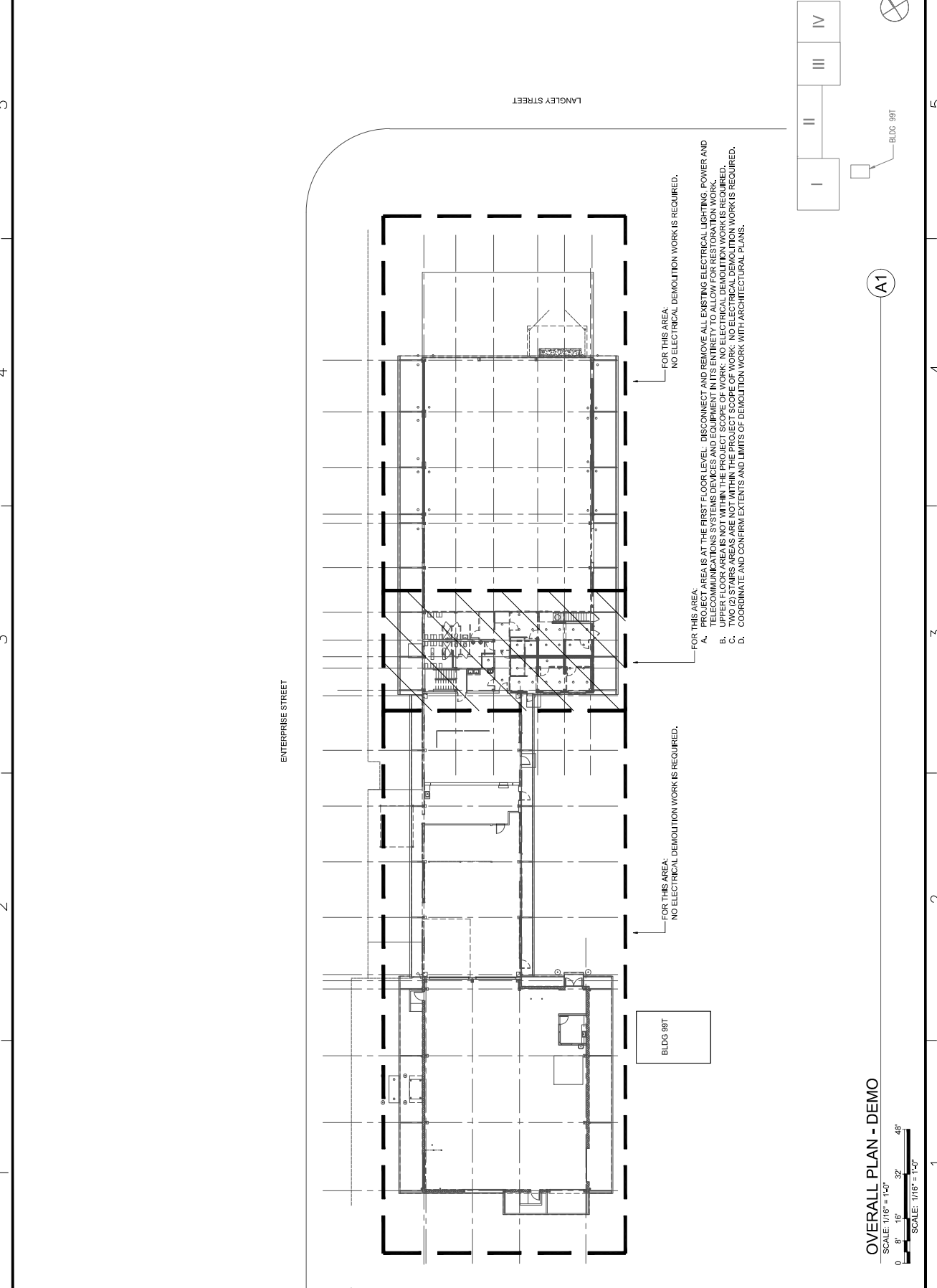
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**100% FINAL DESIGN**  
SUBMITTAL DATE: 03/22/2024  
DATE FOR PERMITS: 03/22/2024  
DATE FOR CONSTRUCTION: 03/22/2024  
DATE FOR OCCUPANCY: 03/22/2024

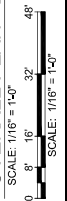
**HAWAII ARMY NATIONAL GUARD**  
DESIGN AND PROJECT MANAGER: BRUCE KALAELOA, HAWAII

**KALAELOA B90T RESTORATION**  
OVERALL PLAN - DEMO

STATE OF HAWAII  
PLANNING DEPARTMENT  
PLANNING DIVISION  
STATE OF HAWAII  
PLANNING DEPARTMENT  
PLANNING DIVISION  
STATE OF HAWAII  
PLANNING DEPARTMENT  
PLANNING DIVISION  
STATE OF HAWAII  
PLANNING DEPARTMENT  
PLANNING DIVISION



**OVERALL PLAN - DEMO**



SCALE: 1/16\"/>

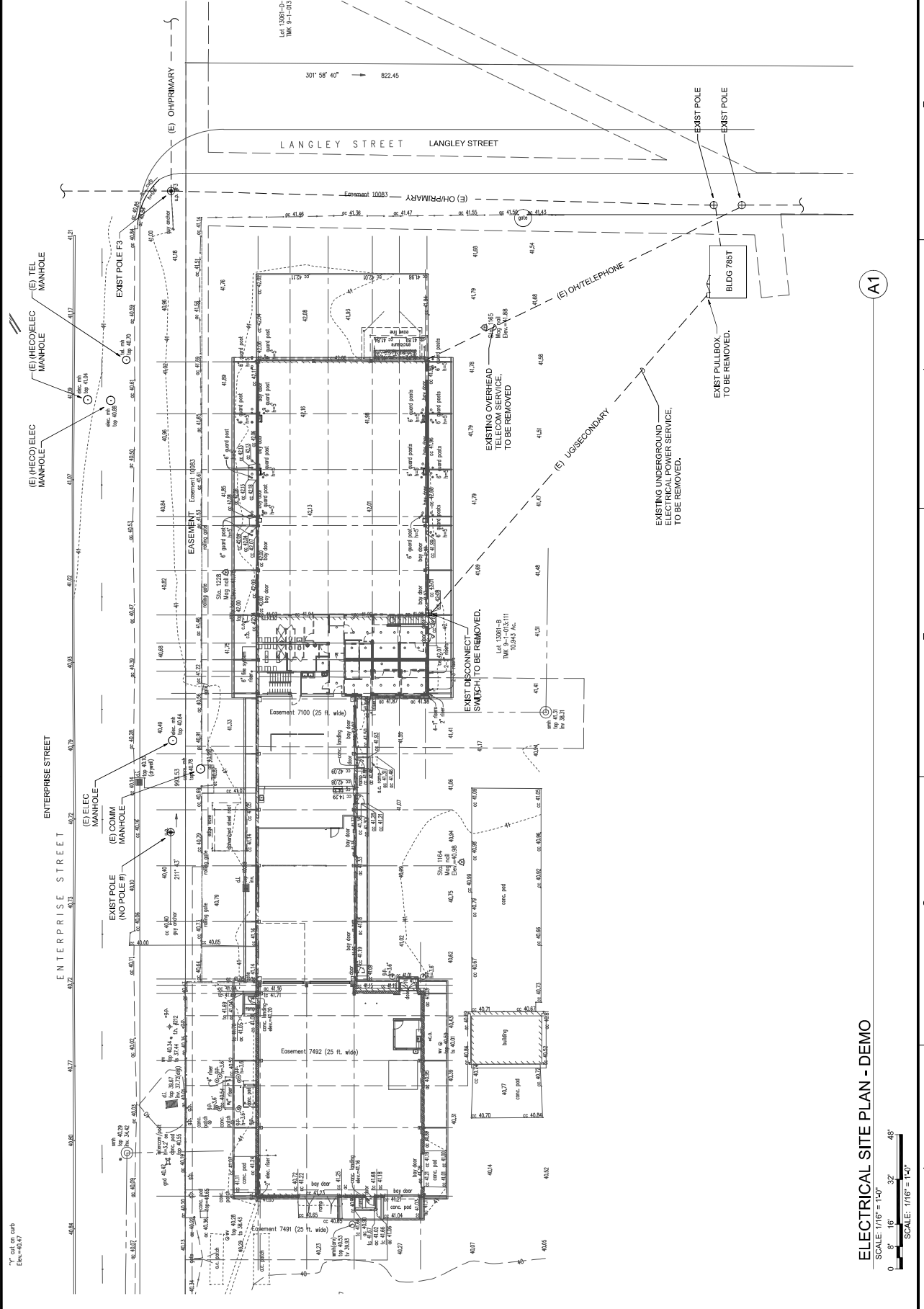




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 DATE: 03/27/2024  
 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]  
 DESIGN AND PROJECT MANAGER: BRUCE  
 KALELOA, HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER OFFICE  
 BUILDING 907  
 KALELOA, HAWAII  
 ELECTRICAL SITE PLAN - DEMO

STATE OF HAWAII	AS NOTED
PROJECT NO. CA-202209-C	
FEDERAL PROJECT NO. 15400014	
SHEET NO. 01 OF 02	
EST101	



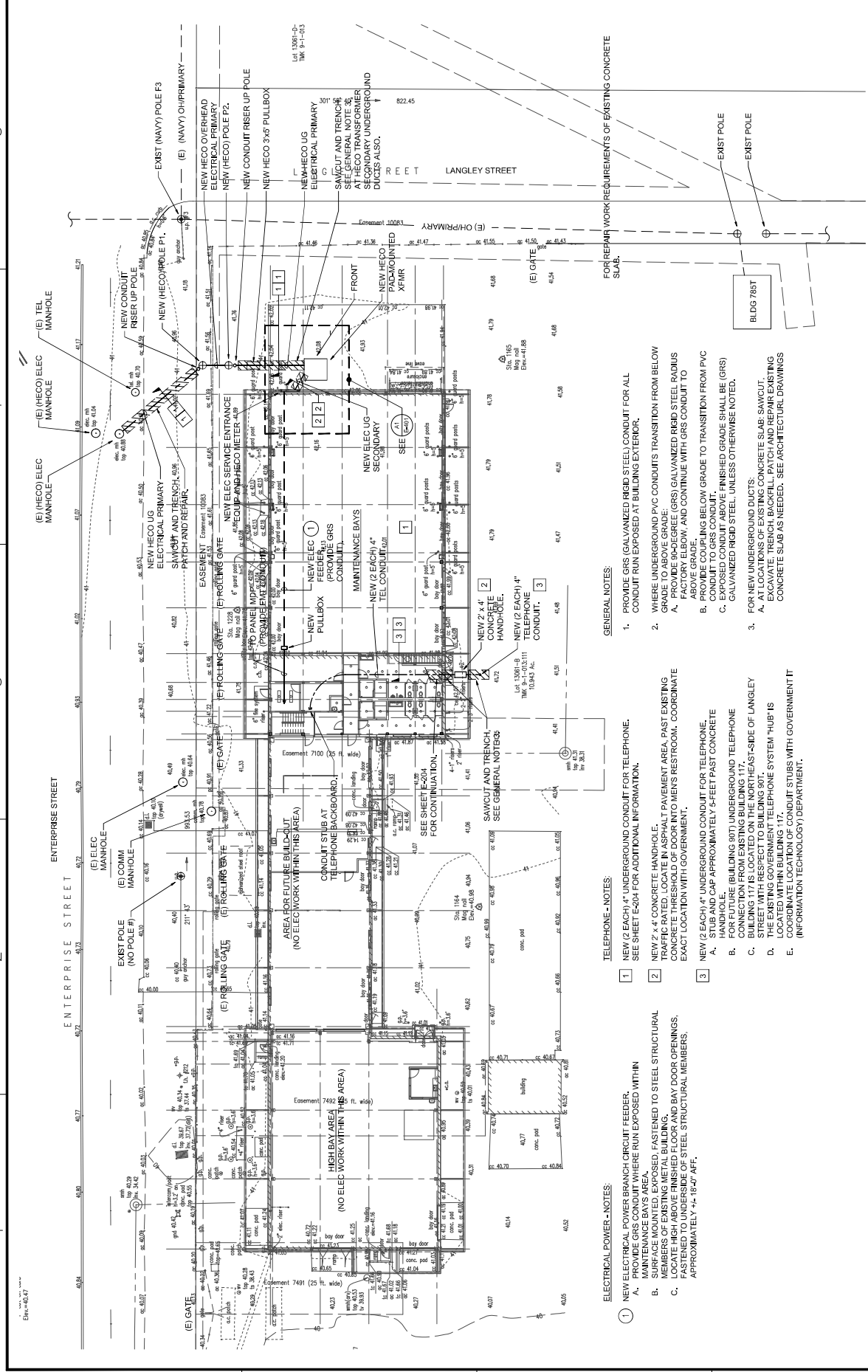
**ELECTRICAL SITE PLAN - DEMO**  
 SCALE: 1/16" = 1'-0"  
 SCALE: 1/16" = 1'-0"  
 0' 8' 16' 32' 48'



100% FINAL DESIGN  
DATE: 03/27/2024  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGEMENT OFFICE  
KALAELOA B907 RESTORATION  
KALAELOA, HAWAII

AS NOTED  
BUILDING 907  
FEDERAL PROJECT NO. 15H0001A  
SHEET NO. 1102-1  
EST102



A1

1 2 3 4 5

1 2 3 4 5

ELECTRICAL POWER-NOTES:

- 1 NEW ELECTRICAL POWER BRANCH CIRCUIT FEEDER.
  - A. PROVIDE GRS CONDUIT WHERE RUN EXPOSED WITHIN MAINTENANCE BAYS AREA.
  - B. MEMBERS OF EXISTING METAL BUILDING TO BE FASTENED TO STEEL STRUCTURAL MEMBERS.
  - C. LOCATE HIGH ABOVE FINISHED FLOOR AND BAY DOOR OPENINGS. FASTENED TO UNDERSIDE OF STEEL STRUCTURAL MEMBERS. APPROXIMATELY +/- 16'-0" AFF.

TELEPHONE-NOTES:

- 1 NEW (2 EACH) 4" UNDERGROUND CONDUIT FOR TELEPHONE. SEE SHEET E-204 FOR ADDITIONAL INFORMATION.
- 2 NEW 2" x 4" CONCRETE HANDHOLE. TRAFFIC RATED. LOCATE IN ASPHALT PAVEMENT AREA PAST EXISTING CONCRETE THRESHOLD OF DOOR INTO MEN'S RESTROOM. COORDINATE EXACT LOCATION WITH GOVERNMENT.
- 3 NEW (2 EACH) 4" UNDERGROUND CONDUIT FOR TELEPHONE. SEE SHEET E-204 FOR ADDITIONAL INFORMATION.
  - A. HANDHOLE CAP APPROXIMATELY 3'-0" PAST CONCRETE.
  - B. FOR FUTURE (BUILDING 907) UNDERGROUND TELEPHONE CONNECTION FROM EXISTING BUILDING 117.
  - C. BUILDING 117 IS LOCATED ON THE NORTHEAST-SIDE OF LANGLY STREET.
  - D. THE EXISTING GOVERNMENT TELEPHONE SYSTEM "HUB" IS LOCATED WITHIN BUILDING 117.
  - E. COORDINATE LOCATION OF CONDUIT STUBS WITH GOVERNMENT IT (INFORMATION TECHNOLOGY) DEPARTMENT.

GENERAL NOTES:

1. PROVIDE GRS (GALVANIZED RIGID STEEL) CONDUIT FOR ALL CONDUIT RUN EXPOSED AT BUILDING EXTERIOR.
2. WHERE UNDERGROUND PVC CONDUITS TRANSITION FROM BELOW GRADE TO ABOVE GRADE.
  - A. PROVIDE 90-DEGREE (GRS) GALVANIZED RIGID STEEL RADIUS ABOVE GRADE.
  - B. PROVIDE COUPLING BELOW GRADE TO TRANSITION FROM PVC ABOVE GRADE.
  - C. EXPOSED CONDUIT ABOVE FINISHED GRADE SHALL BE (GRS) GALVANIZED RIGID STEEL UNLESS OTHERWISE NOTED.
3. FOR NEW UNDERGROUND DUCTS.
  - A. EXCAVATE TRENCH BACKFILL PATCH AND REPAIR EXISTING CONCRETE SLAB AS NEEDED. SEE ARCHITECTURAL DRAWINGS.

ELECTRICAL SITE PLAN - NEW

SCALE: 1/16" = 1'-0"  
0 8' 16' 32' 48'  
SCALE: 1/16" = 1'-0"

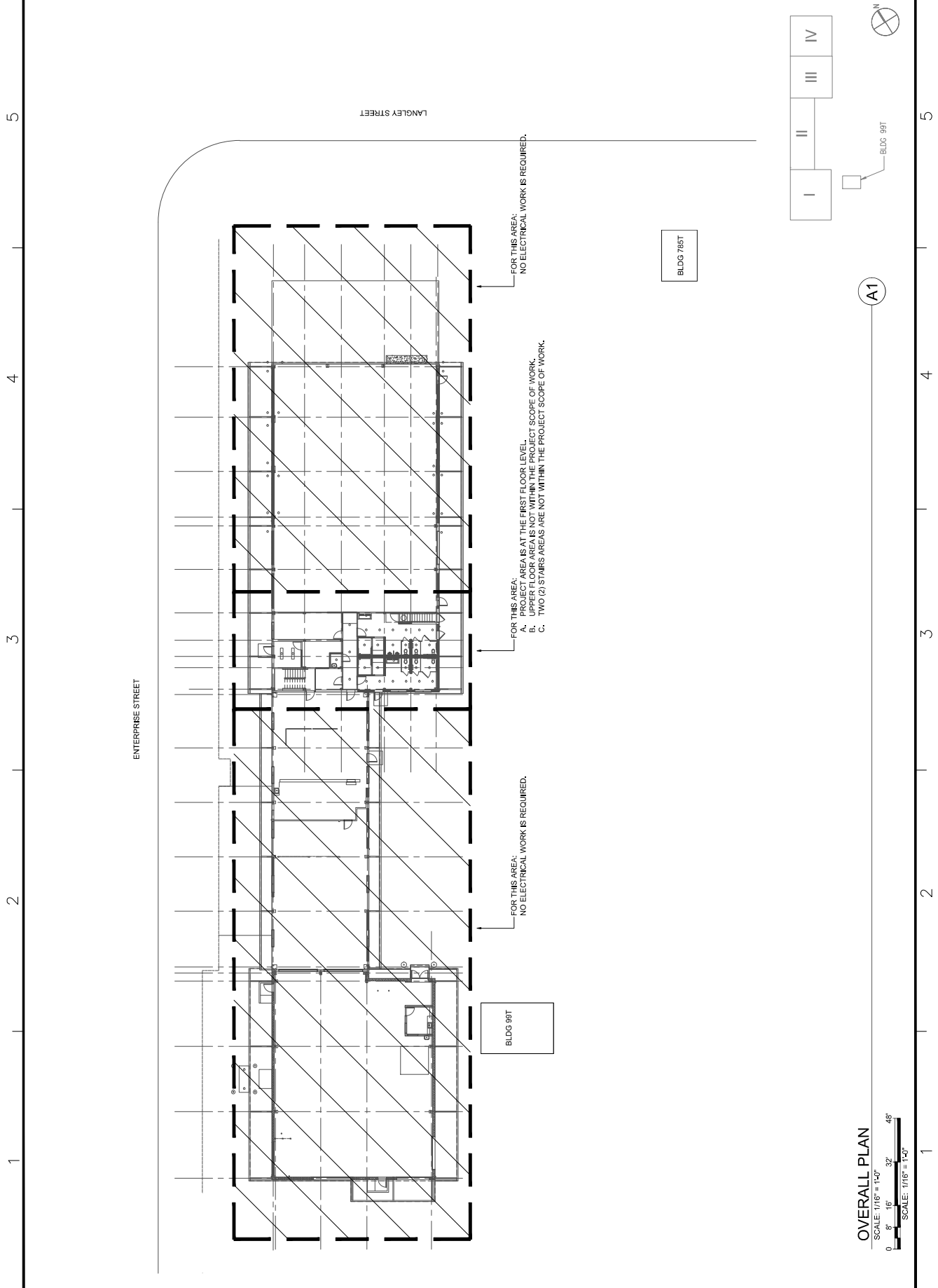


NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER: BRUCE KALAELOA, HAWAII  
 BUILDING 90T  
 KALAELOA B90T RESTORATION  
 OVERALL PLAN

STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 PROJECT: AS NOTED  
 SHEET NO.: CH-202209-C  
 FEDERAL PROJECT NO.: 15H0001A  
 PROJECT: 15-CP-01  
 E101



**OVERALL PLAN**  
 SCALE: 1/16" = 1'-0"  
 0 8' 16' 32' 48'  
 SCALE: 1/16" = 1'-0"



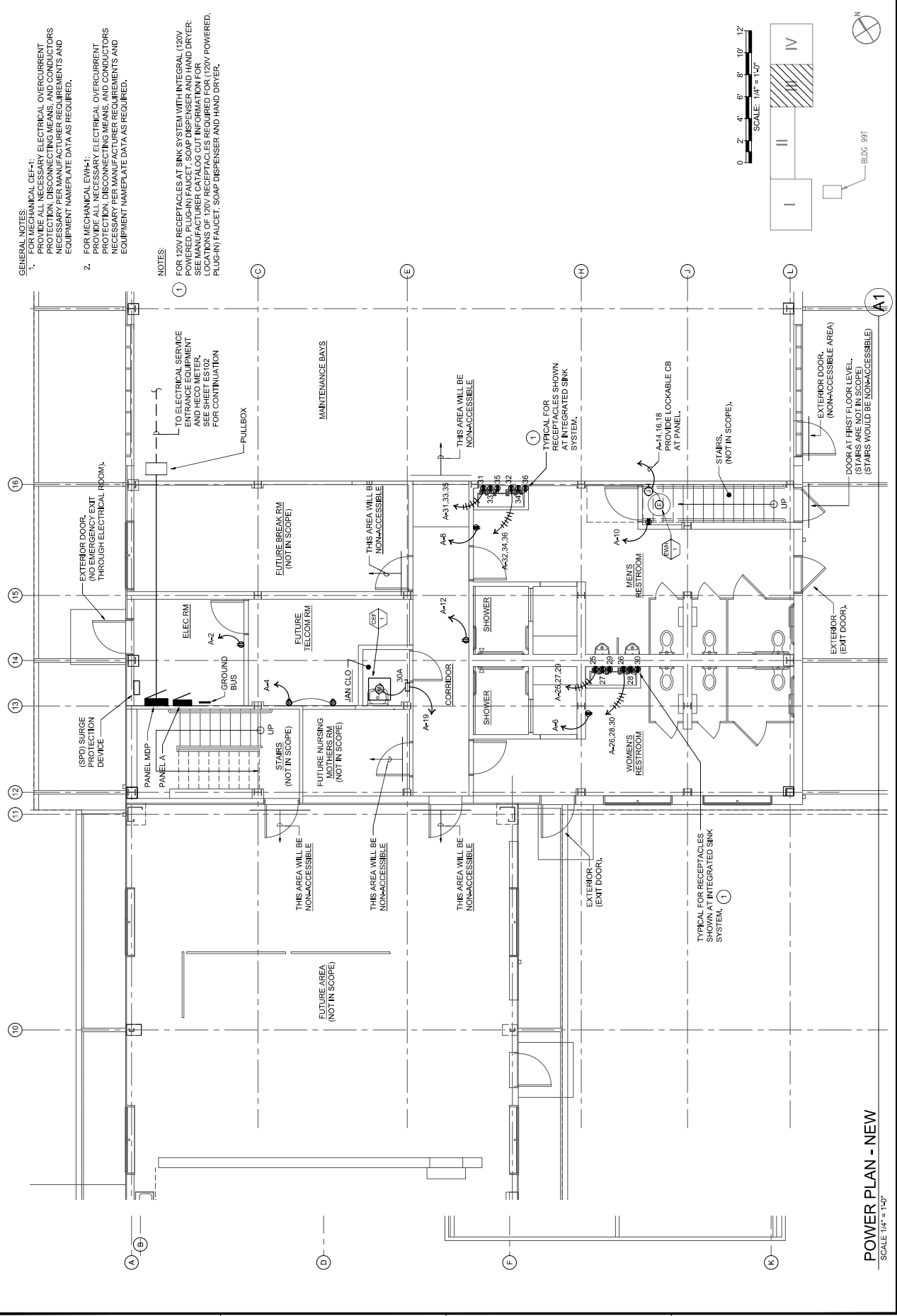
NO.	DATE	DESCRIPTION

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

100% FINAL DESIGN  
 03/27/2024  
 DATE: 03/27/2024  
 USER: JLD  
 DRAWN: JLD  
 CHECK: JLD

SHEET NO.	AS NOTED
PROJECT NO.	CA-202209-C
FEDERAL PROJECT NO.	15HQ001A
ISSUE NO.	01 OF 01

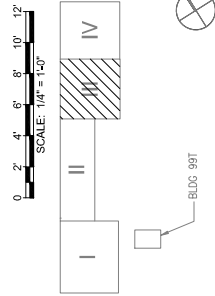
BUILDING 907  
 KALELOA B907 RESTORATION  
 POWER PLAN - NEW



- GENERAL NOTES:**
- FOR MECHANICAL DEF-1: PROVIDE ALL NECESSARY ELECTRICAL OVERCURRENT PROTECTION, GROUNDING, AND CONDUCTORS NECESSARY PER MANUFACTURER REQUIREMENTS AND EQUIPMENT NAMEPLATE DATA AS REQUIRED.
  - FOR MECHANICAL DEF-1: ELECTRICAL OVERCURRENT PROTECTION, DISCONNECTING MEANS, AND CONDUCTORS NECESSARY PER MANUFACTURER REQUIREMENTS AND EQUIPMENT NAMEPLATE DATA AS REQUIRED.

**NOTES:**

- FOR 120V RECEPTACLES AT SINK SYSTEM WITH INTEGRAL (120V POWERED) PLUG-IN FAUCET, SOAP DISPENSER AND HAND DRYER: TYPICAL FOR RECEPTACLES SHOWN AT INTEGRATED SINK SYSTEM. (1)



**POWER PLAN - NEW**  
 SCALE 1/4" = 1'-0"



*David C. Mendenhall*  
 David C. Mendenhall  
 License No. 7534-E  
 State of Hawaii  
 Mechanical Engineering

NO.	REVISION	DATE	BY

100% FINAL DESIGN  
 03/27/2024  
 DATE: 03/27/2024  
 USER: DCM  
 CDR: DCM

DESIGN AND PROJECT MANAGER: BRUCE KALELOA, HAWAII

STATE OF HAWAII  
 PLANNING DEPARTMENT  
 DESIGN AND PROJECT MANAGER OFFICE

PROJECT: KALELOA B90T RESTORATION

ROOF PLAN - NEW

BUILDING 90T

AS NOTED

DATE: 03/27/2024

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

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PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

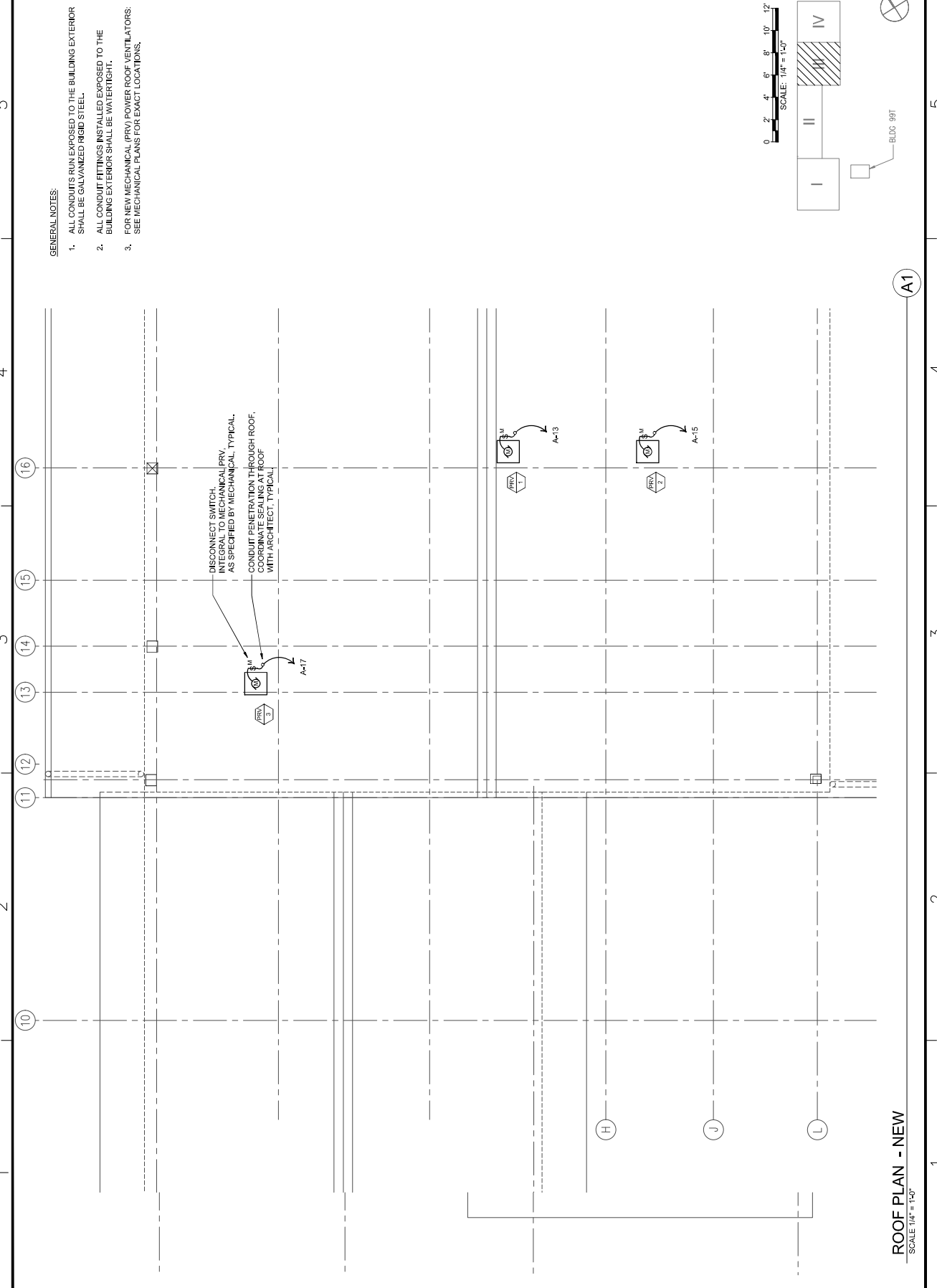
PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C

PROJECT NO.: 202209-C



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SCALE 1/4" = 1'-0"

ROOF PLAN - NEW

GENERAL NOTES:

1. ALL CONDUITS RUN EXPOSED TO THE BUILDING EXTERIOR SHALL BE GALVANIZED RIGID STEEL.

2. ALL CONDUIT FITTINGS INSTALLED EXPOSED TO THE BUILDING EXTERIOR SHALL BE WATERTIGHT.

3. FOR NEW MECHANICAL (PRV) POWER ROOF VENTILATORS: SEE MECHANICAL PLANS FOR EXACT LOCATIONS.

DISCONNECT SWITCH, INTEGRAL TO MECHANICAL PRV, AS SPECIFIED BY MECHANICAL, TYPICAL.

CONDUIT PENETRATION THROUGH ROOF, COORDINATE SEALING AT ROOF WITH ARCHITECT, TYPICAL.

PRV 1

PRV 2

PRV 3

A-13

A-15

A-17

SCALE: 1/4" = 1'-0"

0 2 4 6 8 10 12

N

BUILDING 90T

I II III IV

H J L

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10 11 12 13 14 15 16

1 2 3 4 5

A B C D

10 11 12 13 14 15 16

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A B C D

10 11 12 13 14 15 16

1 2 3 4 5

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1 2 3 4 5

A B C D

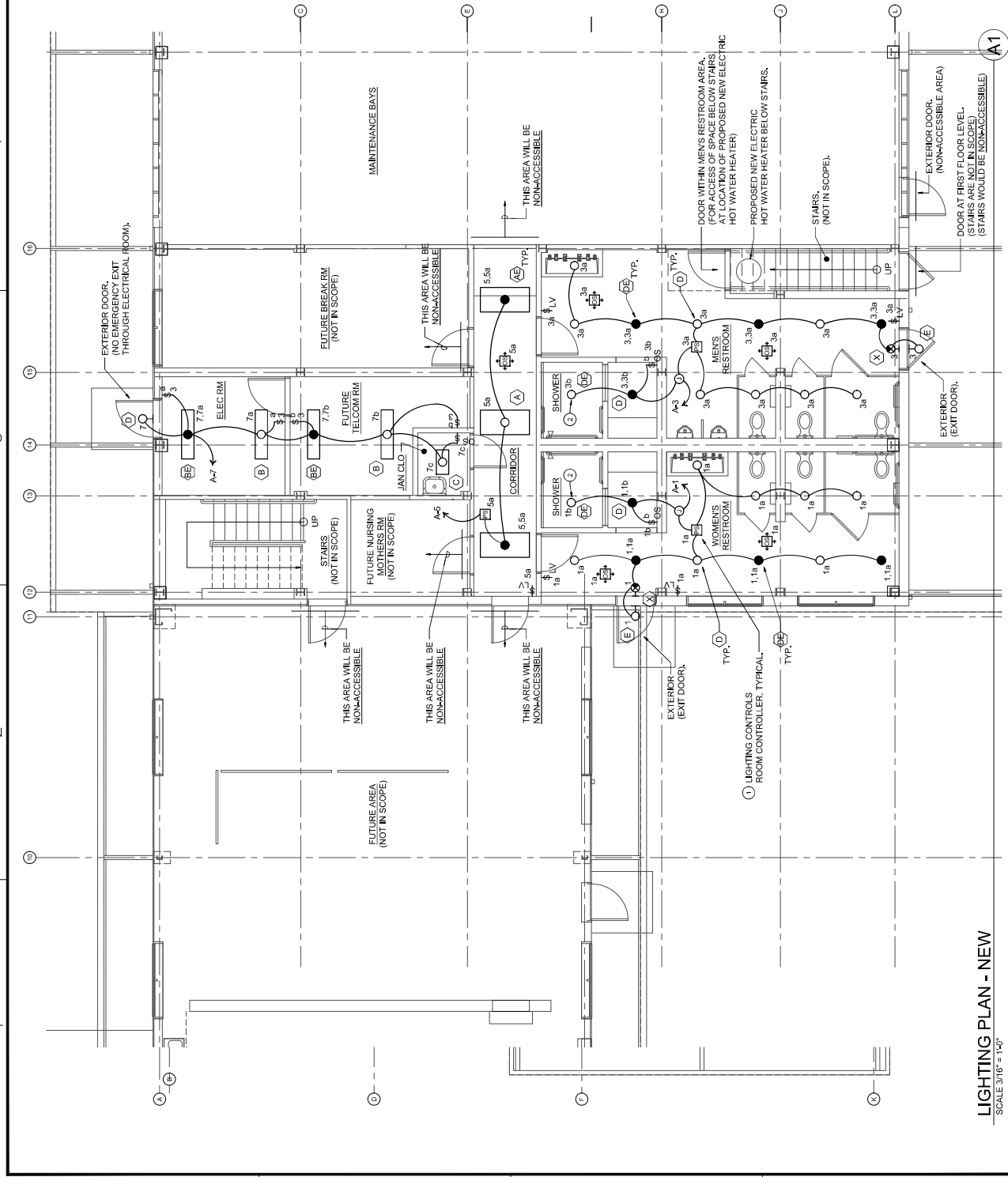
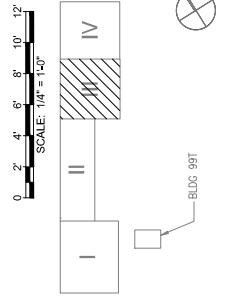
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NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]  
 DESIGN AND PROJECT MANAGER OFFICE  
 KALELOA, HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 BUILDING 90T  
 AS NOTED  
 SHEET NO. CH-202209-C  
 FEDERAL PROJECT NO. 15K0001A  
 DRAWING NO. CH-90T-01  
 E-2030

- NOTES:
- FOR LIGHTING CONTROLS ROOM CONTROLLER:
    - LOCATE ROOM CONTROLLER IN ACCESSIBLE AREA OF CEILING SPACE.
    - COORDINATE CEILING ACCESSIBILITY AND CEILING ACCESS PANELS WITH ARCHITECT AS NEEDED.
  - AT LOCATION OF WOMEN'S RESTROOM SHOWER AND MEN'S RESTROOM SHOWER:
    - PROVIDE LIGHT FIXTURE SUITABLE FOR SHOWER LOCATION.



**LIGHTING PLAN - NEW**  
 SCALE 3/16" = 1'-0"



NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DESIGNED BY: [Redacted]  
 CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER: BRANCH  
 KALELOA, HAWAII

TELECOMMUNICATIONS PLAN - NEW

BUILDING 90T

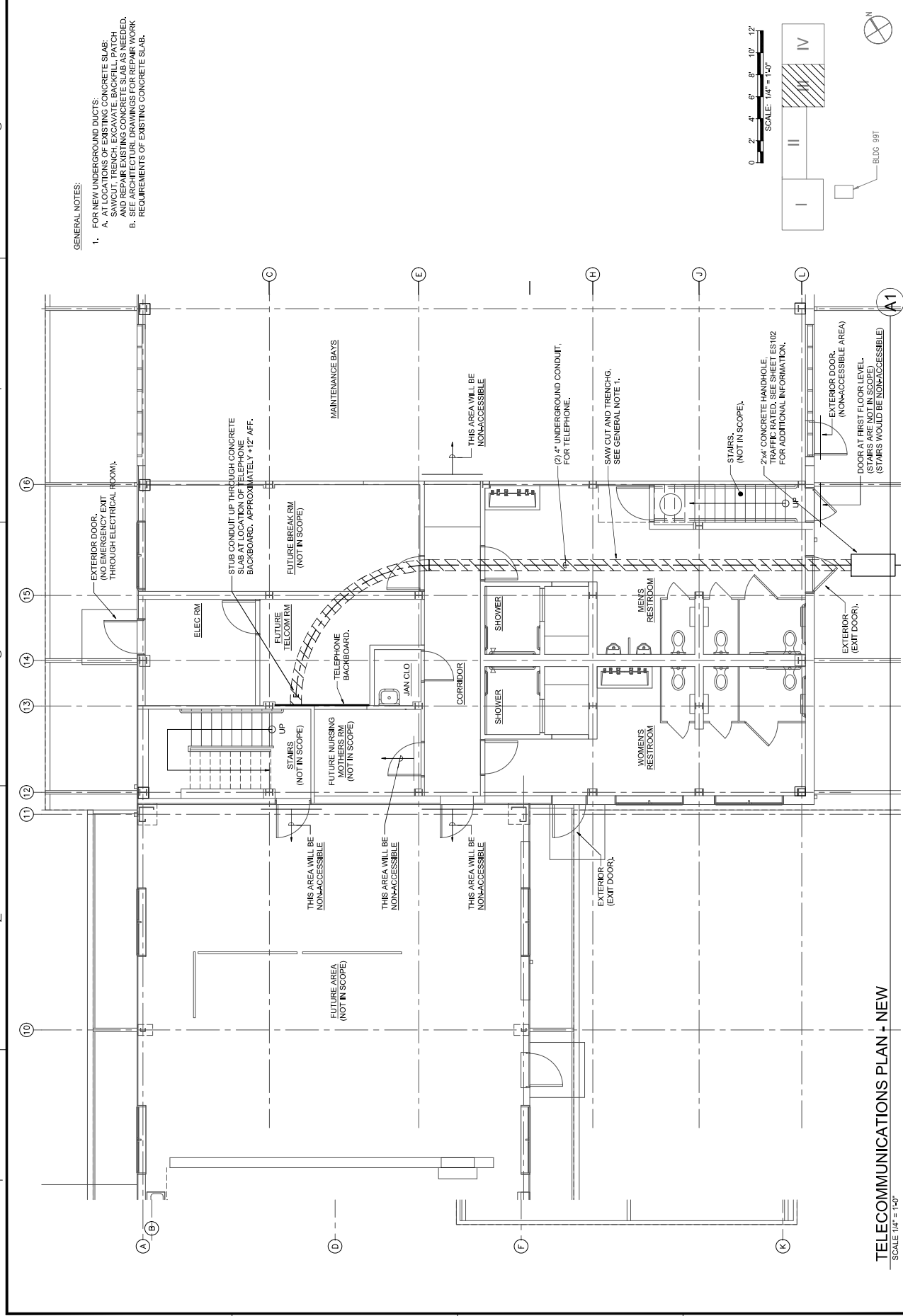
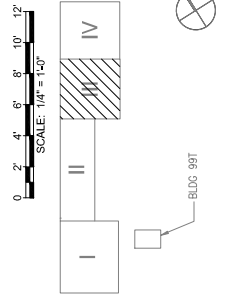
AS NOTED

STATE OF HAWAII  
 PLANNING DEPARTMENT OFFICE

FEDERAL PROJECT NO.: 15H0001A  
 CONTRACT NO.: 202029-C  
 SHEET NO.: 25 OF 25  
 E-204

**GENERAL NOTES:**

- FOR NEW UNDERGROUND DUCTS:  
 A. AT LOCATIONS OF EXISTING CONCRETE SLAB: SAWCUT, TRENCH, EXCAVATE, BACKFILL, PATCH AND REPAIR EXISTING CONCRETE SLAB AS NEEDED.  
 B. SEE ARCHITECTURAL DRAWINGS FOR REPAIR WORK REQUIREMENTS OF EXISTING CONCRETE SLAB.



**TELECOMMUNICATIONS PLAN - NEW**  
 SCALE 1/4" = 1'-0"



David C. Masuda

NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
DATE: 03/27/2024  
DRAWN BY: [Redacted]  
CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGER: BRUCE  
KALELOA, HAWAII

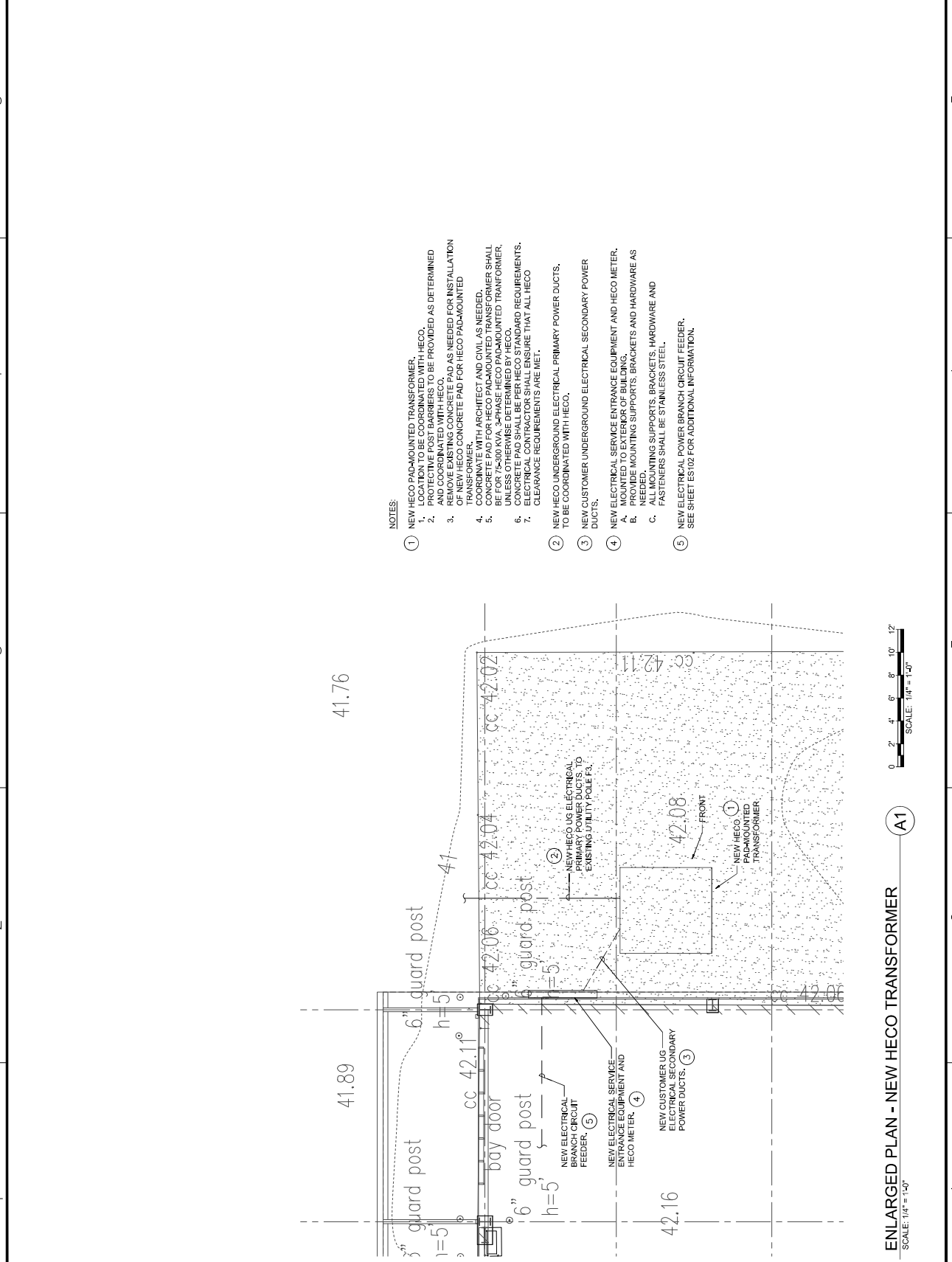
KALELOA B90T RESTORATION  
BUILDING 90T

ENLARGED PLANS

STATE OF HAWAII  
PROJECT MANAGER OFFICE  
1545 KULUWAHINE DRIVE  
HONOLULU, HI 96813  
PHONE: (808) 541-2000  
FEDERAL PROJECT NO.: 15450001A  
SHEET NO.: 15450001A  
DATE: 03/27/24  
E-401

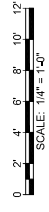
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**NOTES:**

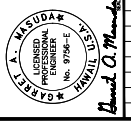
- NEW HECO PAD-MOUNTED TRANSFORMER, LOCATION TO BE COORDINATED WITH HECO.
- PAD MOUNTING POST BARRIERS TO BE PROVIDED AS DETERMINED BY HECO.
- REMOVE EXISTING CONCRETE PAD AS NEEDED FOR INSTALLATION OF NEW HECO CONCRETE PAD FOR HECO PAD-MOUNTED TRANSFORMER.
- COORDINATE WITH ARCHITECT AND CIVIL AS NEEDED.
- NEW HECO PAD-MOUNTED TRANSFORMERS SHALL BE FOR 75-300 KVA, 3-PHASE HECO PAD-MOUNTED TRANSFORMER, UNLESS OTHERWISE DETERMINED BY HECO.
- CONCRETE PAD SHALL BE PER HECO STANDARD REQUIREMENTS. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL HECO CLEARANCE REQUIREMENTS ARE MET.
- NEW HECO UNDERGROUND ELECTRICAL PRIMARY POWER DUCTS, TO BE COORDINATED WITH HECO.
- NEW CUSTOMER UNDERGROUND ELECTRICAL SECONDARY POWER DUCTS.
- NEW ELECTRICAL SERVICE ENTRANCE EQUIPMENT AND HECO METER, A. MOUNTED TO EXTERIOR OF BUILDING. B. PROVIDE MOUNTING SUPPORTS, BRACKETS AND HARDWARE AS NEEDED. C. ALL MOUNTING SUPPORTS, BRACKETS, HARDWARE AND FASTENERS SHALL BE STAINLESS STEEL.
- NEW ELECTRICAL POWER BRANCH CIRCUIT FEEDER. SEE SHEET E5102 FOR ADDITIONAL INFORMATION.



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ENLARGED PLAN - NEW HECO TRANSFORMER





NO.	DATE	DESCRIPTION	BY

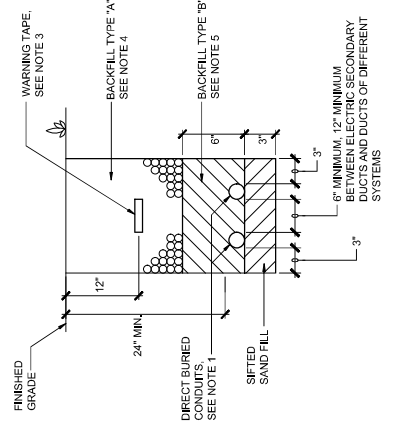
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DATE: 03/27/2024  
DRAWN BY: [Redacted]  
CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGER: BRUCE KALELOA, HAWAII  
BUILDING 907  
PROJECT MANAGER OFFICE

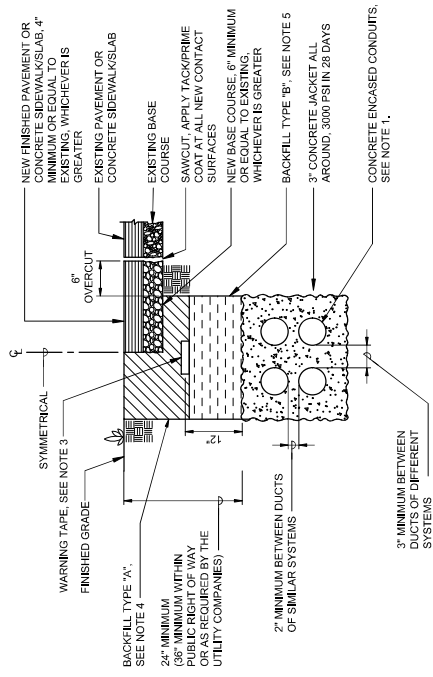
AS NOTED  
SHEET NO. CA-202209-C  
FEDERAL PROJECT NO. 15H00014  
SHEET 35 OF 42

E-501

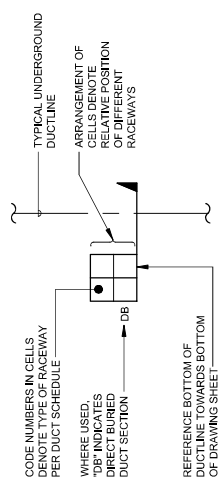
- DUCT SECTION NOTES:**
- CONDUITS SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE NOTED.
  - PROVIDE ALL EMPTY/SPARE CONDUITS WITH PULL STRING. PROVIDE ALL EMPTY/SPARE TELECOMMUNICATIONS CONDUIT WITH MULE TAPE.
  - WARNING TAPE SHALL BE 5 MIL THICK X 3" WIDE AND SHALL BE LAID THE ENTIRE LENGTH OF THE DUCTLINE. TAPE SHALL HAVE A CONTINUOUS METALLIC BACKING AND CORROSION RESISTANT FOIL CORE. WARNING AND IDENTIFICATION TO BE IMPRINTED ON THE TAPE SHALL READ "CAUTION: ELECTRICAL/TELECOMMUNICATIONS DUCTS". THE WARNING TAPE SHALL BE REPEATED APPROXIMATELY EVERY 10 FEET. MINIMUM TAPE COLOR SHALL BE AS FOLLOWS:  
ELECTRICAL - RED COLOR  
TELECOMMUNICATIONS - ORANGE COLOR
  - BACKFILL TYPE "A": NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 50% GRAVEL AND ALSO DOES NOT CONTAIN HARD LUMPS OF EARTH 3 INCHES IN GREATEST DIMENSION, ROCKS LARGER THAN 1 INCH IN LARGEST DIMENSION, HIGHLY PLASTIC CLAY, POORLY GRADED SAND AND GRAVEL, ORGANICS, DEBRIS, OR OTHER UNSUITABLE OR DELETERIOUS MATERIALS. 85% COMPACTION.
  - BACKFILL TYPE "B": NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 20% BY VOLUME OF ROCK PARTICLES. MIXTURE MUST PASS THROUGH A 1/2" MESH SCREEN. 95% COMPACTION.
  - WHERE ELECTRICAL OR TELECOMMUNICATIONS DUCTLINES CROSS OTHER UTILITIES, MAINTAIN A MINIMUM OF 12" VERTICAL SEPARATION BETWEEN THE ELECTRICAL/TELECOMMUNICATIONS DUCTS AND THE OTHER UTILITY LINES (GAS, WATER, SEWER, DRAIN, ETC.).
  - DUCTS OF OTHER SYSTEMS ARE NOT ALLOWED ABOVE HECO DUCTS.



2 TYPICAL DIRECT BURIED DUCT SECTION  
E-703 NOT TO SCALE



1 TYPICAL CONCRETE ENCASED DUCT SECTION  
E-703 NOT TO SCALE



3 TYPICAL UNDERGROUND DUCTLINE  
ARRANGEMENT OF DUCTLINE RELATIVE POSITION OF DIFFERENT RACEWAYS  
WHERE USED, "DB" INDICATES DUCTLINE TOWARDS BOTTOM OF DRAWING SHEET  
E-703 NOT TO SCALE

**DUCT SCHEDULE**

NO.	DESCRIPTION	REMARKS
1	4" PVC SCHED 40, HECO UNDERGROUND PRIMARY POWER.	SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
2	3" PVC SCHED 40, ELECTRICAL UNDERGROUND SECONDARY POWER.	SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
2	4" PVC SCHED 40, TELEPHONE, CONDUIT ONLY.	FOR FUTURE CONNECTION OF TELEPHONE SERVICE.

- NOTE:**
- DUCT SECTIONS SHALL BE CONCRETE ENCASED UNLESS OTHERWISE NOTED.

1 2 3 4 5

1 2 3 4 5

D

C

B

A

D

C

B

A



*David O. Masuda*  
 LICENSED PROFESSIONAL ENGINEER  
 No. 75361-E  
 STATE OF HAWAII

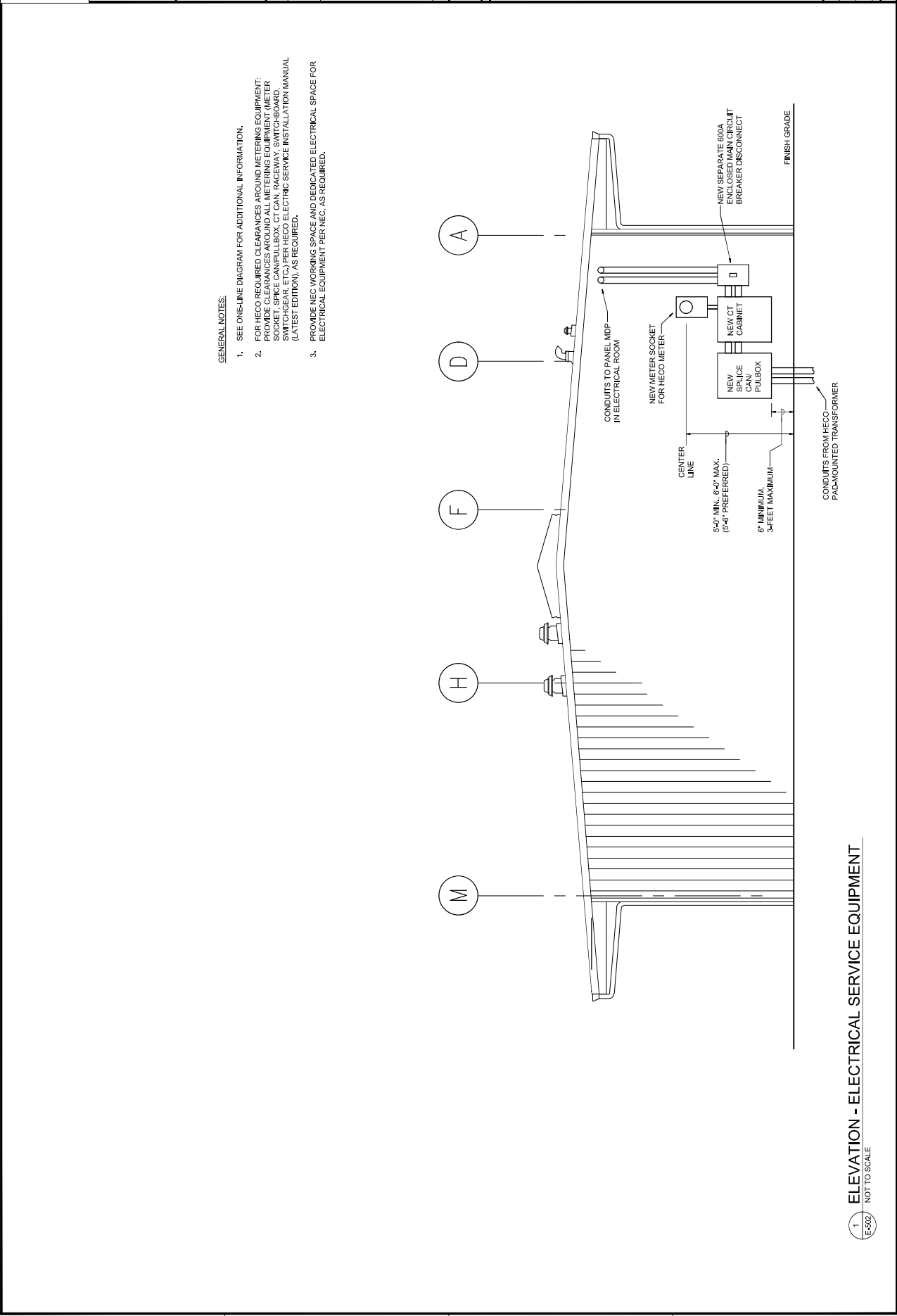
NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 03/27/2024  
 DATE: 03/27/2024  
 USER: DOR  
 PROJECT: 202403-01

DESIGN AND PROJECT MANAGER: BRUCE KALAELOA, HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 BUILDING 907  
 KALAELOA, HAWAII

STATE OF HAWAII  
 PLANNING AND DEVELOPMENT OFFICE  
 AS NOTED  
 SHEET NO. CA-202209-C  
 FEDERAL PROJECT NO. 15H000114  
 SHEET NO. 05 OF 02  
 E-502

1 2 3 4 5



- GENERAL NOTES:**
- SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
  - FOR HECO REQUIRED CLEARANCES AROUND METERING EQUIPMENT, PROVIDE CLEARANCES AROUND ALL METERING EQUIPMENT (METER, SOCKET, SPICE CAN/PULLBOX, CT CAN, RACEWAY, SWITCHBOARD, SWITCHGEAR, ETC.) PER HECO ELECTRIC SERVICE INSTALLATION MANUAL (LATEST EDITION), AS REQUIRED.
  - PROVIDE NEC WORKING SPACE AND DEDICATED ELECTRICAL SPACE FOR ELECTRICAL EQUIPMENT PER NEC, AS REQUIRED.

**1** ELEVATION - ELECTRICAL SERVICE EQUIPMENT  
 NOT TO SCALE  
 E-502



NO.	REVISION	DATE	BY

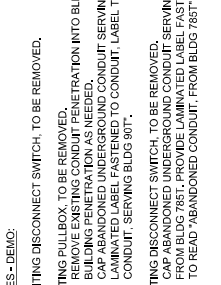
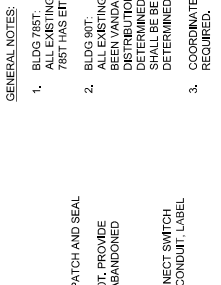
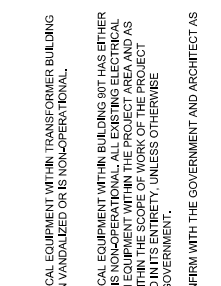
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 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 ONE-LINE DIAGRAM - DEMO  
 BUILDING 90T

AS NOTED  
 STATE OF HAWAII  
 PROJECT NO. CA-202209-C  
 FEDERAL PROJECT NO. 15H000101  
 SHEET NO. 15-0001-01  
 E-601

- GENERAL NOTES:**
- BLDG 785T:  
 ALL EXISTING ELECTRICAL EQUIPMENT WITHIN TRANSFORMER BUILDING 785T HAS EITHER BEEN VANDALIZED OR IS NON-OPERATIONAL.
  - BLDG 90T:  
 ALL EXISTING ELECTRICAL EQUIPMENT WITHIN BUILDING 90T HAS EITHER BEEN VANDALIZED OR IS NON-OPERATIONAL. ALL EXISTING ELECTRICAL DISTRIBUTION SYSTEM EQUIPMENT WITHIN THE PROJECT AREA AND AS SHOWN ON THIS ONE-LINE DIAGRAM SHALL BE REMOVED IN ITS ENTIRETY, UNLESS OTHERWISE DETERMINED BY THE GOVERNMENT.
  - COORDINATE AND CONFIRM WITH THE GOVERNMENT AND ARCHITECT AS REQUIRED.

- NOTES - DEMO:**
- EXISTING DISCONNECT SWITCH, TO BE REMOVED.
  - EXISTING PULL BOX, TO BE REMOVED.  
 A. CAP ABANDONED UNDERGROUND PENETRATION INTO BLDG 785T, PATCH AND SEAL BUILDING PENETRATION AS NEEDED.  
 B. CAP ABANDONED UNDERGROUND CONDUIT SERVING BLDG 90T, PROVIDE LAMINATED LABEL FASTENED TO CONDUIT, LABEL TO READ "ABANDONED CONDUIT, SERVING BLDG 90T".
  - EXISTING DISCONNECT SWITCH, TO BE REMOVED.  
 A. CAP ABANDONED UNDERGROUND CONDUIT SERVING DISCONNECT SWITCH FROM BLDG 785T, PROVIDE LAMINATED LABEL FASTENED TO CONDUIT, LABEL TO READ "ABANDONED CONDUIT, FROM BLDG 785T".



**1 ONE-LINE DIAGRAM - DEMO**  
 NOT TO SCALE



STATE OF HAWAII	DATE OF HAWAII LICENSE NO. 15160
PROJECT NO. CH-202209-C	DATE OF HAWAII LICENSE NO. 15160
PROJECT NAME: KALAELOA B90T RESTORATION	DATE OF HAWAII LICENSE NO. 15160
DRAWN BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
CHECKED BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
DESIGNED BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
ENGINEER'S SEAL: [Redacted]	DATE OF HAWAII LICENSE NO. 15160

**NOTES:**

- NEW PROPOSED HECO PAD MOUNTED TRANSFORMER:
  - A. RATED: \_\_\_\_\_ KVA (TO BE DETERMINED BY HECO)
  - B. PRIMARY: \_\_\_\_\_ KV (TO BE DETERMINED BY HECO)
  - C. SECONDARY: \_\_\_\_\_ KV (TO BE DETERMINED BY HECO)
  - D. MAXIMUM SHORT-CIRCUIT CURRENT AVAILABLE AT THE TRANSFORMER SHALL BE \_\_\_\_\_ AMPERES (TO BE PROVIDED BY HECO)
  - E. NEW PAD MOUNTED TRANSFORMER TO BE PROVIDED (BY HECO)
  - F. PROVISION OF NEW HECO PAD MOUNTED TRANSFORMER (BY HECO) TO BE COORDINATED AND CONFIRMED BY HECO.
  - G. PROVIDE COMPLETE INSTALLATION OF NEW HECO PAD MOUNTED TRANSFORMER WITH HECO.
- PROVIDE NEW CONCRETE PAD FOR NEW PROPOSED HECO PAD MOUNTED TRANSFORMER. PAD SHALL BE FOR 75-300 KVA, 3-PHASE PAD MOUNTED TRANSFORMER.
  - A. TRANSFORMER HEIGHT SHALL BE \_\_\_\_\_ FEET (LATEST VERSION).
  - B. (UG) UNDERGROUND DUCTS & STRUCTURES. PER HECO STANDARD 94-8011
  - C. SHALL BE PER HECO STANDARDS.
  - D. TO BE COORDINATED AND CONFIRMED BY HECO.
- PROVIDE NEW SPICE CAN/PULLBOX:
  - A. PER HECO ELECTRIC SERVICE INSTALLATION MANUAL, NINTH EDITION (CHAPTER 3.7) IF MORE THAN ONE CONDUCTOR PER PHASE IS REQUIRED, CONTACT THE COMPANY (HECO) FOR SPICE CAN SIZE.
  - B. NEW SPICE CAN/PULLBOX SHALL BE SEALABLE PER HECO STANDARDS.
  - C. SEE HECO DRAWINGS FOR THIS PROJECT FOR ADDITIONAL INFORMATION.
- PROVIDE NEW CT CABINET:
  - A. 42" X 42" X 11" DEEP
  - B. PER HECO ELECTRIC SERVICE INSTALLATION MANUAL, NINTH EDITION (CHAPTER 4.7) TRANSFORMER RATED METERING, TABLE 4-5 (FOR MAXIMUM NUMBER AND SIZE OF CONDUCTORS) OF (THREE 500 KC/MIL COPPER PER PHASE OR SMALLER), USING TYPE C (FLAT, HORIZONTAL BRACKETS) AND TYPE Z (VERTICAL BRACKETS) FOR MOUNTING OF CURRENT TRANSFORMERS. CT CABINET SHALL BE SEALABLE PER HECO STANDARDS.
  - C. CONFIRM CT CABINET SIZE AND TYPE WITH HECO.
  - D. SEE HECO DRAWINGS FOR THIS PROJECT FOR ADDITIONAL INFORMATION.

**NOTES - CONTINUED:**

- NEW METER SOCKET (FOR NEW HECO METER) 120/288Y, 3PH, 4W SERVICE:
  - A. COMMERCIAL METER SOCKET, OUTDOOR, 3/16 STAINLESS STEEL.
  - B. \_\_\_\_\_ KVAIC RATING, PENDING RATING OF NEW PROPOSED HECO PAD MOUNTED TRANSFORMER, BY HECO.
  - C. JAMMING CONFORM WITH HECO REQUIREMENTS).
  - D. PRACTICAL MOUNTING POSITION OF COMMERCIAL TEST BY-PASS (CONFORM WITH HECO REQUIREMENTS).
- PROVIDE NEW SEPARATE 600A, ENCLOSED MAIN CIRCUIT BREAKER DISCONNECT.
  - A. \_\_\_\_\_ KVAIC RATING, TO BE DETERMINED PENDING RATING OF NEW PROPOSED TRANSFORMER, BY HECO.
  - B. OUTDOOR, 3/16 STAINLESS STEEL.
- PROVIDE NEW (SPD) SURGE SUPPRESSION DEVICES:
  - A. TYPE 2, SUITABLE FOR CONNECTION ON THE LOAD-SIDE OF A SERVICE DISCONNECT WITH THE FOLLOWING REQUIREMENTS:
  - B. USE PER MANUFACTURER REQUIREMENTS.
  - C. SHALL NOT BE INSTALLED INSIDE A PANELBOARD OR SWITCHBOARD ENCLOSURE.
  - D. SHALL BE CONNECTED IN PARALLEL TO THE POWER SOURCE, KEEPING THE CONDUCTORS AS SHORT AND STRAIGHT AS PRACTICALLY POSSIBLE.
  - E. BENDS, IF ALLOWED, LEAD LENGTH SHALL BE 3- FEET AVOIDING 90-DEGREE PROTECTION.
  - F. INSTALLED AND IN COMPLIANCE WITH NEC ARTICLE 242 - OVERVOLTAGE PROTECTION.
- NEW 225A BRANCH CIRCUIT FEEDER:
  - A. TYPE 2, SUITABLE FOR CONNECTION ON THE LOAD-SIDE OF A SERVICE DISCONNECT WITH THE FOLLOWING REQUIREMENTS:
  - B. USE PER MANUFACTURER REQUIREMENTS.
  - C. SHALL NOT BE INSTALLED INSIDE A PANELBOARD OR SWITCHBOARD ENCLOSURE.
  - D. SHALL BE CONNECTED IN PARALLEL TO THE POWER SOURCE, KEEPING THE CONDUCTORS AS SHORT AND STRAIGHT AS PRACTICALLY POSSIBLE.
  - E. BENDS, IF ALLOWED, LEAD LENGTH SHALL BE 3- FEET AVOIDING 90-DEGREE PROTECTION.
  - F. INSTALLED AND IN COMPLIANCE WITH NEC ARTICLE 242 - OVERVOLTAGE PROTECTION.

**FEEDER SCHEDULE:**

LOCATION	ENTIRE FIRST FLOOR	ENTIRE UPPER FLOOR	TOTAL SQUARE FEET	ALLOWABLE VA = 208, 724 VA	AMPACTY = 680.9 AMPS
AREA (SQ. FT.)	15,625	1,802	17,427		

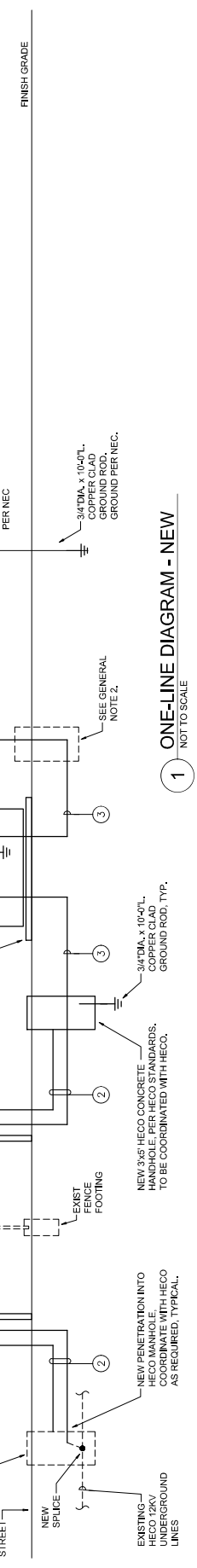
**LOAD ALLOWANCE FOR FUTURE BUILD-OUT OF ENTIRE FACILITY, BASED ON ALLOWABLE LOAD OF 12VA / SQUARE FEET, PER UNIFIED FACILITIES CRITERIA (UFC) 3-801-01 "ELECTRICAL ENGINEERING", CHAPTER 3-2.3 LOAD ANALYSIS:**

**GENERAL NOTES:**

- PROVIDE GRS (GALVANIZED RIGID STEEL) CONDUIT FOR ALL CONDUIT RUN EXPOSED AT BUILDING EXTERIOR.
- WHERE UNDERGROUND PVC CONDUITS TRANSITION FROM BELOW GRADE TO ABOVE GRADE:
  - A. PROVIDE 90-DEGREE (GRS) GALVANIZED RIGID STEEL RADIUS FACTORY ELBOW, AND CONTINUE WITH GRS CONDUIT TO ABOVE GRADE.
  - B. GRADE COUPLING BELOW GRADE TO TRANSITION FROM PVC CONDUIT TO GRS CONDUIT.
  - C. GALVANIZED RIGID STEEL, UNLESS OTHERWISE NOTED.
- FOR ALL UNDERGROUND DUCTS, PROVIDE GRS SEULANT FOR CONDUIT ENDS TO PREVENT WATER FROM ENTERING.

**WORK RELATED TO HECO - NOTES:**

- SEE "WORK RELATED TO (HECO) HAWAIIAN ELECTRIC COMPANY - NOTES" SHEET E-01 FOR ADDITIONAL INFORMATION.
- AMPERE INTERRUPTING CAPACITY (AIC) RATING OF EQUIPMENT - NOTES:
  - 1. THE (AIC) RATING OF THE FOLLOWING EQUIPMENT IS PENDING INFORMATION TO BE PROVIDED BY HECO:
    - A. METER SOCKET
    - B. METER SOCKET
    - C. 600A ENCLOSED MAIN CIRCUIT BREAKER DISCONNECT
    - D. (SPD) SURGE SUPPRESSION DEVICE
    - E. MAIN DISTRIBUTION PANEL MDP
    - F. ELECTRICAL PANEL A



**ONE-LINE DIAGRAM - NEW**  
NOT TO SCALE

1

PROJECT NO. CH-202209-C	DATE OF HAWAII LICENSE NO. 15160
PROJECT NAME: KALAELOA B90T RESTORATION	DATE OF HAWAII LICENSE NO. 15160
DRAWN BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
CHECKED BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
DESIGNED BY: [Redacted]	DATE OF HAWAII LICENSE NO. 15160
ENGINEER'S SEAL: [Redacted]	DATE OF HAWAII LICENSE NO. 15160



NO.	DESCRIPTION	DATE	BY

100% FINAL DESIGN  
DATE: 03/27/2024  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]

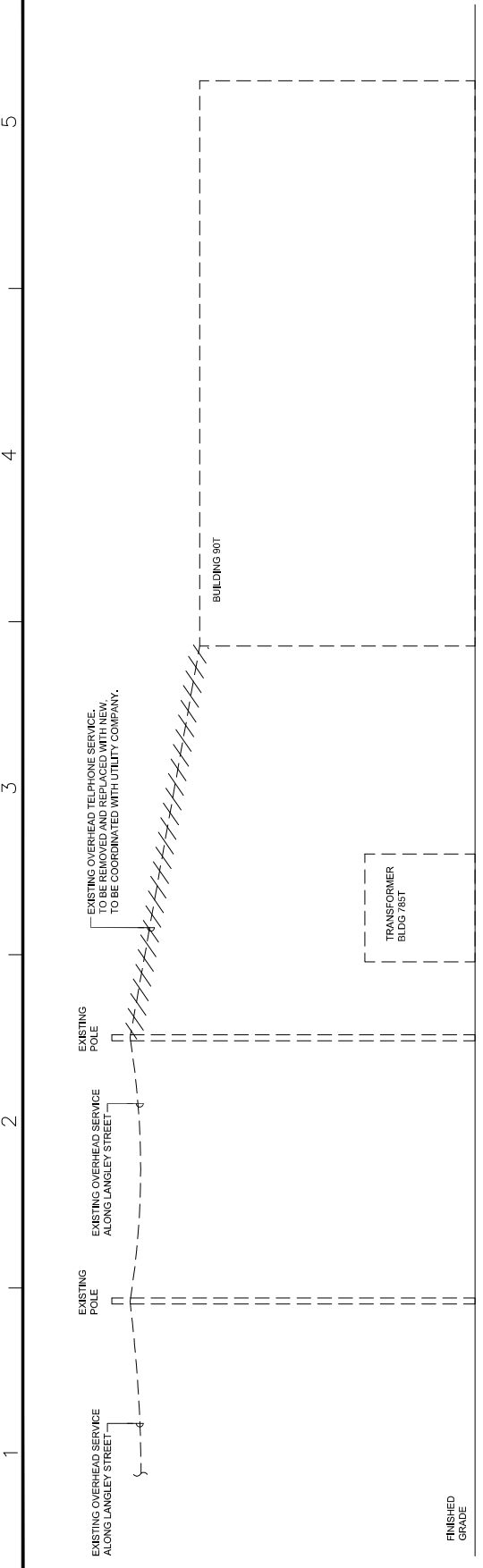
HAWAII ARMY NATIONAL GUARD  
DESIGN AND PROJECT MANAGER OFFICE  
KALELOA, HAWAII

TELEPHONE SERVICE - DEMO AND NEW

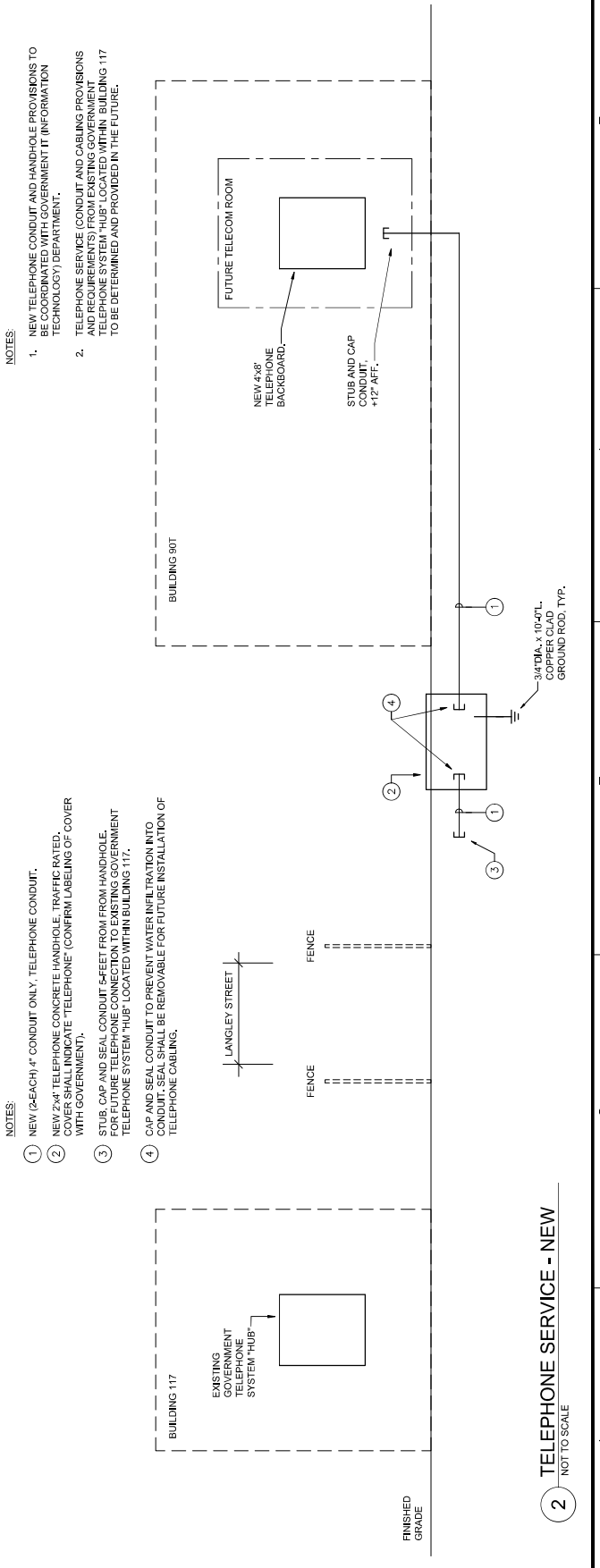
BUILDING 90T

AS NOTED

SHEET NO. CH-202209-C  
FEDERAL PROJECT NO. 15H0001A  
SCALE: AS SHOWN  
DATE: 03/27/24



1 TELEPHONE SERVICE - DEMO  
NOT TO SCALE



2 TELEPHONE SERVICE - NEW  
NOT TO SCALE

- NOTES:
1. NEW TELEPHONE CONDUIT AND HANDHOLE PROVISIONS TO BE COORDINATED WITH GOVERNMENT IT (INFORMATION TECHNOLOGY) DEPARTMENT.
  2. TELEPHONE SERVICE (CONDUIT AND CABLING PROVISIONS AND REQUIREMENTS) FROM EXISTING GOVERNMENT TELEPHONE SYSTEM "HUB" LOCATED WITHIN BUILDING 117 TO BE DETERMINED AND PROVIDED IN THE FUTURE.

- NOTES:
1. NEW (2-EACH) 4" CONDUIT ONLY, TELEPHONE CONDUIT.
  2. NEW 2"x4" TELEPHONE CONCRETE HANDHOLE, TRAFFIC RATED. COVER SHALL INDICATE "TELEPHONE" (CONFIRM LABELING OF COVER WITH GOVERNMENT).
  3. STUB, CAP AND SEAL CONDUIT 5-FEET FROM FROM HANDHOLE FOR FUTURE TELEPHONE CONNECTION TO EXISTING GOVERNMENT TELEPHONE SYSTEM "HUB" LOCATED WITHIN BUILDING 117.
  4. CAP AND SEAL CONDUIT TO PREVENT WATER INFILTRATION INTO CONDUIT. SEAL SHALL BE REMOVABLE FOR FUTURE INSTALLATION OF TELEPHONE CABLING.



*David C. Mendenhall*

NO.	DATE	DESCRIPTION

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: J. J. [unreadable]  
 CHECKED BY: [unreadable]  
 DESIGNED BY: [unreadable]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII

**KALAELOA B90T RESTORATION**

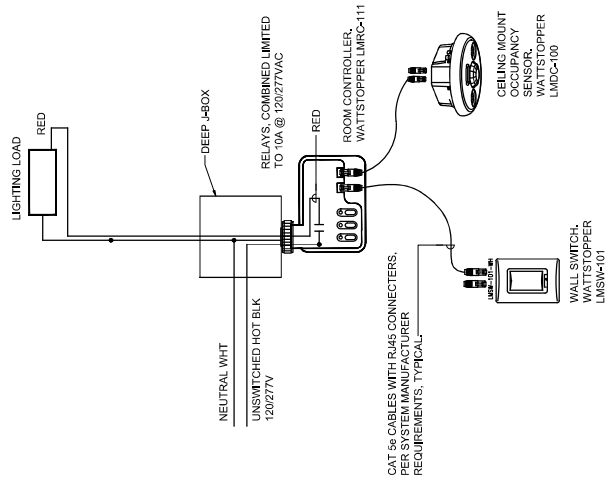
BUILDING 90T

DESIGN AND PROJECT MANAGEMENT OFFICE

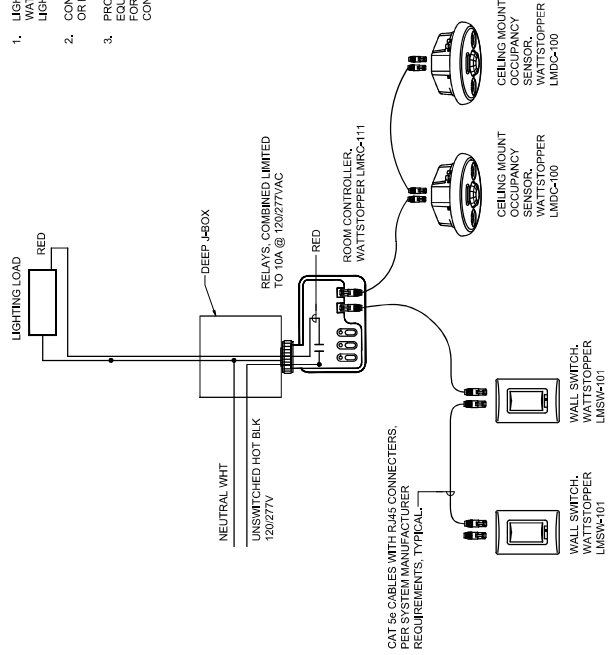
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 FEDERAL PROJECT NO.: 15H000114  
 DRAWING NO.: [unreadable]  
 E-604

**GENERAL NOTES**

1. LIGHTING CONTROLS DIAGRAM SHOWN IS BASED ON WATTSTOPPER DIGITAL LIGHTING MANAGEMENT (DLM) LIGHTING CONTROLS SYSTEM AND COMPONENTS.
2. CONTRACTOR SHALL PROVIDE APPROVED SYSTEM OF EQUAL OR BETTER PERFORMANCE.
3. PROVIDE ALL NECESSARY COMPONENTS, CABLING AND EQUIPMENT PER SYSTEM MANUFACTURER REQUIREMENTS FOR A COMPLETE AND FULLY OPERATIONAL LIGHTING CONTROLS SYSTEM.



**2 LIGHTING CONTROLS - CORRIDOR**  
 NOT TO SCALE



**1 LIGHTING CONTROLS - TYPICAL RESTROOM**  
 NOT TO SCALE

1 2 3 4 5

1 2 3 4 5

D

C

B

A

D

C

B

A



NO.	DATE	DESCRIPTION	BY

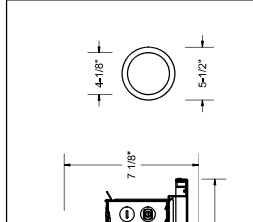
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 03/27/2024  
 DATE PLOTTED: 03/27/2024  
 USER: J. J. JONES

DESIGN AND PROJECT MANAGER: BRUNO KALAELOA, HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 OFFICE: KALAELOA, HAWAII

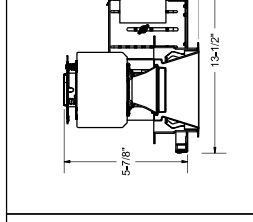
AS NOTED  
 BUILDING: 90T  
 SHEET NO.: CA-202209-C  
 FEDERAL PROJECT NO.: 15K000141  
 SHEET NO.: 15 OF 21  
 ESTIMATE NO.: E-701

STATE OF HAWAII  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGER: BRUNO KALAELOA, HAWAII  
 OFFICE: KALAELOA, HAWAII

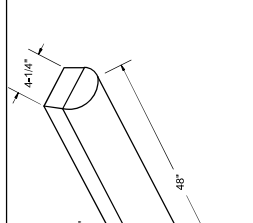
NO.	DATE	DESCRIPTION	BY
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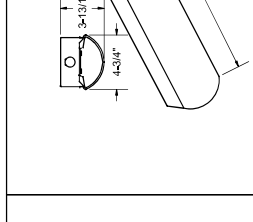
**(D)** LAMP & WATTS: 1000.0 LUMENS, 4000K, 13 WATTS, 120-277V  
 MOUNTING: RECESSED  
 DESCRIPTION: 4" DIA. x 5-7/8" HEIGHT, RECESSED, LENSED, LED LUMINAIRE, HEAVY DUTY GALVANIZED STEEL HOUSING, WITH REMOVABLE, ACCESSIBLE FROM ABOVE OR BELOW, CEILING, SPEC GRADE (1.2mm) THICK REFLECTOR, (HAZE) TRANSPARENT, CLEAR, TEMPERED GLASS LENS, FLOORED, C-CHANNEL BAR HANGARS, (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)  
 MANUFACTURER: ILP-INC  
 # S54G4DR - L2 - 408 - 1100 / IC439 - HZ - SF - CR  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



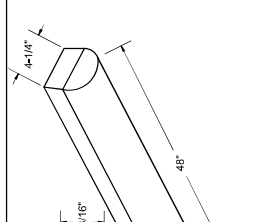
**(C)** LAMP & WATTS: 2532 LUMENS, 4000K, 19 WATTS, 120-277V  
 MOUNTING: CEILING SURFACE  
 DESCRIPTION: 2-1/2 FEET LED, LINEAR, NARROW, VAPOR TIGHT LUMINAIRE, INJECTION MOLDED ONE PIECE HOUSING, WITH REMOVABLE ACRYLIC FROSTED GLASS LENS, WET LOCATION.  
 MANUFACTURER: ILP-INC  
 # WT22 - 2L - U - 40K - RAFL  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



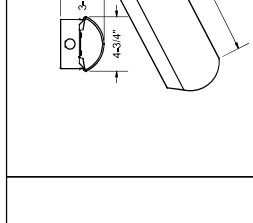
**(B)** LAMP & WATTS: 5201 LUMENS, 4000K, CRI>80, 38 WATTS, 120-277V  
 MOUNTING: CEILING SURFACE  
 DESCRIPTION: 4-1/2 FEET LED, LINEAR, NARROW, VAPOR TIGHT LUMINAIRE, INJECTION MOLDED ONE PIECE HOUSING, WITH REMOVABLE ACRYLIC FROSTED GLASS LENS, WET LOCATION.  
 MANUFACTURER: ILP-INC  
 # WT24 - 5L - U - 40K - RAFL  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



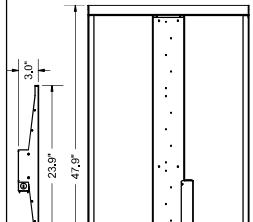
**(A)** LAMP & WATTS: 1177 LUMENS, 4000K, CRI>80, 35 WATTS, 120-277V  
 MOUNTING: RECESSED  
 DESCRIPTION: 2'x4' LED FLAT LENSED TROFFER, ALUMINUM FRAME, WHITE FINISH BODY, POST FABRICATION, FROSTED ACRYLIC LENS, 0-10V DIMMABLE DRIVER (100%-1%), HURRICANE CLIPS, DAMP LOCATION.  
 MANUFACTURER: ILP-INC  
 # F124 - 35VLED - U - 40K - POSTP - HC  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



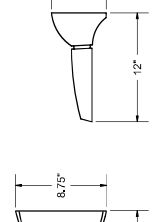
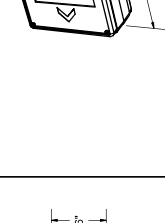
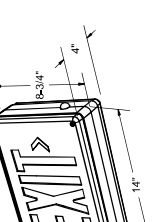
**(AE)** LAMP & WATTS: SAME AS TYPE A  
 MOUNTING: SAME AS TYPE A  
 DESCRIPTION: SAME AS TYPE A, EXCEPT PROVIDED WITH EMERGENCY BATTERY BACKUP SYSTEM, 10W LED FACTORY INSTALLED BATTERY BACKUP.  
 MANUFACTURER: ILP-INC  
 # F124 - 35VLED - U - 40K - POSTP - HC - EM10HRE



**(E)** LAMP & WATTS: 2893 LUMENS, 4000K, CRI>70, 22 WATTS, 120V  
 MOUNTING: WALL MOUNTED  
 DESCRIPTION: 8.75W x 12" x 6" WALL PACK, CAST ALUMINUM ELECTRICAL HOUSING, CAST POLYCARBONATE FACE, FIELD SELECTABLE CHEVRON INDICATORS, MAINTENANCE-FREE NICKEL CADMIUM BATTERY PACK, TEST SWITCH CONSTANT CURRENT DRIVER, 0-10V TEST / SELF-DIAGNOSTIC CIRCUITRY, SOLID STATE CONSTANT CURRENT CHARGER, WHITE BODY, REFER TO THIS SINGLE OR DOUBLE FACE AS NEEDED, DAMP LOCATION.  
 MANUFACTURER: US ARCHITECTURAL  
 # 875L - 10W x 6" LED - III - 20VLED - 500MA - NW - 120V - DARK BRONZE - MS-F31  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



**(X)** LAMP & WATTS: 5 WATTS, 120V  
 MOUNTING: CEILING, END, SIDE, UNIVERSAL  
 DESCRIPTION: LED EXIT SIGN, DIE CAST ALUMINUM HOUSING, POLYCARBONATE FACE, FIELD SELECTABLE CHEVRON INDICATORS, MAINTENANCE-FREE NICKEL CADMIUM BATTERY PACK, TEST SWITCH CONSTANT CURRENT DRIVER, 0-10V TEST / SELF-DIAGNOSTIC CIRCUITRY, SOLID STATE CONSTANT CURRENT CHARGER, WHITE BODY, REFER TO THIS SINGLE OR DOUBLE FACE AS NEEDED, DAMP LOCATION.  
 MANUF. EVENTIDE ENTRY - CDW SERIES  
 # CDW - EM - G - U - WW  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)



**(E)** LAMP & WATTS: 2893 LUMENS, 4000K, CRI>70, 22 WATTS, 120V  
 MOUNTING: WALL MOUNTED  
 DESCRIPTION: 8.75W x 12" x 6" WALL PACK, CAST ALUMINUM ELECTRICAL HOUSING, CAST POLYCARBONATE FACE, FIELD SELECTABLE CHEVRON INDICATORS, MAINTENANCE-FREE NICKEL CADMIUM BATTERY PACK, TEST SWITCH CONSTANT CURRENT DRIVER, 0-10V TEST / SELF-DIAGNOSTIC CIRCUITRY, SOLID STATE CONSTANT CURRENT CHARGER, WHITE BODY, REFER TO THIS SINGLE OR DOUBLE FACE AS NEEDED, DAMP LOCATION.  
 MANUFACTURER: US ARCHITECTURAL  
 # 875L - 10W x 6" LED - III - 20VLED - 500MA - NW - 120V - DARK BRONZE - MS-F31  
 (OR APPROVED FIXTURE OF SIMILAR OR EQUAL PERFORMANCE)







DATE	DESCRIPTION	BY

100% FINAL DESIGN  
 DATE: 03/27/2024  
 DRAWN BY: [Redacted]  
 CHECKED BY: [Redacted]

HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALELOA, HAWAII  
 BUILDING 907  
 SCHEDULES  
 KALAELOA B907 RESTORATION

DATE OF ISSUE: AS NOTED  
 SHEET NO.: CH-202209-C  
 FEDERAL PROJECT NO.: 15HQ00141  
 DRAWING TITLE: B907 RESTORATION  
 SHEET: 17 OF 21  
 E-703

### EQUIPMENT SCHEDULE

EQUIPMENT ID	EQUIPMENT DESCRIPTION	SPECIFIED RATING (HP / KW)	VOLTAGE / PHASE	FLA / IRLA	MCCP	MCA	TERMINATION TYPE	POLES / AMPS	DISCONNECT SWITCH ENCLASURE	BRANCH CIRCUIT REQUIREMENT	REMARKS
PRV-1	ROOF VENTILATOR	0.5 HP	115V / 1PH	6.4A	15A	8A	HARDWIRED	-	-	SEE PANEL SCHEDULE	INTEGRAL DISC SWITCH (BY MECH)
PRV-2	ROOF VENTILATOR	0.75 HP	115V / 1PH	8.6A	15A	11A	HARDWIRED	-	-	SEE PANEL SCHEDULE	INTEGRAL DISC SWITCH (BY MECH)
PRV-3	ROOF VENTILATOR	0.25 HP	115V / 1PH	2.85A	15A	4A	HARDWIRED	-	-	SEE PANEL SCHEDULE	INTEGRAL DISC SWITCH (BY MECH)
DEF-1	CEILING EXHAUST FAN	61 WATTS	115V / 1PH	0.46A	-	-	HARDWIRED	30A	NEMA 1	SEE PANEL SCHEDULE	EXHAUST FAN TO RUN 2/7
EW-H1	ELEC WATER HEATER	12.1 KW	208V / 3PH	50A	-	-	HARDWIRED	-	-	SEE PANEL SCHEDULE	FLA FROM MECHANICAL UPPER ELEMENT: 6050 WATTS LOWER ELEMENT: 6050 WATTS

### LIGHTING CONTROLS SCHEDULE

ROOM NO./ID	ROOM NAME	LCW VOLTAGE	SWITCH TYPE	RECEPTACLE CONTROL	LIGHTING CONTROL REQUIREMENTS	CONTROL DIAGRAM REFERENCE	REMARKS
NONE	ELECTRIC ROOM	NO	MANUAL TOGGLE	NO	MANUAL ON MANUAL OFF		
NONE	FUTURE TELECOM ROOM	NO	MANUAL TOGGLE, 3-WAY	NO	MANUAL ON MANUAL OFF		
NONE	JANITOR CLOSET	NO	WALL SWITCH + OCCUPANCY SENSOR	NO	MANUAL ON AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY		WATSTOPPER DSW-301, OR APPROVED EQUAL
NONE	CORRIDOR	YES	1-BUTTON WALL SWITCH WITH CEILING MOUNTED OCCUPANCY SENSOR	NO	AUTOMATIC ON FOR 100% OF LIGHTS AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY	DETAIL 2, SHEET E-604	WATSTOPPER LMSW-101, OR APPROVED EQUAL
NONE	WOMEN'S RESTROOM	YES	1-BUTTON WALL SWITCH WITH CEILING MOUNTED OCCUPANCY SENSOR	NO	AUTOMATIC ON FOR 100% OF LIGHTS AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY	DETAIL 1, SHEET E-604	WATSTOPPER LMSW-101, OR APPROVED EQUAL
NONE	WOMEN'S RESTRM, SHOWER	NO	WALL SWITCH + OCCUPANCY SENSOR	NO	MANUAL ON AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY		WATSTOPPER DSW-301, OR APPROVED EQUAL
NONE	MENS RESTROOM	YES	1-BUTTON WALL SWITCH WITH CEILING MOUNTED OCCUPANCY SENSOR	NO	MANUAL ON AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY	DETAIL 1, SHEET E-604	WATSTOPPER LMSW-101, OR APPROVED EQUAL
NONE	MENS RESTROOM, SHOWER	NO	WALL SWITCH + OCCUPANCY SENSOR	NO	MANUAL ON AUTOMATIC OFF AFTER 30 MINUTES OF INACTIVITY		WATSTOPPER DSW-301, OR APPROVED EQUAL

- LIGHTING CONTROLS - NOTES:**
- LOW VOLTAGE LIGHTING CONTROLS IS BASED ON WATSTOPPER (DLM) DIGITAL LIGHTING MANAGEMENT SYSTEM DEVICES AND COMPONENTS. LOW VOLTAGE LIGHTING CONTROLS SHALL BE PROVIDED FOR ALL EQUIPMENT PROVIDED SHALL BE OF APPROVED EQUAL OR BETTER PERFORMANCE.
    - CEILING MOUNTED OCCUPANCY SENSOR PROVIDED SHALL BE OF APPROVED EQUAL OR BETTER PERFORMANCE.
    - WALL MOUNTED OCCUPANCY SENSOR PROVIDED SHALL BE OF APPROVED EQUAL OR BETTER PERFORMANCE.
  - CEILING MOUNTED OCCUPANCY SENSOR:
    - CEILING MOUNTED OCCUPANCY SENSOR PROVIDED SHALL BE OF APPROVED EQUAL OR BETTER PERFORMANCE.
  - LOW VOLTAGE LIGHTING CONTROLS ROOM CONTROLLERS:
    - BASED ON WATSTOPPER LMRG-H1 (1 RELAY ROOM CONTROLLER, 0-10V DIMMING).
    - ROOM CONTROLLER PROVIDED SHALL BE OF APPROVED EQUAL OR BETTER PERFORMANCE.
  - PROVIDE ALL NECESSARY DEVICES, COMPONENTS, CABLING AND EQUIPMENT FOR A COMPLETE AND FULLY OPERATIONAL LIGHTING CONTROLS SYSTEM AS NEEDED.